



# Tidal View from Boao:

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## Building Belt and Road in the Past Decade

Boao Forum for Asia Academy

October 2023

Boao Forum for Asia

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Building Belt and Road  
in the Past Decade**

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# Foreword

The year 2023 marks the 10th anniversary of the proposal of the Belt and Road Initiative (BRI) by President Xi Jinping of China. Looking back, thanks to the joint efforts of all stakeholders, BRI has produced fruitful outcomes over the past decade, with the concepts of mutual benefit, win-win cooperation, and common development deeply entrenched in people's minds. The post-COVID world is now confronted with accelerating changes unprecedented in a century, a growing risk of escalation in geopolitical conflicts, and intensifying economic fragmentation worldwide. Given these circumstances, it becomes even more important to implement BRI resolutely in the next decade and align it with the development initiatives and strategies of various regions and countries. This will help bring stability and development to Asia and the world and contribute to global modernization.

BRI has brought tangible benefits to the participating countries and has helped enhance global multilateral cooperation and governance. Infrastructure connectivity is a key priority of the initiative. The China-Europe Railway Express has become a "steel camel caravan" enabling the smooth flow of goods between Asia and Europe. The China-Laos Railway has transformed Laos from a landlocked to a land-linked country, while the Mombasa-Nairobi Standard Gauge Railway has taken transportation infrastructure in East Africa to a new altitude. Trade and investment cooperation represent another critical component of BRI. Over the past decade, the volume of goods traded between China and BRI countries has doubled, accompanied by a continuous improvement in trade and investment liberalization and facilitation among BRI countries. The advancement of BRI is also attributed to financial integration and connectivity. The Silk Road Fund and Asian Infrastructure Investment

Bank have been established, and development finance and commercial finance together have established a multi-level investment and financial service ecosystem. Moreover, through numerous livelihood and people-to-people exchange projects that have brought real benefits to host communities, BRI has become a belt of development for participating countries and a road towards happiness for the people.

BRI is injecting positive energy into world peace and development. It is an important global public good that promotes unity, cooperation, and solidarity among BRI countries. Today's world is fraught with constant security risks in both traditional and non-traditional domains. And BRI is also faced with diverse significant challenges—such as the ongoing conflict between Russia and Ukraine, the eruption of a new conflict between Israel and Palestine, the frequent occurrence of extreme weather events due to climate change, the negative impacts on global supply chains from "decoupling" and "small yard, high fence", and the risk of disorder in digital governance. However, as our world faces growing instability and uncertainty, deepening economic fragmentation, and widening development gaps, it becomes even more critical for all parties to resolve differences and bridge gaps through dialogue, coordination, shared responsibility, and common development. If greater determination is demonstrated in implementing BRI and if BRI is well aligned with various regional and national development initiatives, we will certainly widen the path towards common development and prosperity.

Over the past decade, world leaders and heads of international organizations have shared their insightful perspectives on BRI's considerable significance,

great achievements, and wide influence through the international dialogue platform of the Boao Forum for Asia (BFA). BFA partners and members are also active BRI participants. They have taken concrete actions to write impressive success stories in the fields of infrastructure construction, connectivity as well as promotion of inclusive, green, digital and sustainable development. At the same time, renowned experts and scholars from various countries have been documenting best practices in BRI and comprehensively analyzing the international environment, national policies, industrial development, prospects, and challenges associated with the initiative, in order to recommend practical solutions that will help sustain the steady progress of BRI.

BRI has gained unstoppable momentum.

This report aims to expose readers directly to the views of the BFA, corporate practices, and the illuminating perspectives of experts and scholars. Readers will gain a deeper understanding of diverse critical economic issues that arise during the practical implementation of the BRI. These issues encompass economic growth prospects, debt sustainability, trade liberalization and facilitation, infrastructure development, climate investment and financing, economic digitalization, and ESG investment in BRI countries. It is our sincere hope that following the successful convening of the third Belt and Road Forum for International Cooperation, this report will provoke extensive and ongoing discussions among all sectors of society on how to collectively advance the BRI and drive meaningful actions in the next decade.

Secretary General  
The Boao Forum for Asia





# Voice of Boao





## Building Belt and Road in the Past Decade

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### Chinese Leaders:



**Chinese President Xi Jinping:** Changes of the world, of our times, and of historical significance are unfolding like never before. China is endeavoring to build itself into a stronger country and rejuvenate the Chinese nation on all fronts by pursuing Chinese modernization. The modernization we are pursuing is not for China alone, but for all developing countries through our joint efforts. Global modernization should be pursued to enhance peaceful development and mutually beneficial cooperation and bring prosperity to all. China will work with all parties involved to deepen Belt and Road partnerships of cooperation, usher this cooperation into a new stage of high-quality development, and make relentless efforts to achieve modernization for all countries. **(Keynote Speech at the third Belt and Road Forum for International Cooperation)**

In promoting this initiative, China will follow the principle of wide consultation, joint contribution and shared benefits. The programs of development will be open and inclusive, not exclusive. They will be a real chorus comprising all countries along the routes, not a solo for China itself. The “Belt and Road” and the AIIB are both open initiatives. We welcome all countries along the routes and in Asia, as well as our friends and partners around the world, to take an active part in these endeavors. The “Belt and Road” initiative is not meant as rhetoric. It represents real work that could be seen and felt to bring real benefits to countries in the region. **(Annual Conference 2015)**

The BRI may be China’s idea, but its opportunities and outcomes are going to benefit the world. China has no geopolitical calculations, seeks no exclusionary blocs and imposes no business deals on others. It must be pointed out that as the BRI is a new initiative, it is perfectly natural for there to be different views. As long as the parties embrace the principle of extensive consultation, joint contribution and shared benefits, we can surely enhance cooperation and resolve differences. This way, we can make the BRI the broadest platform for international cooperation in keeping with the trend of economic globalization and to the greater benefit of all our peoples. **(Annual Conference 2018)**

The Belt and Road Initiative (BRI) is a public road open to all, not a private path owned by one single party. All interested countries are welcome aboard to take part in the cooperation and share in its benefits. Belt and Road cooperation pursues

development, aims at mutual benefits, and conveys a message of hope. Going forward, we will continue to work with other parties in high-quality Belt and Road cooperation. We will follow the principles of extensive consultation, joint contribution and shared benefits, and champion the philosophy of open, green and clean cooperation, in a bid to make Belt and Road cooperation high-standard, people-centered and sustainable. **(Annual Conference 2021)**

China will press ahead with high-quality Belt and Road cooperation to make it high-standard, sustainable and people-centered. China will unswervingly follow the path of peaceful development, and always be a builder of world peace, a contributor to global development, and a defender of the international order. **(Annual Conference 2022)**



**Chinese Premier Li Qiang:** Over the past ten years, China has taken concrete actions to advance the building of a community with a shared future for mankind, and achieved a series of major outcomes. The high-quality Belt and Road cooperation, in particular, has helped developing countries achieve faster development and opened up new space for the growth of the world economy. We need to build an open world economy, promote high-quality Belt and Road cooperation, further liberalize and facilitate global trade and investment, oppose trade protectionism, decoupling or cutting supply chains, keep global industrial and supply chains stable and smooth, and inject strong dynamism into the global economy. **(Annual Conference 2023)**

## Heads of International Organizations



**Secretary-General of the United Nations, Antonio Guterres:** The sense of transformation is evident throughout China and in its relations with the world. By connecting peoples and markets in Asia, Europe and Africa, including in Latin America, this ambitious initiative can contribute significantly to a more fair, peaceful and prosperous world. Our destination must be a fair globalization that leaves no one behind as a pathway to peace and sustainable development for people, communities and countries. **(Annual Conference 2018)**



**President of the 75th session of the General Assembly, Volkan Bozkir:** In the Asian region, strong economies and closer economic integration are supporting economic growth and providing a boost to sustainable development. Where aligned with the 2030 Agenda and local and national development plans, endeavors, such as the Belt and Road Initiative, offer promising opportunities to increase trade and advance sustainable development. **(Annual Conference 2021)**

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**Chairman of the Boao Forum for Asia and Former Secretary-General of the United Nations, Ban Ki-moon:** The Belt and Road Initiative (BRI) is a significant driver of development in developing countries. There are many underdeveloped countries in this world that are in urgent need of development but lack sufficient resources to develop on their own. BRI not only covers Asia but also extends beyond this region. The RCEP (Regional Comprehensive Economic Partnership) and BRI are both crucial powerhouses for driving the development of developing countries. The Boao Forum for Asia (BFA) is committed to promoting Asian economic integration, and the implementation of RCEP and BRI will help establish a broadly inclusive platform for international cooperation that aligns with BFA's mission and purpose. **(Annual Conference 2023)**

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**Chairman of the Council of Advisors of the Boao Forum for Asia and Former Prime Minister of Japan, Yasuo Fukuda:** The Belt and Road Initiative (BRI) is a vision that transcends China's national interests and embodies a holistic approach towards building a community with a shared future for mankind. BRI is a concrete action to implement this vision. BRI is not a narrow or self-serving initiative solely benefiting China or the participating nations, but represents a lofty ideal aimed at creating a better and more harmonious world. Given the significance of this noble concept, there is no reason for Japan not to support this initiative. The Boao Forum for Asia was founded with the mission of building a community with a shared future for mankind. This is why it can attract participants from around the world to collectively explore critical issues and work in solidarity to steer the "ship" of a community with a shared future for mankind towards a better future. **(Annual Conference 2019)**

## Heads of State/Government



**President of Austria, Alexander Van der Bellen:** Openness and innovation should be interconnected and universalized. Asia is currently promoting a series of initiatives to enhance connectivity, which will further strengthen the links between economies. The Belt and Road Initiative proposed by China is an excellent example of this effort. Connectivity will effectively contribute to advancing global prosperity. **(Annual Conference 2018)**

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**Then-President of Austria, Heinz Fischer:** The remarkable success in China's economic and social development has brought about profound transformations, making China a critical part of Asia and even the world's future. Austria places great importance on the Belt and Road Initiative (BRI), as it will have a positive impact on political, economic, trade, and cultural exchanges among BRI countries. It is a commendable initiative. Austria sincerely hopes for the early realization of an Asian community with a shared future. **(Annual Conference 2015)**

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**Prime Minister of Malaysia, Dato'Seri Anwar bin IBRAHIM:** Translating of the ideas of the practical reality, solidarity and cooperation is best exemplified in the realization of the Belt and Road Initiative. With a pandemic behind us, we should try to gain or regain its momentum. I cannot overstate that if we continue to cooperate, speak in a unified voice and exchange ideas on strategy and best policy practices, we can work towards an Asia that is stronger and more resilient. **(Annual Conference 2023)**

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**President of the Lao PDR, Thongloun Sisoulith:** Since its initiation by President Xi Jinping, "the Belt and Road Initiative (BRI)" in 2013 has been welcomed worldwide and made tangible achievements, especially contributing to regional and international connectivity, benefiting the BRI participating countries, especially the land-locked nations including the Lao PDR which attaches the importance to this initiative. The Lao PDR actively supports BRI since its inception as it is in line with the national development strategy, particularly the development of transport infrastructure, aiming to transform the country from being a land-locked into a land-linked nation. **(Annual Conference 2021)**



**Prime Minister of Malta, Robert Abela:** The ties between Europe and Asia continued to develop on this base. The Belt and Road Initiative, of which Malta was one of the first signatories, explained a perfect role in achieving this goal. And my government sees major opportunities in this context, particularly for the creation of jobs and economic growth. These go hand in hand with opportunities to work to promote global public goods, sustainable development, and determination of security, and towards international and regional challenges within the multi-national system. **(Annual Conference 2021)**

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**Prime Minister of Mongolia, Luvsannamsrain Oyun-Erdene:** Promoting liberalization in aviation transportation and creating a favorable environment for foreign trade are also crucial goals for the Mongolian government. It is believed that these efforts will contribute positively towards strengthening cooperation under the Belt and Road Initiative and achieving more fruitful outcomes. **(Annual Conference 2021)**

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**Sultan of Brunei, Haji Hassanal Bolkiah:** The Belt and Road Initiative will further complement the internationalization of our economies. It is a significant project that will contribute to regional connectivity and further enhance the economic landscape. It can also present an opportunity for us to work together in many areas and through sub-regional forums such as BIMP-EAGA. **(Annual Conference 2021)**

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**Prime Minister of Bangladesh, Sheikh Hasina Wazed:** Bangladesh has been actively engaged in regional connectivity initiatives, including the South Asian Subregional Economic Cooperation, the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, and other regional interconnectivity initiatives. With its unique geographical location, Bangladesh serves as a vital link connecting South Asia, Southeast Asia, East Asia, and other regions through multimodal transportation. We believe that the Belt and Road Initiative will play an important role in this regard. **(Annual Conference 2021)**



**Then-President of Kazakhstan, Nursultan Nazarbayev:** In 2013, Kazakhstan and China signed a strategic agreement on the Belt and Road Initiative (BRI), which represents the alignment of the 'Bright Road' initiative with BRI. Under this agreement, joint projects are implemented to strengthen financial cooperation, expand trade, and unleash the potential of transit transport. Kazakhstan has effectively seized this window of opportunity. Since its inception, BRI has been demonstrating its vitality and value in promoting advanced concepts of cooperation and driving globalization. **(Annual Conference 2021)**

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**Then-Prime Minister of Kazakhstan, Karim Qazhymqanuly Massimov:** The Belt and Road Initiative (BRI) is a timely response to the needs of the times and is instrumental in fully unlocking the development potential of the region. The establishment of the Asian Infrastructure Investment Bank (AIIB) will also strengthen the economic development of this region. Kazakhstan has launched the 'Bright Road' plan and is willing to align with BRI for common progress. **(Annual Conference 2015)**

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**Then-President of Chile, Miguel Juan Sebastián Piñera Echenique:** We need to collaborate to tackle present and future pandemics and drive the ongoing process of recovery. Multilateral initiatives, including the Belt and Road Initiative, will play a significant role in the post-COVID economic recovery. It is our responsibility to promote inclusive and genuine recovery, ensuring that both the economy and the world will be better, fairer, and more sustainable after the end of the pandemic. **(Annual Conference 2021)**

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**Then-Prime Minister of Cambodia, Hun Sen:** Cambodia highly appreciates China's proposal of the Health Silk Road under the Belt and Road Initiative (BRI) and its leadership role in providing medicines, epidemic prevention supplies, and vaccines to various countries. This is a testament to China's global leadership. The implementation of BRI will be a strong driver for global solidarity to accelerate the economic recovery of countries. Since its launch, BRI has gathered tremendous momentum and has been instrumental in promoting global and regional cooperation, advancing infrastructure development, deepening economic, trade and investment cooperation, and enhancing people-to-people exchanges and mutual understanding. Given the current economic sluggishness worldwide, our joint efforts under BRI will add impetus to development, foster regional and global cooperation, and promote world peace, security, prosperity, and sustainable development. **(Annual Conference 2021)**



**Then-President of Vietnam, Nguyễn Xuân Phúc:** We welcome the emphasis on strengthening regional economic connectivity under the Belt and Road Initiative (BRI) and hope that BRI will contribute to the post-COVID economic recovery worldwide. Vietnam and China are actively developing plans to effectively implement the Memorandum of Understanding on BRI cooperation. As friendly close neighbors, Vietnam and China have collaborated successfully in achieving significant outcomes in the fight against the COVID-19 pandemic. This achievement is a bright spot, regionally and globally. **(Annual Conference 2021)**



**Then-Prime Minister of Pakistan, Shahid Khaqan Abbasi:** In Pakistan today, step by step, brick by brick, a brave new Asia is taking shape. The China Pakistan Economic Corridor, the flagship project of BRI is fast reaching fruition. It is an excellent example of an open, coordinated, and inclusive development paradigm that benefits all stakeholders. At the southern tip of this Corridor, development of the deep seaport of Gwadar is proceeding at a fast track. On completion, it will not only serve as a transit and transshipment hub, but become an economic nucleus. Besides Pakistan, it will afford shortest maritime and overland access to Western China, Central and South Asia and the Middle East. **(Annual Conference 2018)**



**Then-President of Nepal, Ram Baran Yadav:** The only way to realize a community with a shared future is to strengthen partnerships and expand cooperation among countries. With its rich natural and human resources, Nepal has enormous potential in agriculture and hydropower development, and it is in urgent need of investment in sectors such as infrastructure, agricultural production, education, tourism, and information technology. Nepal is fully committed to exerting its utmost efforts and providing maximum cooperation in the process of building an Asian community with a shared future, through platforms such as the Asian Infrastructure Investment Bank (AIIB) and the Belt and Road Initiative. **(Annual Conference 2015)**



**Deputy Prime Minister and Minister of Economy and Development of Mongolia, Chimed Khurelbaatar:** The Belt and Road Initiative (BRI) aims to benefit and bring shared prosperity to participating countries. Mongolia is currently trading with over 100 countries and regions. Over the past decade, Mongolia's foreign trade has doubled, with exports also seeing a twofold increase. Moreover, Mongolia has constructed 500 kilometers of railways, connecting all provinces, including their respective capital cities. Mongolia is a great beneficiary of China's strong economic growth and BRI, which is a pathway towards shared growth, common development, and prosperity. **(Annual Conference 2023)**





**Then-First Deputy Prime Minister of Kazakhstan, Bakhytzhan Sagintayev:**

Asia is the largest investment market that possesses transportation, logistical and demographic advantages. In this context, the Belt and Road Initiative (BRI) proposed by President Xi Jinping allows us to enhance mutually beneficial cooperation. The 21st century has taken us to a new economic altitude, where information technology has brought about profound societal transformations and the economic crisis is still ongoing. Despite threats and challenges, Kazakhstan has maintained stability and achieved a growth momentum. Kazakhstan and China are working together to align the Bright Road with BRI. **(Annual Conference 2016)**

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**Then-Deputy Prime Minister of Qatar, Ahmad bin Abdullah Al Mahmoud:**

Strengthening economic and trade cooperation and achieving lasting peace and stability are the foundations for realizing the development visions of Asian countries. Qatar seeks to enhance political, economic and security cooperation with regional countries, promote connectivity through the Belt and Road Initiative and strive for the realization of an Asian economic community. **(Annual Conference 2015)**

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**Then-First Deputy Prime Minister of Russia, Igor Shuvalov:**

The former Soviet region is also stepping up its integration efforts. The Eurasian Economic Union seeks to cooperate with Asia and enhance connectivity with the Belt and Road Initiative to build infrastructure such as railways and highways. **(Annual Conference 2015)**



# Experts ' View



# Economic Growth of the Belt and Road

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Ba Shusong<sup>1</sup>

Executive Director of the HSBC Financial Research Institute at Peking University  
Vice President of the China Society of Macroeconomics

The year 2023 marks the tenth anniversary of the Belt and Road Initiative. Over the past decade, although global economic development has faced enormous challenges, the globalization process has encountered strong obstacles, and geopolitical conflicts are still ongoing. Under China's active advocacy of the concept of win-win cooperation, the Belt and Road Initiative has become an important engine for promoting the economic development of the countries along the route and has achieved remarkable results and progress in different regions. Despite making impressive progress in many regions, the Belt and Road Initiative also faces great challenges. This report focuses on six subregions namely Southeast Asia, Central Asia, South Asia, Africa, Latin America and Western Asia. The report takes into account the unique historical background, geographic advantages, natural resource characteristics and development potential of each region, and focuses on the economic development trend and growth potential of each region under the Belt and Road Initiative in order to provide useful policy recommendations for future cooperation and development.

## 1. Economic Development Under the Belt and Road Initiative

In 2013 Chinese President Xi Jinping proposed to build the Silk Road Economic Belt and the 21st

Century Maritime Silk Road in Kazakhstan and Indonesia. The Belt and Road Initiative has thus entered the international community's view. The year 2023 marks the 10th anniversary of the Belt and Road Initiative. Against the backdrop of the accelerating evolution of unprecedented changes around the world, the Belt and Road Initiative has continued to grow and gained the recognition and support of international organizations such as the United Nations and other relevant countries. Since the launch of the Belt and Road Initiative, the number of countries that have signed cooperation agreements has increased year by year, and has now attracted the participation of more than three quarters of the world's countries. As of June 2023, 152 countries and 32 international organizations had signed more than 200 cooperation documents with China on the construction of the Belt and Road, covering such areas as connectivity, trade, investment, finance, society, oceans, e-commerce, science and technology, people's livelihoods and the humanities.

Over the past decade, the economies of the Belt and Road countries have developed rapidly and their total GDP has been increasing. By the end of 2022, of the 151 countries that have signed the Belt and Road agreement with China, 144 countries (no data for Syria, Lebanon, Afghanistan, Cuba, Palestine, Niue or the Cook Islands) have a total GDP value of \$23.28 trillion, accounting for 23.23% of the global GDP, with a compound annual growth rate of 1.68%. According to McKinsey's forecast, by 2050, the regions along the

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<sup>1</sup> Wu Jiaming, Liu Yilin, and Rewan TUOHEDAER also contributed to this article.

Belt and Road will contribute about 80% of the world's incremental GDP, with huge development potential. According to the World Bank's report, the construction of the Belt and Road has increased international trade by 4.1%, attracted 5% more foreign investment, and increased the GDP of low-income countries by 3.4%. Benefiting from the Belt and Road Initiative, emerging and developing economies share of global GDP increased by 36% from 2012 to 2021.. The World Bank estimates that by 2030, the construction of the Belt and Road will generate annual benefits of \$1.6 trillion for the world, accounting for 1.3% of global GDP. In 2015-2030, 7.6 million people will thus be lifted out of absolute poverty and 32 million out of moderate poverty.

### **1.1 Southeast Asia: Beneficiaries of Industry Chain Restructuring**

Southeast Asia is an important subregion along the Belt and Road, combining the functions of both marginal-marine land and continental-margin land. The ten countries of Southeast Asia are located south of China and have a relatively unique regional location. The Southeast Asia region comprises 11 countries, namely Indonesia, Philippines, Myanmar, Brunei, Timor-Leste, Thailand, Vietnam, Singapore, Cambodia, Laos and Malaysia, which have all signed cooperation documents with China on the construction of the Belt and Road. This region spans the northern and southern hemispheres, connects three continents (Asia, Africa and Oceania) and two oceans (the Pacific and Indian Oceans), and is an important gateway to several of the world's major economies (China, the United States, Japan and the European Union). Over the past decade, the Belt and Road and Southeast Asian countries have realized the docking of development strategies or the successive landing of relevant initiatives, and the economic development of the Southeast Asian region has shown rapid growth, becoming an important driving force for global economic growth.

#### **1.1.1 Economic Dynamism and Development Potential**

In recent years, the economies of Southeast Asian countries have been developing rapidly with obvious potential for market development. Over the past ten years, the ten-year compound annual growth rate of GDP in Southeast Asia has been 4.14%, 1.09

percentage points above the global level. At the same time, the level of economic development within ASEAN is highly uneven, ranging from the highly developed economy of Singapore, to the emerging economy of Vietnam which has seen rapid economic growth in recent years and has attracted much attention, to Cambodia, Laos, and Myanmar which are classified among the underdeveloped countries. Among them, Vietnam's growth rate was 6.64%, the fastest economic growth rate in Southeast Asia. Cambodia, Laos and the Philippines also grew faster, at 6.18%, 5.92% and 5.56% respectively. In 2022, Southeast Asia's regional GDP totaled about \$3.66 trillion, accounting for about 9% of Asia's GDP and about 3.5% of the world's GDP. Indonesia's GDP of US\$1.32 trillion is the largest in Southeast Asia, far larger than the remaining nine countries, while Myanmar, Cambodia, Laos and Brunei have smaller economies with their combined GDPs accounting for less than 4% of Southeast Asian's GDP. In the past decade the GDP per capita of Southeast Asia has increased from \$4201.507 in 2013 to \$5434.08 in 2022, with a compound growth rate of 2.90%. The countries with the highest per capita GDP in 2022 were Singapore, Brunei, and Malaysia, with \$82808, \$37644, and \$12363 respectively.

In terms of the growth rate of imports and exports, except for a certain decline in 2020 due to the impact of the COVID-19, imports and exports in Southeast Asia (no data available for Timor-Leste) have been growing rapidly over the past decade, with an average growth rate of 5.47% in exports of goods and services and an average growth rate of 5.24% in imports. Among them, the fastest-growing export countries are Vietnam, Cambodia and Laos, with growth rates of 10.61%, 10.53% and 8.66% respectively; the fastest-growing import countries are Vietnam, Cambodia and the Philippines, with growth rates of 10.59%, 9.91% and 7.99% respectively. Import and export data for the Southeast Asian region clearly reveal its deepening linkages with the world economy and trade, not only in terms of its significant achievements in economic growth, but also in terms of its increasingly important role in the international trade landscape. This trend signals that the Southeast Asian region will continue to deepen its cooperation and interaction with the global

economy in the future, contributing positively to the sustainable development of the regional and global economy.

### 1.1.2 Industrial Transfer under Industry Chain Restructuring

In recent years, under the influence of the weakening demographic dividend, rising labor costs, industrial upgrading and other factors in some other countries, enterprises in many countries have begun to gradually shift their production capacity to Southeast Asia where costs are lower. Among them, Singapore, Malaysia, Indonesia, the Philippines and Vietnam have gradually become the main inflow locations for foreign capital in Southeast Asia by virtue of their location advantages and relatively sound industrial base. They have largely synergistically led to the overall improvement of the level of industrial and economic development in the region.

Geographically, Southeast Asia has an outstanding geographical advantage, with many major coastal cities having their own international ports and trade centers such as Singapore and Kuala Lumpur in Malaysia. Southeast Asia's sea freight lines are characterized by mature routes, large cargo capacity and low cost which is conducive to the cross-border transportation of industrial raw materials and intermediate goods from other countries as well as the export of finished products from Southeast Asia to the world.

In terms of policy support, most Southeast Asian countries have not introduced restrictive policies related to the chemical industry, and a number of countries have enacted tax reductions and exemptions. For example, Malaysia provides full tax exemption for 15 years for new investments in the manufacturing industry with an investment of more than 500 million ringgit; Vietnam has enacted a Law on Foreign Investment which grants four years of exemption from income tax and a 50% reduction in income tax for four years to projects in areas where investment is particularly encouraged.

From the perspective of demographic dividend, in recent years, Southeast Asian countries have seen a continuous growth in population which has laid a

solid foundation for the development of labor-intensive industries and is also conducive to the formation of a larger consumer market. The total population of the Southeast Asian region was 625 million in 2013 and 676 million in 2022, with a compound annual growth rate of 0.88%, of which six countries, namely, Indonesia, Malaysia, Vietnam, the Philippines, Laos, and Brunei, have achieved a sustained and steady population growth with a compound annual growth rate of more than 1% in the past 10 years.

In terms of industries taken on by countries, major brands include electronics, games and software, retail manufacturing and automotive. Driven by the continuous migration of many terminal manufacturers such as cell phones, automobiles, data centers etc., the electronics industry in Southeast Asian countries has ushered in a rapid development in recent years in which the proportion of electronic component production capacity in the world has already reached 20%, and certain industrial agglomeration effects have been formed in specific areas such as manufacturing, package, MLCC, PCB and parts assembly.

### 1.2 Central Asia: Reversal of Trade Deficit to Surplus

Central Asia, in the narrower sense of the term, is generally referred to as the "five Central Asian States", which are uniquely situated in the heart of Asia. These countries have a long history, a rich cultural heritage and diverse ethnic and religious backgrounds. The Central Asian region specifically includes five countries: Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan and Kyrgyzstan. Over the past decade, the Central Asian region has gone through a period of transformation and change in its economic development and has also achieved considerable success. At the same time, Central Asia, as the first place to build the "One Belt, One Road", has become an important hub linking the Asian and European markets by land and a golden corridor for opening up to the west.

#### 1.2.1 Strong Growth since the Epidemic

Over the past decade, the Central Asian region has shown steady economic growth with a compound GDP growth rate of 4.1% over the past decade in Central Asia. Overall, it was lower than the average growth rate of 5.7% in developing Asia and higher than the global

average growth rate of 3.1%. Since the COVID-19, Central Asia has experienced strong economic growth with GDP growth rates already higher than those of developing Asia and the global average. Over the past decade, the top two countries in Central Asia in terms of average GDP growth rate have been Tajikistan and Uzbekistan, with 7.1% and 5.9%, respectively. At the end of 2022, Central Asia's GDP was \$405.72 billion, or 0.4% of global GDP. The top 2 countries in Central Asia in terms of GDP are Kazakhstan and Uzbekistan, accounting for 55.7% and 19.8% of the total GDP in Central Asia. At the end of 2022, Central Asia's GDP per capita will be \$5,208.94, which is overall lower than developing Asia's per capita of \$14,328.73 and the global per capita of \$12,527.30.

Over the past decade, Central Asia's exports and imports have realized a shift from a current account deficit to a surplus. In 2022, Central Asia's exports and imports grow significantly, by 8.95% and 13.29%, respectively, much higher than developing Asia's exports and imports, which grow by 1.91% and 1.05%, and the global average exports and imports, which grow by 4.79% and 5.45%. In terms of country breakdown, this is mainly reflected in a significant improvement in the trade deficit between Kazakhstan and Uzbekistan.

### 1.2.2 Overdependence on the Primary Industry

Over the decade, although Central Asia's primary industry value added as a percentage of GDP declines slightly from 2012 to 2021, from 16.35% in 2012 to 15.24% in 2021, it is still much higher than the East Asian and Pacific regions (excluding high-income countries), which is at 7.95%, and the global average, which is at 4.30%. The secondary industry value added as a percentage of GDP remains stable from 2012 to 2021, with the Central Asia region's secondary industry value added as a percentage of GDP at 33.60% in 2021, slightly lower than the 39.04% in East Asia and the Pacific (excluding high-income) and higher than the global average of 27.59%. The tertiary industry's value added as a percentage of GDP rose slightly from 42.05% in 2012 to 43.93% in 2021, but it is still significantly lower than the 52.57% in East Asia and the Pacific (excluding high-income) and the global average of 64.42%. It can be seen that the overall economic

strength of the Central Asian region is relatively weak compared to the East Asia and Pacific region (excluding high-income countries) and the global average, mainly reflected in the over-representation of the primary industry. Further, the tertiary industry's contribution to the GDP is obviously insufficient. Thus, industrial transformation and upgrading has good prospects to create much growth.

### 1.3 South Asia: Leading the World in Economic Growth

The South Asian subcontinent is the world's most populous and densely populated geographic area comprising seven countries and containing more than one fifth of the world's population. However, since India has not yet signed a Belt and Road cooperation agreement, the data in this section include only six countries: Pakistan, Bangladesh, Sri Lanka, Nepal, Bhutan and Maldives, unless otherwise stated. "The countries of Belt and Road South Asia contain more than 5% of the world's population but account for only 1% of the world's GDP, making them one of the poorest regions in the world after sub-Saharan Africa.

#### 1.3.1 Growing Economic Status

Over the past decade, the six-country region of South Asia has shown economic growth and has been improving its economic level. Total GDP increased from \$485.43 billion in 2013 to \$960.69 billion in 2022<sup>2</sup>, increasing from 0.6% of total global GDP in 2013 to 1.0% in 2022. South Asia has grown at a CAGR of 7.9% over the past decade, significantly higher than the world's CAGR of 3.0% and developing Asia's CAGR of 5.7%. In terms of GDP per capita, the South Asian region's GDP per capita increased from \$1,364.4 in 2013 to \$2,272.5 in 2022<sup>3</sup>, due to factors such as a large population base and a low level of economic development. The average annual compound growth rate of 5.8% is significantly higher than the world's GDP per capita growth rate of 1.9% which demonstrates a strong potential for development. At the same time, due to political unrest and backward education, the unemployment rate in South Asia has been at a high level for a long time. The unemployment rate was 7.2%

2 Bhutan has not yet released GDP data for 2022, using 2021 data as a proxy.

3 The World Bank disclosed that the statistical caliber includes India.

in 2022 which is higher than the world unemployment level of 5.8%.

Overall, the South Asian economy has gradually increased its share of the world economy, and its contribution to and influence on the world's economic development has gradually increased; whether in terms of GDP growth rate, per capita GDP growth rate, compound GDP growth rate, or compound per capita GDP growth rate, the South Asian economies have demonstrated a strong potential for development as an emerging economy. However, due to historical factors such as the long history of colonial aggression, as well as internal ethnic, racial and religious strife, coupled with high population density and a large population base, per capita GDP lags significantly behind the world average reflecting the fact that the standard of living of the people of the South Asian region is still relatively low, and the unemployment rate also remains high.

### 1.3.2 Continuous Upgrading of Industrial Structure

South Asia is a large agricultural region, accounting for a relatively large share of the world's primary industry value added, but the proportion of the primary industry has been declining year by year since 2018, with a gradual shift to the secondary and tertiary industries. Further, the degree of industrialization is relatively low, lagging behind the world, but South Asia maintains a sustained catching-up trend which is especially relevant since the proportion of the secondary industry in the world is also increasingly high. Further, the status of the service industry has risen significantly, but there is still much room for growth.

In terms of the primary industry, over the past decade, the value added of the primary industry in South Asia has increased from \$414.30 billion in 2013 to \$718.91 billion in 2022<sup>4</sup>, with a CAGR of 6.3% which is higher than the global primary industry value added CAGR of 3.4%. In terms of the secondary industry, the

value added of the secondary industry in the South Asian region increased from \$132.52 billion in 2013 to \$248.82 billion in 2022, with a CAGR of 7.2%, which is significantly higher than the global secondary industry value added CAGR of 3.0%. In terms of the tertiary industry, the value added of the tertiary industry in the South Asia region increased from \$261.70 billion in 2013 to \$560.59 billion in 2021, at a CAGR of 8.8%, which is significantly higher than the global tertiary industry value added CAGR of 2.9%.

### 1.4 Africa: Increased Value Added by Industry

Africa is located in the southwestern part of the Eastern Hemisphere, with a total of 54 countries and regions, accounting for about 20.2% of the world's total land area which makes it the second largest continent in the world. Due to their geographical location, climatic characteristics, historical reasons, etc., African countries have long been at a backward level. Out of a total of 54 countries and regions in Africa, 52 countries, with the exception of Mauritius and Swaziland, have signed memorandums of understanding on Belt and Road cooperation with China. Over the past decade, the construction of the Belt and Road in China and Africa has contributed to the transformation and change of Africa's economic development, but Africa's economy is still developing slowly and faces certain challenges in terms of import and export trade and debt.

#### 1.4.1 The Tertiary Industry is on the Rise

In terms of total regional GDP, the 51 countries in Africa that have signed the Belt and Road Memorandum (no data available for Sudan) have experienced a CAGR of 1.96% over the past decade, which is the same as the sub-Saharan region's growth rate of 1.96%, and much lower than the global average growth rate of 3.05%, with the entire region growing more slowly over the past decade. Growth has occurred at a slower pace over the past decade. At the same time, the overall economic development imbalance within the African region is very serious: in 2022, the total GDP of the top five countries in the African region, Nigeria, Egypt, South Africa, Algeria, and Morocco, amounted to \$1,691.78 billion, accounting for 34.26% of the total in the African region; and the total GDP of the bottom five countries--Gambia,

4 Since the World Bank has not yet published data on the secondary and tertiary industries of South Asian countries for 2022, the data for analyzing the tertiary industry structure is based on the total of all countries in the South Asian region, including India's caliber; Bhutan and Maldives have not yet published data on the structure of the primary industry for 2022, and 2021 data were used as a substitute.



Seychelles, Guinea-Bissau, Comoros, Gambia, Sao Tome and Principe have a total GDP of only \$7.55 billion, accounting for only 0.15% of the total GDP for the African region.

In terms of exports, the ratio of goods and services exports to GDP in the African region has risen from 30.48% in 2013 to 31.30% in 2022, with a compound annual growth rate of 11.50% over the past three years. This suggests that the African region's exports of goods and services have recovered at a strong pace since the epidemic. Meanwhile, in terms of the structure of exports of goods and services, the share of transportation and tourism as a tertiary industry have both increased, with the share of transportation exports in total exports of goods and services in the African region standing at 26.22% in 2022. This represents an increase of 9.13% year-on-year. The share of transportation exports in total exports of goods and services stands at 44.37% for 2022, an increase of 16.58% year-on-year. It shows that high value-added tertiary industries are rapidly emerging in Africa, and with the further development and popularization of Internet technology, the region is expected to gradually break away from its dependence on primary product exports.

#### 1.4.2 Debt Problems of Selected Countries Highlighted

Over the past decade, the debt burden of the African region has increased with the need for development and construction and frequent trade. Over the past ten years the average government debt to GDP ratio of 49 countries in Africa that have signed the Belt and Road memorandum (no data for Sudan, Somalia and Libya) amounted to 63.38%. This is higher than that of 56.30% in sub-Saharan Africa and lower than that of 73.74% in Asian developing countries. Over the past decade, the compound growth rate of the average government debt to GDP ratio has reached 5.89%, much higher than the sub-Saharan region's 1.96%, approaching developing Asia's 6.46%. Among them, Eritrea, Cape Verde, and Mozambique, with total debt-to-GDP ratios exceeding 100 percent, are facing serious debt problems, while the Democratic Republic of the Congo (DRC) and Sierra Leone are also approaching 100 percent of GDP, with a compounded growth rate of more than 10 percent over the past

decade.

#### 1.5 Latin America: Commodity-Driven Economies

Latin America refers to the region of the Americas south of the United States, including Central America, the West Indies and South America. There are a total of 33 countries in Latin America and a number of non-independent regions, and the Latin American region analyzed in this report includes only those countries in Latin America that have signed cooperation documents for the construction of the Belt and Road, a total of 21 countries, including Chile, Guyana, Bolivia, Uruguay, Venezuela, Suriname, Ecuador, Peru, Argentina and Costa Rica, Chile, Guyana, Bolivia, Uruguay, Venezuela, Suriname, Ecuador, Peru, Argentina, Costa Rica, Panama, El Salvador, Dominica, Trinidad and Tobago, Antigua and Barbuda, Dominica, Grenada, Barbados, Cuba, Jamaica and Nicaragua.

##### 1.5.1 Slow and Uneven Economic Growth

Over the past decade, Latin America's compound annual GDP growth rate has been only 0.46%, much lower than the 1.04% for Latin America and the Caribbean as a whole, the 5.68% for developing Asia and the global average of 3.05%. Further, Latin America's share of global GDP has slipped from 2.32% in 2013 to 1.87% in 2022, resulting in slow growth for the economy as a whole. In 2022, the GDP of Latin America (no data for Cuba) was \$1,870.72 billion, of which the top 3 countries in terms of GDP were Argentina, Chile and Peru, accounting for 33.80%, 16.08% and 12.96%, respectively, of the total GDP of the Latin American region. In 2022, there is a wide disparity in the distribution of GDP per capita in Latin America, with Guyana, the country with the highest GDP per capita, amounting to \$18,989.8, while Nicaragua, the country with the lowest GDP per capita, is only \$2,255.4.

Commodity prices such as crude oil, ores, and agricultural products have continued to rise in recent years due to COVID-19 and the Russian-Ukrainian conflict, and rising commodity prices have benefited net exporters of oil and agricultural products such as Chile, Peru, and Colombia. However, it should be noted that this round of global commodity price increases is different from the beginning of this century. This round

of global commodity price increases is mainly due supply shortages due to COVID-19 and the Russia-Ukraine geopolitical conflict. Without strong economic growth as a basis, high commodity prices are not sustainable. Further, it is difficult to support sustained economic growth in Latin American countries. When the economic “rebound effect” of the post-pandemic period runs out and when monetary policy tightens it will likely lead to lower levels of consumption and investment. This may put pressure on the economies of Latin America.

### 1.5.2 Multiple Constraints on Policy Space

Affected by the impact of the COVID-19, the Ukraine crisis, the Fed's successive interest rate hikes, climate change and supply-side structural problems and other aspects, many countries in Latin America are currently facing the double pressure of inflation and debt. This has significantly narrowed the space for Latin America's fiscal and monetary policies.

In terms of inflation, the overall inflation rate in Latin America and the Caribbean reached 15.4% in 2022, up 3 percentage points year-on-year, with Argentina, the third-largest economy in Latin America, seeing inflation reach its highest level in three decades at 94.8%, while Colombia and Chile saw inflation rates of about 13% and Mexico saw inflation of 7.8%, all reaching the highest levels in more than two decades. The combination of imported factors, such as Fed interest rate hikes, and endogenous factors, such as epidemic incentivized policies, has led to rising inflation in the major Latin American economies.

In terms of debt, the total debt of the Latin American region participating in the Belt and Road cooperation and its ratio to GDP have been rising in the past decade, with its total debt increasing from \$743.36 billion in 2013 to \$1,249.99 billion in 2022, and the debt to GDP ratio increasing from 41.51% in 2013 to 66.80% in 2022. It is worth noting that the total debt-to-GDP ratio of 66.80% for Latin America participating in the Belt and Road cooperation in 2022 is much higher than that of 46.82% for Latin America and the Caribbean. Both internally and externally, Latin America's economy is in a state of being “unable to make ends meet”. For example, the region's fiscal

revenues have been lower than fiscal expenditures for the past ten years, with a ten-year average fiscal deficit of 3.67%. Further, the region's net loans/borrowings to GDP ratio in 2022 will be -2.55%, with overall external borrowing greater than external loans, and the external debt ratio continuing to rise. The overall external borrowing is larger than external lending, and the external debt ratio continues to rise.

### 1.6 Western Asia: Energy Industry-Led Economy

Among the countries along the Belt and Road, those in the Western Asia region include Iran, Iraq, Azerbaijan, Georgia, Armenia, Turkey, Syria, Jordan, Israel, Palestine, Saudi Arabia, Bahrain, Qatar, Yemen, Oman, the United Arab Emirates, Kuwait, Lebanon, Cyprus and 20 other countries, Afghanistan and 20 other countries. The region is located in the western part of Asia, from Afghanistan to Turkey, and is a hub linking the three continents of Asia, Europe and Africa, as well as the Atlantic and Indian Oceans. Since the Belt and Road Initiative was put forward in 2013, the China-Central Asia-Western Asia Economic Corridor has become a strategic pillar of the Belt and Road Initiative.

#### 1.6.1 Energy Industry as a Dominant Industry

Over the past decade, the total GDP of the 20 countries in Western Asia has increased from \$3.94 trillion in 2013 to \$4.57 trillion in 2022<sup>5</sup>, with a compound annual growth rate of 1.7%, significantly lower than the world's compound annual growth rate of 3.0%. This level of GDP represents a decline in its share of total global GDP from 5.1% in 2013 to 4.5% in 2022. The Western Asia region as a whole has seen a relative decline in its economic position. At the end of 2022, the total GDP of the 20 Western Asian countries as a share of total global GDP is 4.5%. The top two countries in terms of total GDP are Saudi Arabia and Turkey, which together account for 44.2% of Western Asia's total GDP. It is worth noting that Turkey's CAGR in GDP over the 2013-2022 period was low at -0.6%. In terms of GDP per capita, at the end of 2022, only 8 of the 20 countries in Western Asia will have a GDP per

<sup>5</sup> Syria has not yet published GDP data for 2021-2022 and uses 2020 data as a proxy; and Lebanon and Afghanistan have not yet published GDP data for 2022 and use 2021 data as a proxy.

capita higher than the global GDP per capita level of \$12,702.9<sup>6</sup>.

The Western Asia region has a typical resource-based industrial structure with the extraction and processing of hydrocarbons and minerals as the backbone industry, a single industrial structure, a high degree of similarity in trade structure, and vulnerability in the impact of commodity price cycles. The value added of the primary industry in the Western Asia region at the end of 2022 was \$178.0 billion<sup>7</sup>, accounting for only 4.1% of the world's primary industry value added and 3.9% of the total GDP of the 20 Western Asian countries. In 2022, the value added of the secondary industry in Western Asia will be \$1.85 trillion, accounting for 6.6% of the world's value added in the secondary industry. Further, the proportion of the value added in the secondary industry in Western Asia to GDP will be 40.7%, which is significantly higher than the global level of 28.0% during the same period. Finally, the proportion of the value added of the secondary industry in Western Asia to GDP in the 20 Western Asian countries declined from 45.0% to 40.5% during the period from 2013 to 2022. At the same time, the proportion of value added of tertiary industry shows an overall increasing trend, which shows that the focus of development in Western Asia is gradually transforming to service industries such as tourism, water conservancy and transportation.

### 1.6.2 Import and Export Show Two-Way Contraction

In terms of total trade, the total import and export trade of the 20 countries of Western Asia increased

from \$3.10 trillion to \$3.29 trillion in 2013-2022<sup>8</sup>. The compound annual growth rate was 0.6% which is significantly lower than the global level of 3.2%. The proportion of Western Asia's total import and export trade in the global import and export trade will decrease from 6.7% in 2013 to 5.3% in 2022 as a result of the combined effect of the shrinkage of exports and imports, which is mainly attributed to the fact that Western Asia, as the border area of the "Five Seas and Three Continents", has long been under a state of war, the intensification of ethnic conflicts and political instability. The four countries with the highest total import and export trade among the 20 countries in Western Asia in 2022 are Turkey, Saudi Arabia, the United Arab Emirates, and Israel, which together account for 70.7% of the total trade in Western Asia, except for Israel, which is mainly due to the natural endowment of oil and gas resources in Western Asia as well as the construction of the "the Belt and Road Initiative".

## 2. Economic Outlook Under the Belt and Road Initiative

Chinese President Xi Jinping pointed out that building the Belt and Road together is not only economic cooperation, but also an important way to improve the global development model, improve global governance and promote the healthy development of economic globalization. The Belt and Road offers significant opportunities for economic growth, job creation and sustainable development in Asia, Latin America, Europe and Africa, with greater potential to promote regional integration, strengthen international relations and foster shared prosperity in participating countries. In the future, the countries along the "the Belt and Road" should, according to their resource endowments, geographical advantages, labor costs, and differences in industrial development, make a precise layout and promote the transformation and upgrading of economic and trade cooperation from traditional industries such as processing and manufacturing, resource utilization, agriculture and forestry development to more service-oriented

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6 The same statistical methodology above, with 2021-2022 GDP per capita data for Syria used as a proxy for 2020, and 2021 data used as a proxy for Lebanon and Afghanistan, which have not yet published 2022 per capita data.

7 Palestine has not published data on the value added of the secondary and tertiary industries, and the analysis of the industrial structure of the 20 countries in West Asia is based on the caliber of excluding the country; Israel, the United Arab Emirates, Lebanon, and Afghanistan have not yet published data on the structure of the three industries in 2022, and use the data of 2021 as a substitute; Syria and Kuwait have not yet published data on the structure of the three industries in 2021 and 2022, and use the data of 2020 Syria and Kuwait have not yet published data on the structure of the three industries for 2021 and 2022, and use 2020 data as a substitute; Yemen has not yet published data on the structure of the three industries for 2019-2022, and use 2018 data as a substitute.

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8 Total import and export trade = exports + imports; same statistical methodology as above.

industries such as science and technology research and development oriented parks such as trade logistics parks and high-tech parks. On the basis of continuing to promote foreign direct investment, overseas project contracting cooperation, overseas labor cooperation, and import and export trade combined with the actual situation, they will continuously innovate. We also innovate through the establishment of overseas economic and trade cooperation zones, exploration of third-party markets, digital economy cooperation, investment and livelihood development cooperation, and other innovative forms of cooperation. They will continue to strengthen cooperation in digital economy fields such as artificial intelligence, quantum computers, big data, cloud computing and smart cities, and pay more attention to the inclusiveness, effectiveness and sustainability of development cooperation. They also seek to promote stronger, greener and healthy global development.

### ***2.1 South-East Asia: A Global Leader in the Digital Economy***

As mentioned earlier, a large population base, a vibrant job market and a high degree of market openness are important reasons for the rapid economic development of Southeast Asia. Further, the digital transformation of the economy is becoming another important engine of economic growth in the region. Internet giant Google Inc, Temasek Holdings and consulting firm Bain jointly released the “e-economy SEA 2022—Through the waves, towards a sea of opportunity” in October 2022, which said that Internet users in Southeast Asia have grown rapidly in recent years, from around 360 million in 2019 to around 460 million, with a compound annual growth rate of 8.5%, far exceeding the growth rate of the total population in the Southeast Asian region. At the end of 2022, the proportion of digital consumers in the Southeast Asian market to the local population was about 82%, much higher than the proportion of digital consumers in 2019 of 63% which is expected to rise to 88% in 2027. Against the backdrop of the global macro-economic downtrend, Southeast Asia’s digital economy is developing bucking the trend, Southeast Asia’s digital economy Gross Merchandise Volume (GMV) is expected to reach \$194 billion in 2022, and Southeast

Asia’s digital economy GMV is expected to grow at a CAGR of approximately 24% from 2019-2022, and is expected to maintain a CAGR of around 20% over the next three years, and is expected to reach \$330 billion in 2025, which is three years ahead of the 2016 report expectations of Temasek, Bain, and Google.

In 2017, the Belt and Road officially put forward the requirements for the construction of the Digital Silk Road, which further accelerated international cooperation on the digital economy among Southeast Asian countries. In December 2017, China, Laos, Thailand and seven other countries jointly launched the Belt and Road Digital Economy International Cooperation Initiative, which is committed to realizing the “Digital Silk Road” of interconnectivity, creating a “community of interests” and “community of destiny” of mutual benefit and win-win situation. The year 2020 is known as the “Year of Digital Economy Cooperation between China and ASEAN”, and China has carried out a series of activities on the application of Beidou for Indonesia and Laos, and assisted Thailand in building a 5G smart demonstration. China has also assisted Thailand in building 5G intelligent demonstration factories, and constructed overseas cloud computing centers in Laos, Cambodia, Myanmar and other countries. A series of initiatives have continuously strengthened the development and construction of Southeast Asian countries in the fields of e-commerce, science and technology innovation, 5G networks, smart cities and other digital economy areas, so that the digital economy of Southeast Asia has been upgraded and stepped up to a higher level in deepening pragmatic cooperation.

As one of the subregions with the greatest potential for global economic growth in 2022, Southeast Asia leaves us with a very broad imagination in the area of digital economic development, whether it is in the field of e-commerce, travel, takeaways, transportation or the online media industry, with unlimited potential for future paths of economic digitization. Southeast Asia is expected to become a global leader in the digital economy in the future if it can further expand its audience and promote sustainable economic growth through ESG factors and Belt and Road cooperation.

### 2.1.1. Vietnam: A Future Digital Economy Frontrunner

In 2022 Vietnam surpassed Singapore and the Philippines to become the fourth largest economy in Southeast Asia. In spite of the economic growth of Vietnam being somewhat hampered by the COVID-19, the demand for digital transformation spawned by the COVID-19 has become a new booster for Vietnam's GDP growth: the Digital Economy in Southeast Asia Report 2022 shows that the size of Vietnam's digital economy has grown from \$13 billion to \$23 billion from 2019-2022, and it is expected to reach \$49 billion in 2025. It is expected to have a CAGR in 2022-2025 reaching 31%, which will make it the fastest growing digital economy in Southeast Asia.

At present, the development of Vietnam's digital economy focuses on e-commerce, network communications and cybersecurity, and has achieved remarkable development results. In terms of e-commerce, Vietnam's e-commerce scale of about \$14 billion in 2022 has become the third largest e-commerce market in Southeast Asia after Indonesia and Thailand, while data from the Vietnam e-commerce white paper in 2022 shows that the number of consumers shopping online has grown rapidly from 33.6 million in 2017 to 49.3 million in 2020 and 54.6 million in 2021, and it is expected to reach 57-60 million people. In cyber communications, according to Vietnam's Ministry of Information and Media, the information and communications technology (ICT) industry is witnessing rapid growth against the backdrop of COVID-19 with total revenue reaching \$148 billion in 2022, an increase of 8.7 percent from 2021 and contributing about 7.18 percent to GDP. Further, in cybersecurity, according to Russian information technology security firm Kaspersky, the number of online attacks in Vietnam in 2019 dropped by 30% compared to 2018 and is the second lowest number of malicious mobile software in Southeast Asia after Singapore. According to the 4th edition of the Global Cybersecurity Index (GCI 2020) survey released by the International Telecommunication Union (ITU) in June 2021, Vietnam's cybersecurity index rose to 25th place among 194 countries (region), ranking 7th in the Asia-Pacific region and 4th in Southeast Asia.

All in all, Vietnam is a country with a population of nearly 100 million, a huge economy, a complete digital top-level design and overall planning. Further, a growing awareness of digital transformation exists, thus Vietnam has great prospects for the development of the digital economy, and is expected to become a leader of the digital economy in Asia and the world in the future given the frequent mention of digital transformation and upgrading in the Belt and Road Initiative and the opportunity to advocate for digital development cooperation. With the Belt and Road initiative frequently mentioning digital transformation and upgrading and advocating cooperation in digital development, Vietnam is expected to become a leader of digital economy in Asia and the world.

### 2.1.2 Indonesia: Full Potential for Digital Economy Momentum

Indonesia, as the fourth most populous country in the world, is not only the largest economy in Southeast Asia, but it also ranks first in Southeast Asia in terms of the size of its digital economy and the scale of e-commerce. According to the "e-economy SEA 2022 - Through the waves, towards a sea of opportunity" the size of Indonesia's digital economy is expected to be \$77 billion in 2022, and it is expected to double to \$130 billion in 2025. Helped by the the pandemic, Indonesia's e-commerce industry has seen explosive growth, with Indonesia's e-commerce scale growing from US\$25 billion to approximately US\$59 billion from 2019 to 2022 with a CAGR of 33%. This growth is faster than other digital economy sub-sectors such as transportation, takeaway, travel, online media, etc., and it is expected to increase to US\$95 billion in 2025. In addition, according to data released by Statistical Office of Indonesia, 47.75% of businesses in Indonesia utilized information technology for online marketing after the outbreak of the pandemic, compared to 5.76% before the outbreak.

However, Indonesia, as an emerging economy and a large developing country, faces typical problems such as a long economic transformation cycle and unbalanced economic development due to factors such as a weak economic base, different starting points for development, a large number of islands,

and significant geographic differences, which will lead to uneven infrastructure development and the degree of digital transformation. Therefore, before the government carries out digital transformation, it should first improve the infrastructure software and hardware construction of enterprises and regions with a weak digital foundation through policy guidance and financial support, strive to narrow the relative gaps in the development of enterprises and regions, and strive for progress in a stable and balanced manner, so as to enter a new digital ecology of decentralization and mobile interconnection, and to achieve leapfrog development in digitalization.

### 2.1.3 “Digital Economy Partnership Agreement” (“DEPA”)

The “Digital Economy Partnership Agreement” (“DEPA”) is the world's first major rules-based arrangement on the digital economy, a free trade agreement signed in June 2020 by three countries - Singapore, New Zealand and Chile - to promote trade liberalization and digital cooperation in the digital economy. With the facilitation of e-commerce, liberalization of data transfer and the securitization of personal information as its main elements, the agreement covers 16 modules, including business and trade facilitation, data issues, emerging trends and technologies, innovation and the digital economy, small and medium enterprises cooperation, and digital inclusion, and it proposes a relatively comprehensive rules arrangement for international digital economy activities and exchanges.

**Table 1: Modules and specific articles of DEPA**

Num.	Modules	Articles
1	INITIAL PROVISIONS AND GENERAL DEFINITIONS	Scope, Relation to Other Agreements, General Definitions
2	BUSINESS AND TRADE FACILITATION	Definitions, Paperless Trading, Domestic Electronic Transactions Framework, Logistics, Electronic Invoicing, Express Shipments, Electronic Payments
3	TREATMENT OF DIGITAL PRODUCTS AND RELATED ISSUES	Definitions, Customs Duties, Non-Discriminatory Treatment of Digital Products, Information and Communication Technology Products that Use Cryptography
4	DATA ISSUES	Definitions, Personal Information Protection, Cross-Border Transfer of Information by Electronic Means, Location of Computing Facilities
5	WIDER TRUST ENVIRONMENT	Cybersecurity Cooperation, Online Safety and Security
6	BUSINESS AND CONSUMER TRUST	Definitions, Unsolicited Commercial Electronic Messages, Online Consumer Protection, Principles on Access to and Use of the Internet
7	DIGITAL IDENTITIES	Digital Identities
8	EMERGING TRENDS AND TECHNOLOGIES	Financial Technology Cooperation, Artificial Intelligence, Government Procurement, Cooperation on Competition Policy
9	INNOVATION AND THE DIGITAL ECONOMY	Definitions, Objectives, Public Domain, Data Innovation, Open Government Data
10	SMALL AND MEDIUM ENTERPRISES COOPERATION	General Principles, Cooperation to Enhance Trade and Investment Opportunities for SMEs in the Digital Economy, Information Sharing, Digital SME Dialogue
11	DIGITAL INCLUSION	Digital Inclusion
12	JOINT COMMITTEE AND CONTACT POINTS	Establishment of the Joint Committee, Functions of the Joint Committee, Decision-Making, Rules of Procedure of the Joint Committee, Cooperation and Implementation of this Agreement, Contact Points
13	TRANSPARENCY	Definitions, Publication, Administrative Proceedings, Review and Appeal, Notification and Provision of Information
14	DISPUTE SETTLEMENT	Definitions, Objective, Scope, Good Offices and Conciliation, Mediation, Arbitration, Choice of Forum, etc.
15	EXCEPTIONS	General Exceptions, Security Exceptions, Treaty of Waitangi, Prudential Exception and Monetary and Exchange Rate Policy Exception, Taxation Exception
16	FINAL PROVISIONS	Depository, Entry into Force, Amendments, Accession, Withdrawal, Disclosure of Information, Confidentiality, Annexes and Footnotes, Electronic Signature

Source: “DEPA”

**DEPA is advanced in four main ways.** It is comprehensive, open and inclusive, flexible, and forward-looking. **First, DEPA is comprehensive.** Among all the digital trade rules in Regional Trade Agreements (RTAs), the DEPA agreement has the largest number of articles and words in the text, and it covers a wide range of issues including digital trade facilitation, data security and protection, digital trust environment, digital technological innovation, digital identity authentication, data sharing, and other refined digital economy rules and arrangements, and the scope of coverage has expanded from digital trade to the entire digital economy. These contents are highly compatible with the direction of economic development of many countries, including China, and they are in line with the basic interests of most countries. Further, they have greatly promoted the systematization of global digital economy legislation. Therefore, comprehensive and detailed digital economy rules are an effective guideline for promoting countries to carry out digital trade negotiations and cooperation, as well as an important foundation for promoting the rapid development of the global digital economy, and they are an important manifestation of the advanced nature of the institutional arrangements for the digital economy.

**Secondly, DEPA is open and inclusive.** DEPA is an open agreement that is open to all World Trade Organization (WTO) members that can meet its standards and allows for the setting of general exceptions and security exceptions similar to those in the WTO agreement. At the same time, DEPA encourages member states to build a trust mechanism for the digital system and to establish a trustworthy digital sharing environment which lowers barriers to digital trade and promotes digital trade liberalization and the circulation of digital products. DEPA also provides a reasonable mechanism for dispute settlement for certain digital economy situations that may violate the regulations. In addition, DEPA encourages the involved countries to promote cooperation in the fields of open government data, artificial intelligence (AI), and other emerging technologies on the basis of fair competition in the digital economy. This occurs through sharing best practices, promoting joint programs for digital participation, and empowering small and medium

enterprises to participate in trade and investment in the digital economy to improve and bridge the digital divide and ensure opportunities and conditions for individuals and businesses to benefit from the fruits of digital economy development. Therefore, DEPA has pioneered a global digital economy governance model of equality and mutual benefit, win-win cooperation, and opposition to digital hegemony, with openness and inclusiveness. The openness and inclusiveness is likewise an important manifestation of DEPA's advanced nature.

**Thirdly, DEPA is flexible, and its flexible modular framework is one of its largest strengths as a regional digital economy agreement.** Further, DEPA represents a breakthrough on existing digital trade rules such as USMCA, CPTPP, UJDTA, etc., and it adopts a unique "modular arrangement." Participants do not need to agree to all the 16 modules covered by DEPA. Instead, participants can choose to join some of the modules of the agreement without having to join/fulfill all the modules. Further, participants can adjust rules according to the local situation when necessary. Under this soft cooperation arrangement, governments can choose some or all of the modules to join the agreement on an as-needed basis according to their own level of digital economy development and interests. This greatly enhances the flexibility and enthusiasm of new members' participation, and it is an important manifestation of DEPA's advanced nature.

**Fourthly, DEPA is forward-looking:** DEPA's characteristic open and modular rule framework is a bold innovation based on the original digital trade rules. It is a flat and distributed model of governmental collaboration which is highly appropriate in the era of digital economy, and it has distinctive foresight and leadership. In addition, DEPA expands the scope of governance from digital trade to a number of aspects of the digital economy which points out the current international trend of digital economic governance which is both indicative and predictive. Furthermore, in addition to containing mainstream digital governance concepts from the U.S., the EU, and other regions, DEPA also makes special requirements in promoting the free flow of cross-border data, non-discriminatory treatment of digital products, and non-compulsory

requirements for the location of computing facilities, as well as through the establishment of the regulatory framework of personal information protection, online consumer protection, the ethics of AI, and the protection of the right of enterprises to cross-border data flow. Further, DEPA builds a balance between protecting consumers' rights and interests and maintaining the competitiveness of enterprises. DEPA also provides forward-looking ideas for building a regional and global digital economy community with equal cooperation and mutual benefits.

## **2.2 Central Asia: Structural Transformation Drives Economic Growth**

A striking feature of Central Asia's economic performance over the past decade is the disproportionately high ratio of primary sector value added to GDP, which is much higher than the global average. Using 2021 data, for example, the ratio of primary sector value added to GDP in Central Asia averaged 10.3% compared to 5.59% in East Asia and the Pacific (excluding high-income) and 4.3% on average globally over the same period. Among them, the ratio of primary sector value added to GDP in all countries in Central Asia is higher than the global average, especially in Uzbekistan and Tajikistan, where primary sector value added accounts for 24.84% and 23.27% of GDP, respectively. It can be foreseen that the Central Asian region has the potential for growth brought about by the transformation of industrial structure in the future. In the following section, we will explore Uzbekistan and Tajikistan, where the value added of primary industry accounts for a relatively high percentage of GDP. This provides an interesting example to analyze the growth potential of Central Asia due to the transformation of industrial structure and the important role the "Belt and Road Initiative" plays in it.

### **2.2.1. Uzbekistan: Great Potential for the Development of the Automobile Industry and Tourism**

From the standpoint of resource endowment, Uzbekistan has a strong potential for industrial development. According to the relevant data, the total value of Uzbekistan's mineral reserves is approximately \$3.5 trillion. Further, nearly 100 types of minerals have been identified in Uzbekistan. Uzbekistan ranks 11th in the world in the extraction of natural gas, 7th

in the extraction of gold, and 5th in the extraction of uranium. In the "New Uzbekistan Development Strategy for 2022-2026", published in January 2022, there is a clear reference to the need to increase the share of industry in GDP in the future and to increase the scale of production of industrial products by 40%. In the automotive industry, the General Motors plant in Uzbekistan is currently the largest joint venture project between Uzbekistan and the United States with a production capacity of about 237,000 cars in 2021. Meanwhile, under the impetus of the "Belt and Road Initiative", automotive brands such as BYD and EXEED have begun to set up joint venture factories in Uzbekistan, with a planned annual production capacity of 50,000 vehicles for BYD and 20,000 vehicles for EXEED in Phase I, respectively. It is foreseeable that more automobile enterprises will build factories in Uzbekistan or other countries in Central Asia through joint ventures in the future, and the automobile industry may become an important economic growth engine in Central Asia in the future as well as an important facilitator of the transformation of activity in Central Asia from agriculture into industry.

From the perspective of geographical endowment, Uzbekistan is located in the hinterland of Central Asia bordering on four other Central Asian countries and Afghanistan. Further, Uzbekistan has a long history and culture, has numerous cultural relics and monuments, is the key hub of the ancient Silk Road, is a meeting place of various cultures, and is one of the world's famous tourist destinations. In recent years, under the "Belt and Road Initiative", various cross-border educational cooperations have been carried out among universities to promote the development of the tourism industry. For example, on July 7, 2023, the "Tourism Cooperation and Humanistic Exchange Research Alliance of Countries Along the 'Belt and Road'" was established in Xi'an International Studies University in China. The alliance will be committed to deepening the educational cooperation with universities in Central Asia, exploring the effective path of humanistic exchange and tourism cooperation among the countries along the Road, and strengthening the exchange of talents training, transformation of scientific research results, and sharing of resources in countries



along the Road, to contribute to the high-quality development of tourism cooperation and humanistic exchanges.

### 2.2.2 Tajikistan: Huge Potential for Infrastructure and Power Development

Tajikistan is rich in water and mineral resources. Water resources in Tajikistan are abundant, accounting for about 60 percent of the total in Central Asia and ranking 8th in the world, but less than 10 percent of the actual amount is exploited. In terms of mineral resources, the world's second largest silver mine, namely the Great Kani Mansur silver mine; occupies the third place in Asia, after China and Thailand; lead and zinc ore reserves in Central Asia also occupy a dominant position. At present, "hydropower revives the country" is the basic state policy of Tajikistan. Relying on the rich hydropower resources, the Tajikistan government has made the intensive construction of hydroelectric power stations a priority area of national economic development, and strive to build Tajikistan into a regional power exporting country. It can be seen that industrial transformation and the development of transportation and hydropower will become the focus of its economic development.

In terms of infrastructure, Tajikistan lags behind in terms of infrastructure development, and the damage caused by several years of civil war has caused serious damage to the infrastructure which constrains the country's economic development. Currently, Tajikistan has four main highways, three railroad lines, and three major airports, but it lacks any metro system. Domestic transportation of goods and passengers mainly relies on the four main highways. The movement of goods and passengers in and out of the country relies mainly on railroads. In 2021, Tajikistan's freight traffic volume was 82,029,400 tons, a year-on-year increase of 2.7%. Passenger traffic volume was 737 million passenger trips in 2021, a year-on-year increase of 12.6%. 97.3% was road passenger traffic. It is foreseeable that there could be a strong growth potential for railroads, highways, shipping and other infrastructure in Central Asia in the future.

With regard to the construction of hydropower, Tajikistan covers an area of 143,100 square kilometers,

and there are 947 rivers which are more than 10 kilometers in length, totaling 28,000 kilometers long with a density of 0.6 kilometers/square kilometer of river network. There are nearly 30 large, medium, and small hydroelectric power stations with a total installed capacity of 5.09 million kilowatts in four major water systems, including the Zerafshon River in the north, the Kafirnigan River and Vakhsh River in the center, and the Pyandzh River in the south. Rogun Hydropower Station project is under construction and implementation. After completion of the Rogun Dam it will be the world's highest earth dam, and the annual power generation will reach 17 billion kilowatt hours. It is foreseeable that hydropower construction will become an important growth economic growth point for Tajikistan in the future.

Tajikistan was originally part of the Central Asian Power System (CAPS) before electricity cooperation with Uzbekistan was interrupted due to Uzbekistan's withdrawal from the CAPS. Tajikistan resumed exporting electricity to Uzbekistan on April 2, 2018 after a nine-year hiatus in the supply of electricity from Tajikistan and Uzbekistan. Tajikistan is pushing ahead with the CASA-1000 transmission project which will connect the power grids of Kyrgyzstan, Tajikistan, Afghanistan, and Pakistan and help Tajikistan export surplus hydropower to Afghanistan and Pakistan in the Summer. In 2021, Tajikistan's revenue from electricity exports exceeded \$95.96 million, an increase of 70% over the previous year. Exported electricity was mainly sold to Uzbekistan, Afghanistan, and Kyrgyzstan. The next 10 years will remain a golden period for the transformation of CAPS, and there is huge potential for growth in power construction across the region.

### 2.3 South Asia: May Become a New Growth Pole for International Trade

In recent years, the South Asian region has shown relatively strong development potential: the compound annual growth rate of GDP and per capita GDP of the seven countries in South Asia from 2013 to 2022 will reach 7.1% and 5.8% respectively. This is much higher than the world averages of 3.0% and 1.9%. The compound annual growth rate of total imports and exports of the South Asian region from 2013 to 2022 is 2.4%, higher than the global compound annual

growth rate of 2.3% of total imports and exports, and the proportion of total imports and exports of the South Asian region which reached 2.0% of the world's total in 2022. The total imports and exports of India, as the largest economy in the South Asian region, surged from USD 649.61 billion to USD 968.52 billion in 2022, with the year-on-year growth of up to 49.1%. At present, after the adjustment of economic policies and the gradual recovery of the national economy, the unemployment rates of South Asian countries have been reduced and, the employment problem has been effectively alleviated. This shows strong economic resilience. It is believed that under the impetus of the "Belt and Road Initiative" policy, through the removal of trade barriers and the formation of agglomeration effects, the South Asian region is expected to realize higher-quality and more efficient economic growth and become a new pole of international trade and international economic growth together with Southeast Asia in the future.

### 2.3.1 Breaking down Trade Barriers is a Key to Promoting Economic Development

Trade barriers prevalent in South Asian countries are an important factor shackling the economic development of the South Asian region. According to the Economic Outlook for South Asia released by the World Bank in 2018, the average tariffs in South Asia in 2016 were 13.6%, which is more than twice as high as the world's average level (6.3%). In addition to this, South Asian countries have a long-term "sensitive" product list which contains 39% of the total number of products. Liberalization policies can not only break down barriers to trade and investment between countries and significantly improve social welfare levels, but also allow countries with cost, technology, and access advantages to gain more opportunities, attracting the concentration of productive firms and factors of production, and reshaping a country's economic geography through agglomeration effects that bring about the benefits of aggregation. The Economic Outlook for South Asia released by the World Bank in 2018 says that deepening regional trade flows and connectivity can more than triple the size of regional trade in South Asia. Therefore, under the "Belt and Road Initiative", South Asian countries need

to break down international trade barriers and logistics bottlenecks, promote global trade liberalization, expand trade partners, strengthen the important foundation of international economic cooperation, and achieve trade and people-to-people connectivity which will be a major breakthrough for the future economic growth of South Asian countries.

The "China-Pakistan Economic Corridor" between China and Pakistan is an interesting example to consider. Pakistan's economy mainly relies on agriculture and textile industry, and its national income mainly stems from the export of agricultural products such as cotton, etc. In the cooperation of the "China-Pakistan Economic Corridor", the Pakistani government plans to set up 27 industrial parks along the China-Pakistan Economic Corridor, which will focus on different industries according to their own advantages, to promote the China-Pakistan cooperation in various fields of production capacity, and to invest through the construction of industrial parks. This plan, on the one hand, directly creates 236,000 jobs, and, on the other hand, enables specific industrial parks along the China-Pakistan Economic Corridor to produce centripetal force and form industrial agglomeration and urban clusters in the areas of exchanges and cooperation and knowledge management, etc.. This will result in exerting synergistic and agglomeration effects, increasing the rate of return in the manufacturing industry, hard science and technology and other fields, and raising the level of real national income. Data shows that the compound annual growth rates of Pakistan's GDP, GDP per capita and total external debt from 2013-2022 are 5.3%, 3.7% and 10.2% respectively. These are significantly higher than the global rates of 2.9%, 1.7%, and 6.3%. Given that only three of the nine Special Economic Zones (SEZs) planned to be constructed within the framework of the China-Pakistan Economic Corridor are ready to be launched, and investment promotion work is underway, there is still plenty of room for the economic growth of Pakistan in the future. As a result, industrial parks and free trade zones, which represent the smallest agglomeration unit of trade and investment, may become the mainstay of economic growth in South Asia in the future.

### 2.3.2 India: Huge Economic Potential and Demographic Dividend

India is the largest economy in the South Asian region, with the world's fifth largest GDP and the world's second largest total population. India's GDP grew from \$1.86 trillion to \$3.88 trillion over 2013-2022, at a CAGR of 6.9% which is well above the global average of 3.0%. India's GDP per capita increased from \$1,438.1 in 2013 to \$2,452 in 2022, at a CAGR of 6.1%, which is well above the world average of 3.0%. Its GDP per capita increased from \$1,438.1 in 2013 to \$2,452 in 2022, a CAGR of 6.1% which is much higher than the world average of 1.9%, but only 19.3% of the world's GDP per capita. In terms of import and export trade, the total import and export volume of USD 0.97 trillion in 2022 accounted for nearly 80% of the total import and export volume in South Asia and 1.56% of the global import and export volume. The Indian government mainly pursues an industrial protectionist policy, and it has adopted a series of restrictive measures against foreign enterprises, such as raising tariffs, restricting imports, and requiring localization. In terms of industrial structure, more than half of India's population is engaged in agriculture, so the proportion of primary industry reaches about 17% (2021). Although the Modi government attached great importance to the development of the local manufacturing industry after coming to power, the proportion of the secondary industry is still only about 26% (2021). India's service industry is dominated by the knowledge-intensive information technology industry and primarily serves developed countries via outsourcing, thus while the share of the tertiary sector is 57.8% (2022), the actual number of people employed in this sector is only 25% of India's total employment (India's credit rating agency Crisil noting, which is quoted by The Economic Times). In terms of employment, despite unemployment rate of only 7.3% in 2022, the unemployment rate of youth under 25 years old is as high as 45.8% (CMIE data), and the demographic dividend is becoming a huge challenge and problem for India. In addition, although India has formed certain industrial agglomerations, it still does not have industrial clusters with complete industrial chains and good collaboration, and its supply chain cost advantage is not obvious. Moreover, India

has not yet joined the "Belt and Road Initiative" in terms of foreign policy.

It can be seen that India, as the South Asian country with the largest economy, has strong development potential, but it still faces problems such as low living standards, industrial protectionism, irrational industrial structure, scarcity of jobs, and the reverse flow of the Cold War mentality, etc. Coupled with complex national conditions such as ethno-religious issues inherited from the colonial era in India, India's future economic development will inevitably be riddled with a variety of risks and challenges. India's future economic growth not only needs to increase the technical and institutional support for digital, high-tech industries, continue to create jobs, reverse the backward industrial structure, and achieve high-quality economic development, but it also needs to strengthen cooperation and exchanges with other countries and regions, learn from a wide range of experience and technologies, realize industrial digitization and digital industrialization, enhance the level of technological innovation in high-tech industries, and gradually achieve the efficient foundry and even the ability to independently research, develop, and manufacture semiconductor chips to accomplish the set development goals.

### 2.3.3 Bangladesh: A new Economic Growth Pole in South Asia Region

Bangladesh, which was one of the poorest countries in the world when it gained independence in the 1970s, and whose income depended mainly on the export of primary products such as jute and textiles, has become one of the fastest-growing economies in the world, with an economic growth of 271 times in just 50 years, which has turned the world's heads. In the last decade, Bangladesh's GDP has grown at a compound annual growth rate of 13.3%, making it the fastest-growing economy in South Asia over the past 10 years, much higher than the average growth rate of South Asia's GDP of 7.1% and the global GDP of 3.0%, and surpassing Pakistan in 2019 to become the second-largest economy in South Asia. Bangladesh's economic miracle is mainly due to its large population base (166 million in 2021) and steady growth rate (1.0%

in 2021), as well as the “Belt and Road” policy.

In recent years, under the support of the “Belt and Road” initiative, Bangladesh’s large-scale infrastructure projects have been landing intensively: the Dasher Gandhi Sewage Treatment Plant Project officially entered the operation and maintenance period in April 2022; the Padma Bridge Project was completed and reopened to traffic in June 2022; and the Dhaka Airport Elevated Expressway Project will be completed in September 2023; and the Dhaka Airport Elevated Expressway Project is expected to be completed in September 2023. The “Belt and Road” policy has noticeably accelerated Bangladesh’s transformation from an agriculture-driven economy to an export-oriented manufacturing economy. The compound annual growth rate of Bangladesh’s value added in secondary sector is 16.5% in 2013-2022 which is much higher than the 9.3% compound annual growth rate of the value added in primary sector. The share of value added of secondary industry rose from 26.3% in 2013 to 33.9% in 2022, while the share of value added of secondary industry declined from 15.5% in 2013 to 11.2% in 2022. The successful transformation and upgrading of industrial structure has led to the rapid growth of Bangladesh’s economy. In addition to this, the living standard of the people of Bangladesh has also improved significantly, with per capita GDP rising from US\$973.8 in 2013 to US\$2,688.3 in 2022, a compound annual growth rate of 11.9% which is also the fastest GDP per capita growth rate in South Asia over the past decade. This growth rate is , much higher than the compound annual growth rate of 5.8% of GDP per capita in South Asia and 1.9% of GDP per capita globally.

In addition to a large population base, high growth rate, and sustained infrastructure investment, the key to Bangladesh’s rapid economic growth has been its prudent fiscal and debt management policies. The government of Bangladesh has formulated prudent fiscal policy and debt management policy - the national budget deficit is controlled within 5% of GDP, the borrowing sources are mainly international financial institutions such as the World Bank and Asian Development Bank, public debt has been maintained

at less than 40% of GDP, and the external debt has been kept at less than 20% of GDP for nearly a decade. Despite this, during the period 2013-2021, the compound annual growth rate of Bangladesh’s total external debt has been as high as 13.8%, second only to the Maldives’ 17.9% in the South Asia region. Funds raised by this debt have strongly supported the country’s infrastructural investment and economic development and the mix of debt funding type has helped ensured risk control.

It can be seen that Bangladesh has significant advantages in terms of population endowment, infrastructural investment, market openness, policy openness, etc., which have vigorously promoted the upgrading of industrial structure, economic growth, and social progress. Therefore, in terms of GDP, GDP per capita, total imports and exports, total external debt, and many other indicators of economic development, Bangladesh deserves the title of “Leader” in the South Asian region, both in absolute terms and in terms of growth rate. In the future, as the economic benefits of infrastructure construction under the “Belt and Road Initiative” framework continue to increase, the economic development of the Bangladesh region is promising, and it is very likely to become a new economic growth pole in the South Asian region.

#### **2.4 Africa: Active Integration into Global Markets**

In recent years, Africa’s economic development as a whole has been slow. Based on relevant data, the per capita GDP of sub-Saharan African countries in 2021 was only 3,957 yuan, far lower than the global level of 18,669 yuan. Further, poverty and economic backwardness remain problems that African countries need to address urgently. The ability to fully grasp the demographic dividend and realize poverty alleviation has become a key constraint on Africa’s future economic development.

##### **2.4.1 A Significant Demographic Dividend**

From the perspective of population change, the African region’s population growth rate has declined significantly, but still shows a stable growth trend. It is still the world’s fastest-growing continent in terms of the number of people, and compared with some aging regions and areas with negative population growth, the

demographic dividend will continue. In 2022, Africa's total population reached 1.427 billion, accounting for 17.89% of the global population representing a year-on-year growth rate of 2.37% compared with 2021. This is 1.1 percentage points higher than the global year-on-year growth rate.

According to United Nations data, the population of sub-Saharan Africa will grow from 1.09 billion in 2020 to 2.17 billion in 2050 and 4 billion in 2100, and its share of the world's total population will rise from 14 percent in 2020 to 22.2 percent in 2050 and 35.8 percent in 2100. With slowly declining population growth rates and dependency ratios, sub-Saharan Africa will enter the "demographic window of opportunity" in the mid-21st century that will last beyond 2100, making it the last region in the world to have the window, and one of the regions with the largest working-age population in the window in the world, with a projected 1.78 to 2.57 billion people of working age. By 2050, many African countries will have doubled their populations, with Nigeria projected to leapfrog to become the fourth most populous country in the world, behind China, India, and the United States. By 2100, the world's three most populous cities are expected to be located in Africa - Lagos, Nigeria; Kinshasa, Democratic Republic of Congo; and Dar-es-Salaam, Tanzania.

#### 2.4.2 Seizing Opportunities for Industrial Transfer

The "demographic window of opportunity" will be an important opportunity for Africa's industrial development in the 21st century. With the continuous increase in population, accelerating the development of labor-intensive industries has become the main content of the industrial development strategy of most African countries. Currently, labor-intensive industries such as textiles, garments, leather, and agro-processing are growing rapidly in many African countries, creating a large number of industrial jobs and high value-added industrial products, increasing exports of industrial products.

With the accelerated pace of the construction of free trade zones on the continent, accelerated growth of intraregional trade has become an important opportunity to attract foreign investment and promote

export diversification, and there are increasing opportunities for the development of labour-intensive and regional market-oriented industries. Many African countries have developed industrial strategies based on the characteristics of their labor force to develop labor-intensive industries. For example, Ethiopia has prioritized the development of labor-intensive industries closely related to the agricultural sector, such as the leather industry and the textile and garment industry, as industrial sectors, which can not only promote the development of agriculture and animal husbandry, but also increase employment and promote exports. It is foreseeable that how to seize the opportunity in the new round of global industrial chain restructuring and the opportunity of the transfer of labor-intensive industries will become an important factor in the economic development of Africa in the coming period.

#### **2.5 Latin America: Deepening Intra- and Extra-Regional Economic and Trade Cooperation**

For a long time, the integration process has been an important factor constraining the economic development of the Latin American region. With the evolution of the global economic landscape and the deepening of international cooperation, the Latin American region is standing at a completely new historical starting point. In order to achieve higher-quality development and cope with external uncertainties, Latin American countries must deepen intra- and extra-regional economic and trade cooperation, unite to meet the challenges together, and pave the way for a prosperous and stable future.

##### 2.5.1 Within the Region: Strengthening Intergovernmental Cooperation

The Latin American region has historically been an advocate of integration. For example, the establishment of the Union of South American Nations (UNASUR) by 12 South American countries in 2008, the Community of Latin America and the Caribbean (CELAC) in 2011, and the Pacific Alliance (AP) in 2012 are representative of the progress of intra-regional integration in Latin America. However, the unilateralism and trade protectionism of the U.S. government from 2017 to the present have led to new changes in regional integration in Latin America. CELAC, established in 2011, is basically in a state of stagnation, and the countries of

the Latin American region are divided into two camps.

In the future, in order to promote economic integration, the Latin American region should pay special attention to the complementarity of economic structures and the construction of shared infrastructure. In terms of economic structure, countries can strengthen inter-industry cooperation to realize the convergence of industrial chains and complementarity of advantages. By promoting industrial diversification and reducing reliance on traditional resource-based industries, Latin America can improve overall industrial productivity, enhance economic resilience, and reduce the impact of external shocks. At the same time, the construction of shared infrastructure is also an important initiative to promote integration. Countries in Latin America can jointly invest in and build cross-border infrastructure, such as transportation networks, energy infrastructure, and information and communications technology. This will help reduce traffic and transportation costs, facilitate the flow of goods and services, and enhance overall economic efficiency. In addition to the economic dimension, the Latin American region also needs to strengthen political cooperation and coordination. Countries can jointly formulate and promote policies conducive to regional development, enhance information sharing and collaboration, and form synergy. At the same time, all regions also need to strengthen humanistic exchanges and educational cooperation, and enhance people's awareness and identity in order to promote social stability and cultural integration in all regions.

### 2.5.2 Outside the Region: Building a Community of a Shared Future

Geopolitical factors have indirectly influenced the regional integration of Latin America both within and outside the region. An example of this is the joint summit held by the Pacific Alliance and the Southern Common Market in Puerto Vallarta, Mexico on July 24, 2018. During the summit, a joint declaration and action plan was signed, committing to addressing trade protectionism and promoting regional integration. Additionally, countries like Chile, Mexico, and Peru have become members of the Asia-Pacific Economic Cooperation (APEC), and Chile has joined the Digital Economy Partnership Agreement (DEPA). These

countries are actively seeking economic integration with other economies in APEC to foster a sustainable economic growth. Moving forwards, by deepening the cooperation between the “Belt and Road” initiative and Latin America, the quality of China-Latin America economic and trade cooperation can be improved, the industrial structure reform and technological innovation of both sides can be promoted, the economic structure complementarity can be enhanced, and the regional competitiveness can be jointly improved.

### 2.6 West Asia: Deepening the Transformation of the Energy Industry

The West Asia region has historically been a strategically-important area for warfare, which serves as a vital connection point among the Arabian Sea, the Red Sea, the Mediterranean Sea, the Black Sea, and the Caspian Sea. It also serves as a transportation hub among Asia, Europe, and Africa. Its strategic geographic location also makes it a significant link between the Atlantic and Indian Ocean. Additionally, the region, particularly the Persian Gulf Coast, is abundant in oil resources, with over 90% of the oil it produces exported. This has earned it the reputation of the “world's oil treasure” with the largest reserves, production, and export volume. The area also possesses rich mineral resources. As a result, the West Asia region has a distinct economic structure with oil, gas, and mineral extraction as its primary industries. Its trade structure is characterized by a high degree of similarity, with oil and natural gas as the main exported products. Examples of countries in the region which represent the above-described pattern well are Iran, Iraq, Kuwait, Saudi Arabia and the United Arab Emirates. Furthermore, secondary sector industry in West Asia is relatively developed, accounting for 6.6% of the added value of the world's secondary industries and 40.6% of GDP in 2022<sup>9</sup>, surpassing the global average of 27.6%. The region is also known as the birthplace of 3 major religions - Judaism, Christianity, and Islam. However, it faces complex and longstanding challenges such as ethnic conflicts, religious conflicts, territorial disputes, effects of imperialism, and the

9 The statistical method is consistent with the calculation of the three industrial structures of the 20 countries in West Asia in Chapter 1.

impact of colonialism. These conditions affect resource exploitation, aggression, and oppression in the region. These factors have also led to frequent wars, social conflicts, and political instability hindering the economic development of the region. Therefore, it is crucial to implement the “Belt and Road” policy at a higher level with higher standards. It is also important to explore ways to transform the economic structure, leverage existing advantages, adopt policy measures to reduce its dependence on US dollars, innovate international security theories, and strengthen international assistance. Through these efforts, the growth potential of the West Asia region will be unlocked in order to achieve a faster and more sustainable development.

#### 2.6.1 Building on Inherent Strengths: Oil and Gas Pipeline Construction

West Asia, known as the “world’s oil treasure”, possesses crucial advantages in the development of its oil and gas resources, which can serve as a significant foundation for its future economic growth. Currently, the primary oil and gas pipelines in the region include the Arab Natural Gas Pipeline, the Southern Gas Corridor, the Turkey Creek Pipeline, the East-West Pipeline, the Islamic Natural Gas Pipeline, the Iran-Pakistan Pipeline, and the Iran-Oman Pipeline. Iran possesses the largest high-pressure natural gas pipeline network in the Middle East, spanning approximately 22,000 kilometers (14,000 miles)<sup>10</sup>. The International Gas Pipeline Access (IGAT) in Iran is operated primarily in the north-south direction, and it is managed by the National Iranian Gas Company (NIGC). Historically, Iran’s natural gas was predominantly used for domestic purposes such as power generation and oil well reinjection to enhance oil recovery. However, with the discovery of substantial gas fields and the lifting of national sanctions, Iran has been accelerating its pipeline construction to facilitate natural gas exports to India and China via Pakistan in the east, as well as to the European continent through Iraq and Turkey in the west. The Saudi Natural Gas Pipeline, operated by Saudi Aramco, primarily stretches in the east-west direction. Since the completion and activation of the Master Gas System (MGS) in Saudi

Arabia in 1985, the utilization rate of its natural gas has been notably improved. Saudi Arabia primarily transports natural gas from the east to the major refineries in the west, subsequently distributing its product throughout the country and overseas. Currently, energy cooperation within the “Belt and Road” initiative in Central Asia is mainly focused on Central Asia, South Asia, and Russia. However, as the situation in the Middle East becomes more stable, it is likely that energy cooperation within the “Belt and Road” initiative will attract a greater participation of countries in West Asia, further strengthening the influence of the “Energy Silk Road”.

#### 2.6.2 Promoting the Energy Transition: Developing Renewable Energy

With the intensification of climate changes and energy crises accelerating the transformation of traditional energy as well as the development and utilization of renewable energy has become a consensus around the world. As the “world’s oil depot”, the promotion of energy transformation and upgrading in the West Asia region is not only in line with the concept of green and low-carbon development in the “Belt and Road” policy, but it is also a major measure which actively responds to climate changes, maintains regional ecological security, and promotes high-quality development in the West Asia region.

The West Asia region is characterized by vast tropical deserts, primarily experiencing the tropical desert and temperate continental climate. These conditions contribute to high wind speeds and abundant wind energy resources. This makes wind power generation highly-promising. Additionally, its regional location in the tropical region provides ample direct solar radiation creating favorable conditions for solar power generation. According to the “Belt and Road” Renewable Energy Project Classic Case Study Report, most countries in the region have an average annual direct solar radiation intensity of 1800 kWh per square meter, while Saudi Arabia and Iran exhibit a tremendous potential for photovoltaic power generation with an average annual direct solar radiation intensity of 2000-2100 kWh per square meter. Although water resources are relatively scarce in the West Asia region, Iran possesses an extensive river network,

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<sup>10</sup> Refer to the data in One Text Reading: Oil and Gas Resources and Pipeline Distribution along the Belt and Road.

offering the potential for hydropower development. Currently, hydropower accounts for the largest proportion of renewable-energy-installed capacity in Iran at approximately 93.49%. However, due to prolonged droughts, the operational performance of hydropower stations has significantly declined, causing the proportion of hydropower in the country's total electricity production to fall from a peak of 14% to less than 5% in 2019. Consequently, the generation of wind and photovoltaic power is expected to become the primary focus of traditional energy transformation in West Asia.

Nevertheless, the region faces several challenges in energy transformation. Most countries in West Asia are still developing nations encountering high political risks, unstable economic development, weak foreign exchange reserves, and substantial exchange risks. Thus, the legal provisions of local governments to attract and protect foreign investments are often inadequate, and the region tends to lack substance in policies that support renewable energy. Further renewable energy policies in the region are subject to frequent changes in implementation. These risks have deterred international companies from venturing into the renewable energy market in West Asian countries, and their willingness to invest in project development or long-term monitoring has been diminished. Hence, it is imperative for major economic powers to support West Asian countries in formulating stable and rational renewable energy development plans through various development-assisting funds and capacity-building platforms. This could fundamentally reduce policy fluctuations, enhance policy expectations, and foster corporate confidence in investment. Furthermore, West Asian governments must increase their awareness of ESG-related risks in renewable energy projects, encourage enterprises to acknowledge environmental and social risks associated with renewable energy projects, and comply with international norms. By doing so, they can improve their ability to mitigate similar risks, prevent project delays, and avoid reputation losses stemming from ESG issues.

### 3. Future Challenges and Recommendations

The benefits brought by the “Belt and Road” initiative to participating countries have been fully

reflected in the economic development of various regions since its inception. While promoting infrastructure construction and addressing the employment and economic development of participating countries, China's surplus capacity and capital can also be exported, obtaining beneficial economic returns. According to data from the General Administration of Customs, China's exports to countries along the “Belt and Road” increased from \$569.19 billion in 2013 to \$983.76 billion in 2020 when the proportion of exports also increased from 25.7%. However, it should not be overlooked that while increasing the total trade volume and strengthening infrastructure construction, the participating countries also face significant challenges while participating in the “Belt and Road” cooperation.

#### 3.1 Major Challenges

The important challenges facing the “Belt and Road” initiative in the future include the debt risk brought about by the annual increase of cumulative external debts, the exchange rate fluctuation costs faced by deep participation in the international market, and the environmental costs brought by infrastructure construction and international trade. China and participating countries should work together to overcome these challenges and promote more robust and sustainable development of cooperation with the principle of equality, win-win effect and sustainability.

##### 3.1.1 Debt Risk

In the process of further promoting the deepening and expansion of the “Belt and Road” initiative while providing loans to participating countries, China has always provided loans for project construction based on the actual situation of the host country adhering to the principle of taking economic and social benefits as the guide to avoid causing new debt burdens, new debt risks, and financial burdens to the host country. Meanwhile, China will also try its best to help some countries facing debt difficulties. For example, the Chinese Government has waived interest-free loans and debts maturing by the end of 2020 to the African countries concerned. Thus, China is a country that has made the greatest contribution to the G20 Debt Relief Initiative.

However, many countries participating in the “Belt



and Road” initiative already had a large amount of US dollar debts before signing the Memorandum of Understanding for Belt and Road Cooperation, with multilateral organizations such as the World Bank, development banks, and investment banks in various continents as the main debtors of these debts. Against the backdrop of aggressive interest rate hikes in the United States, the difficulty of participating countries in repaying their debts in US dollars will further increase which will result in increased debt risks.

According to the data of the International Monetary Fund, by 2020 the cumulative loans of countries

participating in the “Belt and Road” initiative exceeded \$ 3.77 trillion. Among the 115 “Belt and Road” countries in the 6 sub-regions we focused on, 77 disclosed the current value of their foreign debts as a proportion of their total national income. This indicator is often used to measure a country’s dependence on foreign investments and its foreign debt risk. Usually 25% is considered a warning line. If a country’s external debt to GNI exceeds 25% then the country should be considered high risk. From the table below, it can be seen that the debt pressure in various regions increased significantly from 2018 to 2020, but was generally stable and slightly improved in 2021 compared to 2020.

**Table 2 Distribution of the proportion of present value of external debt to GNI from 2018 to 2021**

Proportion	Southeast Asia	Central Asia	South Asia	West Asia	Africa	Latin America	Total
2021							
0~25%	6	1	3	2	14	4	30
25~50%	1	2	1	3	23	4	34
≥50%	1	1	1	1	7	2	13
2020							
0~25%	6	1	2	1	12	3	25
25~50%	1	2	2	4	24	4	37
≥50%	1	1	1	1	8	3	15
2019							
0~25%	7	2	2	1	23	2	37
25~50%	1	2	3	4	13	7	30
≥50%	0	0	0	1	8	1	10
2018							
0~25%	7	2	4	1	24	2	40
25~50%	1	2	1	4	13	6	27
≥50%	0	0	0	1	7	2	10

Source: World Bank, National Bureau of Statistics

Note: Gross National Income (GNI) = GDP+ ( Factor income from abroad-Factor expenditures abroad )

In terms of geographical distribution, it is noteworthy that 5 out of the top 10 nations with the highest debt risks are located in Africa. This implies that Africa’s overall debt risk surpasses that of the other regions. Moreover, when analyzing the composition of debts, it becomes apparent that the primary factor

contributing to the debt risk of all countries is the existence of multilateral dollar debts. Lebanon, for instance, finds itself grappling with the most severe debt predicament. According to data provided by the Ministry of Finance of Lebanon in 2019, the country’s domestic bonds accounted for approximately US

\$57.9 billion, with its European bonds amounting to US \$31.7 billion, multilateral and bilateral sovereign loans reached US \$2.05 billion, and other debts stand at US \$350 million. Notably, loan sources primarily stem from

multilateral financial institutions such as the World Bank and the European Investment Bank, the Gulf countries, relevant funds, and western nations including France and Italy.

**Table 3 Top 10 countries in terms of the proportion of present value of foreign debt to GNI in 2021**

Country	Region	2018	2019	2020	2021
Lebanon	West Asia	67.12%	81.19%	96.76%	161.32%
Cape Verde	Africa	79.47%	82.40%	108.32%	96.21%
Jamaica	Latin America	92.13%	83.68%	74.11%	72.42%
Djibouti	Africa	233.58%	54.84%	70.00%	71.84%
Angola	Africa	37.93%	49.85%	82.32%	67.00%
Maldives	South Asia	24.31%	39.30%	66.50%	66.62%
Zambia	Africa	37.26%	45.83%	68.18%	60.72%
Mozambique	Africa	67.99%	64.57%	68.60%	58.96%
Dominica	Latin America	51.74%	42.24%	53.28%	55.32%
Laos	Southeast Asia	44.79%	47.48%	53.01%	54.05%

Source: World Bank, National Bureau of Statistics

It can be seen that debt risk is an important factor to be considered when promoting the “Belt and Road” initiative in the future. In the post-pandemic era, the economy of various countries has experienced a significant decline, resulting in weak fiscal revenues and a further increase in debt repayment pressure. Especially for low-income countries, the debt risks caused by economic downturn may be more serious, with which lenders’ capital security and borrowers’ economic development may be seriously affected. In the future, China will build a high-quality “Belt and Road” initiative. As such, it becomes imperative to fully understand and control the debt risk of each participating country in advance and focus on the sustainability of national debts.

### 3.1.2 Environmental Costs

With the launch of the “Belt and Road” initiative, a large amount of greenhouse gases will be emitted while helping participating countries carry out infrastructure construction. At the same time, the solid waste generated by construction materials and the harmful substances that may be contained in them also pollute

the living areas as well as the surrounding environment. Especially in the context of the United Nations’ “peak carbon” and “carbon neutrality” agenda, the issue of carbon emissions caused by infrastructure construction has become an important environmental cost to be considered by national governments.

Many countries along the “Belt and Road” have realized the importance of environmental protection, believing that development should not be achieved at the cost of environmental or resource losses. Some ASEAN members, such as the Philippines, Myanmar, and Vietnam, indicate that they will not increase carbon dioxide emissions, which propose implementing carbon taxes, increasing carbon sinks, and developing goals on non-greenhouse gas such as clean energy, while also phasing down fossil fuel usage over a period of time. In the near future, the decarbonization and transformation of existing manufacturing processes are also included in the plans. Russia has committed to reducing greenhouse gas emissions to 70% of its level in 1990 by 2030, achieving net-zero emissions by 2060 with the use of forests and other ecosystems. Of the 115

countries that are part of the “Belt and Road” initiative that we cover, a total of 108 have released their data on carbon emissions. Based on the total regional carbon emission, West Asian and African regions achieved the

highest total, which was 3.068 billion and 2.890 billion tonnes in 2020, with South Asia and Southeast Asia exhibiting the highest rate of increase, averaging 3.07% and 2.90% from 2012 to 2020.

**Table 4 Distribution of total carbon emissions (in millions of tons) from 2012 to 2020**

Year	Southeast Asia	Central Asia	South Asia	West Asia	Africa	Latin America	Total
2012	214.06	71.44	57.14	274.20	268.39	97.05	982.29
2013	216.48	73.68	58.59	277.49	271.54	98.35	996.12
2014	224.97	67.97	60.88	287.61	276.67	97.62	1015.72
2015	229.82	66.26	63.40	292.12	278.15	96.34	1026.09
2016	234.94	67.60	67.35	302.02	283.26	94.18	1049.35
2017	244.64	70.45	71.25	310.86	289.36	89.85	1076.42
2018	259.90	71.82	71.94	313.22	294.00	86.30	1097.18
2019	272.68	72.77	72.42	312.32	299.60	82.53	1112.32
2020	269.14	71.02	72.78	306.81	288.97	71.94	1080.67
Average growth rate[1]	2.90%	-0.07%	3.07%	1.41%	0.93%	-3.67%	1.20%

Source: World Bank, National Bureau of Statistics

Note 1: The average growth rate is the geometric growth rate from 2012 to 2020

From the perspective of country breakdown, 3 of the top 10 countries with the highest total carbon emission in 2020 were from West Asia and 4 were from Southeast Asia. At the same time, the overall carbon emission in 2020 will decline for the first time

since 2012, indicating that the participating countries of the “Belt and Road” have gradually realized that they should pay attention to sustainable development in the process of participating in infrastructure construction and international trades.

**Table 5 Top 10 countries with total carbon emissions in 2020 (millions of tons)**

Country	Region	2016	2017	2018	2019	2020
Indonesia	Southeast Asia	87.00	91.46	98.05	102.09	97.65
Iran	West Asia	84.94	87.90	89.17	85.67	84.46
Saudi Arabia	West Asia	73.43	72.81	71.59	72.07	71.26
Turkey	West Asia	46.08	50.31	50.35	49.15	50.50
South Africa	Africa	53.09	54.44	54.81	55.54	50.15
Vietnam	Southeast Asia	33.36	34.22	39.98	45.49	47.06
Pakistan	South Asia	40.02	42.67	42.20	42.75	43.66
Thailand	Southeast Asia	40.66	41.47	41.85	43.22	43.38
Nigeria	Africa	30.72	31.12	32.09	33.22	32.23
Malaysia	Southeast Asia	28.76	28.11	29.78	30.21	30.21

Source: World Bank, National Bureau of Statistics

In May 2017, the Ministry of Environmental Protection, the Ministry of Foreign Affairs, the National Development and Reform Commission, and the Ministry of Commerce jointly issued the Guiding Opinions on Promoting the Construction of Green “Belt and Road”, proposing to promote the construction of green “Belt and Road” by promoting the development of green trades. On November 30, 2018, the Green Finance Professional Committee of the Chinese Financial Society (hereinafter referred to as the Green Finance Committee) and the “Green Finance Initiative of the City of London” jointly released the “Belt and Road” Green Investment Principles during a meeting. In the future, environmental costs will become an indicator to which the participating countries of the “Belt and Road” pay more and more attention. Green trades and green investments in the construction of the “Belt and Road” will become one of the important challenges facing its development in the future.

### 3.1.3 Exchange Rate Fluctuations

The significant decline in exchange rates has caused huge losses to investment countries, such as the significant depreciation of the Zimbabwean

currency in 2008 due to the financial crisis, which caused serious losses to Chinese enterprises, whose foreign debts were not repaid on time. The economic development level of countries along the “Belt and Road” is quite different. A total of 115 “Belt and Road” countries in the 6 subregions we focus on are mostly low-income countries, many of which have problems such as the over-dependence on foreign investments, a single industrial structure and an insufficient endogeneity. Therefore, these countries often face more serious exchange rate risks.

Since the COVID-19, many countries participating in the “Belt and Road” have faced serious exchange rate fluctuations. According to the data of the World Bank, among 115 “Belt and Road” countries in the 6 subregions we focus on, the currency of Zimbabwe and Türkiye will depreciate by 76.38% and 46.52% respectively against US dollars in 2022; among the top 10 countries whose currency is devalued against US dollars, 5 are in the African region and 2 are in Latin America, which shows that the African region and Latin America are facing more serious exchange rate risks than countries participating in the “Belt and Road” as a whole.

**Table 6 Top 10 countries with depreciated currencies against the US dollar in 2022**

Country	Region	2021	2022
Zimbabwe	Africa	-42.04%	-76.38%
Turkey	West Asia	-20.81%	-46.52%
Sudan	Africa	-85.44%	-32.18%
Laos	Southeast Asia	-6.72%	-30.90%
Ghana	Africa	-3.62%	-29.82%
Argentina	Latin America	-25.74%	-27.28%
Suriname	Latin America	-48.96%	-26.19%
Sierra Leone	Africa	-5.84%	-25.69%
Pakistan	South Asia	-0.66%	-20.48%
Egypt	Africa	0.73%	-18.35%

Source: World Bank, National Bureau of Statistics

On July 1, 2022, China Foreign Exchange Administration issued the Guidelines for Enterprise Exchange Rate Risk Management, which aims to help enterprises comprehensively understand and scientifically manage exchange rate risks, helps improve their awareness and ability to prevent exchange rate risks and helps Chinese enterprises reduce the risk of exchange rate fluctuations while participating in projects related to the “Belt and Road” from a micro perspective. However, in the foreseeable future, the cost of exchange rate fluctuations that the countries participating in the “Belt and Road” may face is still one of the important challenges for the future development of the “Belt and Road”.

### **3.2 Future Policy Recommendations**

With the continuous evolution of the global economy and the deepening of the “Belt and Road” initiative, China and participating countries need to further strengthen their cooperation in the future, so as to achieve higher-quality development. In the process of further promoting the construction of the “Belt and Road” in the future, China and participating countries can further deepen their cooperation around the development of multilateral cooperation, establish unified international standards, and actively promote the implementation of supporting measures. This will contribute to the joint promotion of the high-quality development of the “Belt and Road” while accelerating the pace of high-quality development.

#### **3.2.1 Developing Multilateral Partnerships**

Currently, the financing of many projects in the “Belt and Road” initiative mainly comes from bilateral loans between China and participating countries. As these projects often require a large amount of capital investment, China has taken considerable risks in them, which may lead to the concentration of external debt risks in China. If some projects encounter difficulties or problems in repayment, pressure will be put on China’s financial stability. In the future, in the process of promoting the construction of the “Belt and Road”, developing multilateral cooperation is a necessary measure to achieve a more balanced, robust, and sustainable development.

First of all, while strengthening the participation

of international organizations, China and participating countries should encourage and actively attract international organizations to participate in the construction of the “Belt and Road”. Multilateral institutions such as the United Nations and the World Bank can play an important role in spreading the financing risks of projects while ensuring their sustainability by providing support in terms of funds, technologies as well as project evaluation. Secondly, countries can form multilateral alliances in specific fields or regions to jointly promote the development of related projects. Through cooperation in multilateral alliances, a larger scale of cooperation can be formed, consensus can be reached, and resource integration as well as complementary advantages can be achieved. Multilateral alliances also help to strengthen the overall planning and coordinated management of projects, while improving their efficiency and effectiveness. Meanwhile, countries should strengthen policy coordination to ensure policy consistency and synergy in the construction of the “Belt and Road”. During the project promotion process, a regular policy communication mechanism needs to be established to address potential policy conflicts and frictions, consensus-building among countries should be promoted in the process of jointly building the “Belt and Road”, and the high-quality development of projects should be jointly promoted.

#### **3.2.2 Establishment of Harmonized International Standards**

The foundation of cross-border cooperation is the consistency of the discourse system which requires unified international standards as a guarantee for conducting cross-border cooperation. At present, international standards in many areas are to be unified. For example, the inconsistent standards of countries participating in infrastructure construction may lead to project schedule delays, increased costs, and an uneven construction quality which will bring certain uncertainties to multinational infrastructure cooperation and restrict the smooth advancement of a project while maximizing the benefits. At the same time, in the process of promoting green economy development, the differences in environmental standards and emission restrictions across countries may lead to

inconsistencies in environmental requirements and make it difficult to reach a consensus on environmental protection in transnational regions. This may affect the environmental sustainability and ecological balance along the “Belt and Road” route. Another example is the significant differences in the trade rules and tax policies of participating countries. This may lead to increased trade barriers and trade frictions which could affect the smooth operation of cross-border trade and hinder the free flow of trade and investment within the regions. This could also negatively affect economic cooperation and development along the “Belt and Road” route.

In order to solve the above problems, countries should actively engage in consultations and dialogues while further promoting the “Belt and Road” initiative. Standardization can also be helpful. We can reach a consensus on the standards in key fields by convening high-level meetings, intergovernmental dialogues, professional forums and other forms. At the same time, it is recommended to establish a consensus international standard in key areas such as infrastructure construction, green economy development, and trade rules to ensure that all countries reach an agreement on important issues, optimize resource allocations and achieve mutual benefits, and win-win results. After the completion of the standards, countries should promote a mutual recognition and certification mechanism of them to ensure that products and service of all countries are recognized and trusted in cross-border trades, thus promoting trade facilitation, reducing transaction costs, and improving market access efficiency. At the same time, international organizations such as the International Organization for Standardization (ISO) and the World Trade Organization (WTO) should play a more active role in promoting the development and promotion of relevant standards. Countries can actively participate in these organizations, speak up for their own interests and promote the improvement of the global standard system.

### 3.2.3 Promoting Supporting Policies

Actively promoting the implementation of supporting measures is a key element to ensure

that substantial results are achieved through the construction of the “Belt and Road”. The “Belt and Road” initiative is not an isolated contract, which needs to be matched with various international cooperation, domestic opening-up policies and policies attracting foreign investments, so as to be truly implemented for sustainable development. In the process of promoting the construction of the “Belt and Road”, China and participating countries need to actively strengthen international cooperation and docking, promote policy coordination and integration (including signing bilateral or multilateral agreements with countries along the route), promote trade facilitation, eliminating unnecessary barriers, and promote the construction of economic cooperation zones. Multilateral cooperation will help strengthen the consensus among all countries to build, share, and make the “Belt and Road” a cooperation platform for global win-win results.

It would be useful to expand the opening-up policies of participating countries. China and participating countries can strengthen their opening-up policies, provide more convenient conditions and preferential policies, and encourage domestic enterprises to actively participate in overseas investments as well as cooperation. The Government can continue promoting trade liberalization, reduce tariff and non-tariff barriers, simplify approval procedures, and provide more preferential tax policies as well as a financial support for enterprises in order to attract more domestic enterprises to participate in the “Belt and Road” project.

Secondly, it would also be useful to develop innovative policies of participating countries to attract foreign investments. In addition to supporting domestic enterprises to “be global”, participating countries can also strengthen policies and measures to attract foreign investments, encourage overseas enterprises to carry out investments and cooperation in China, and attract more overseas enterprises to participate in the “Belt and Road” as well as related domestic construction by providing investment preferences, lowering the threshold of market access, protecting intellectual property rights, and providing a stable legal environment. This will not only help the project

to obtain financial support, but it will also promote the sharing of technologies and management experience while improving the overall level of cooperation.

Thirdly, it would be beneficial to actively carry out cross-border financial cooperation. In order to provide adequate financial support and service, a “Belt and Road” fund could be established to promote multilateral financial institutions to participate in project financing and develop flexible financing tools. Through financial cooperation, it will better meet the financing needs of participating countries while promoting the landing and

implementation of projects.

Fourthly, it would be desirable to strengthen cross-border information exchange and communication. This would be helpful for developing a timely understanding of the needs and concerns of all parties and negotiating a resolution to resolve any potential issues in cooperation. The establishment of contact mechanisms, the holding of high-level dialogues, and the holding of forums can help to enhance mutual understanding, consolidate the consensus, and promote the smooth implementation of supporting measures.

# Bridging Past and Future: A Decade of Economic Progress and The Path Forward in the ASEAN+3 Region

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## Abstract

The ASEAN+3 region has achieved a remarkable pace of economic development despite a more challenging global environment in the period since the global financial crisis. The region has emerged as the biggest driver of global growth and continues to remain relatively resilient, coping well with global forces that constantly challenge its growth path. Rapid urbanization and the emergence of a large middle class have contributed to the region's growth rebalancing, with domestic demand playing a key role in anchoring the region's resilient growth. Progress in regional integration—particularly between ASEAN and the Plus-3 economies over the last decade—have provided the added impetus to growth while fostering closer cooperation between one another. Looking ahead, the sustained economic development and growing regionalism in ASEAN+3 are expected to continue as we move into the next decade. While short-term economic prospects remain uncertain, longer-term fundamentals continue to be favorable. Even so, the region faces a growing number of structural challenges, such as aging population and climate change.

Addressing these challenges would require continued investment in health and climate infrastructure, which would inevitably shape the future macro-financial stability in the region, and its overall growth and development.

## 1. Introduction

The ASEAN+3 region—comprising 10 member states of the Association of Southeast Asian Nations (ASEAN), and China; Hong Kong, China<sup>2</sup>; Japan; and Korea is amongst the fastest growing economies in the world. Over the past decade, i.e., from 2013 to 2022, the ASEAN+3 region has emerged as the biggest driver of global economic growth, at a time when growth in major advanced economies—United States (US) and euro area—were sputtering. During this period, the region saw a fundamental rebalancing of growth drivers towards regional domestic demand, which anchored the region's growth stability. Thanks to the region's rapid urbanization and growing affluence, the region has expanded to become the largest economic region in the world. The dynamism and resilience of the region also reflects the growing regional integration, particularly between ASEAN and the Plus-3 economies over the past decade. Despite the global headwinds—from the escalation of US and China trade tension (2018-19) to the onset of the COVID-19 pandemic (beginning 2020), and thereafter,

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<sup>2</sup> For brevity, “Hong Kong, China” and “Brunei Darussalam” are referred to as “Hong Kong” and “Brunei”, respectively, in the text.



intensifying geostrategic competition and tension (2021-22)—the region's economies have continued to move forward towards further integration, by further strengthening economic linkages and cooperation in various dimensions, such as trade, investment/finance and movement of people (tourism and migration). The decade also saw the continuing proliferation of free trade agreements across the ASEAN+3 and beyond, including the Regional Comprehensive Economic Partnership (RCEP) which is by far the largest trade bloc in the world. All these actions—and successful outcomes thus far—attest to members' strong commitment to ensuring economic and financial stability in the region, further bolstering resilience. Looking ahead, the outlook for the region in the next decade remain positive, benefiting from the continuing trend in regional integration. However, prospects for ASEAN+3 will hinge on each economy's capacity (and collectively, as a region) to capitalize on the strengths to navigate the transformed post-pandemic landscape—one that is reshaping both established business norms as well as trade relationships. At the same time, the region is also confronted with longer-term structural challenges (such as an aging population and climate change) that would inevitably shape the future macro-financial stability in the region. Addressing such challenges would be crucial, not only to prevent exacerbating pandemic-induced economic scars, but also to safeguard the region's growth potential in the next decade.

This essay is organized as follows. Section 2 provides a retrospective review of the region's economic developments over the past decade (2013 to 2022)—a period bookended by the moving past the global financial crisis to the end of the COVID-19 pandemic. Section 3 takes stock of the strides made in regional integration and cooperation over the past decade, which substantially influenced the region's present economic configuration and the prospects ahead. Section 4 analyses the region's economic outlook in the next decade, having emerged from the ravages of the COVID-19 pandemic, and in the face of long-term challenges posed by population ageing and climate change. Section 5 concludes.

## **2. Retrospective Review: Economic Developments in the ASEAN+3 Region in the Decade since the End of the Global Financial Crisis**

The decade since the 2008-09 global financial crisis and the journey to recovery can be characterized by heightened uncertainties, but also transformative given the rise of emerging economies (particularly China), shifting international trade dynamics, and technological advancements. As major advanced economies—United States (US) and euro area—embarked on a multiyear balance sheet repair and deleveraging, the ASEAN+3 region continues to expand. At a time when growth in major advanced economies was weak, the region saw a fundamental rebalancing of growth drivers towards regional domestic demand, which anchored the region's resilient growth over the past decade. In view of the region's rapid urbanization and growing affluence, the region has expanded to become the largest economic region in the world and the major driver of global growth. Despite more frequent market turbulence, regional growth remained resilient and financial stability was preserved. Central banks and regulatory authorities in the region have continued to adopt a comprehensive policy mix to shield the economy against the risks of a boom-bust cycle.

### ***2.1 Rebalancing of Growth Drivers in ASEAN+3***

The 2008–09 global financial crisis was a historic milestone for the global economy. It marked a key turning point in the global macroeconomic landscape (Park and others 2013). The period since then was characterized by an era of diminished global growth expectations and more frequent financial market turbulence. Despite the adverse implications on global growth and financial stability, the global financial crisis had a relatively limited short-term impact on regional economies (Figure 2.1). The region was largely spared the financial turmoil and seizing up of credit markets that gripped major advanced economies in the west. However, the region did suffer an extended trade downturn due to the severity of the economic downturn in the US/euro area, and the subsequent balance sheet repair. The shock was transmitted through the trade channel, which was amplified by Asia's integrated

supply chains with cascading effects on intra-regional exports (Figure 2.2).

**ASEAN+3 region experienced an extended period of sluggish exports due to the collapse in external demand amid the multi-year balance sheet repair in the US/euro area**



Figure 2.1. Selected Economies: Real GDP Growth (Percent, year-on-year)

Source: National authorities via Haver Analytics.

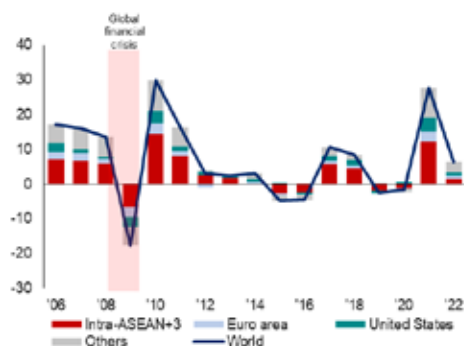


Figure 2.2. ASEAN+3: Exports by Key Destinations (Percent point contributions to year-on-year growth)

Source: National authorities via Haver Analytics.

Encouragingly, during this period, domestic demand across most regional economies showed a robust performance, which mitigated the drag from sluggish global trade. Targeted fiscal packages undertaken by regional authorities were instrumental in boosting domestic investments especially in infrastructure and real estate, while monetary

easing helped to spur domestic consumption. Of significance, the rapid growth of China—bolstered by its RMB4 trillion fiscal stimulus—had a large positive spillovers to the region, which cushioned the impact of weak external demand from the US and the euro area. China’s stimulus package was heavily focused on infrastructure development, which provided opportunities for ASEAN economies (namely Cambodia, Indonesia, Lao PDR, Malaysia and Vietnam) to participate in cross-border projects, thereby fostering investment within the region. At a time when growth in major advanced economies was weak, the region saw a fundamental rebalancing of growth drivers towards domestic demand, which anchored the region’s robust growth over the past decade (AMRO 2019; AMRO 2020). Figure 2.3 shows that domestic demand (net of imports) in ASEAN-4 (Indonesia, Malaysia, the Philippines, Thailand), Vietnam and China as a share of total value-added exports, rose to around 80 percent in 2021 (from 72 percent in 2005). The pivot towards domestic demand in the last decade is reflected in a reduction in the share of domestic manufactured goods that were bound for extra-regional exports from the region, while the share of value-added exports to meet final demand in China and the rest of the region increased (see Section 3 for further discussion).

**Growth rebalancing in the region—pivot to domestic demand**

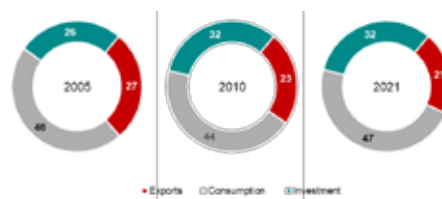


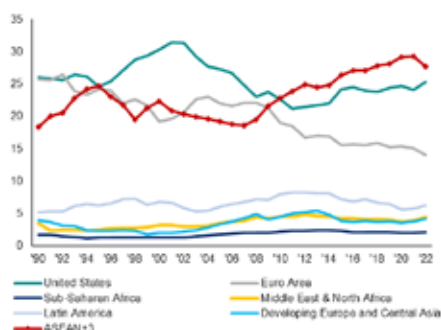
Figure 2.3. ASEAN-4, Vietnam and China: Shares of GDP Components, Import-Adjusted Method (Percent of GDP)

Sources: OECD; and AMRO staff estimates.  
Note: ASEAN-4 = Indonesia, Malaysia, the Philippines and Thailand.

Given the region’s rapid urbanization and growing affluence, the ASEAN+3 region has expanded to become the largest economic region in the world (Figure 2.4). The region now accounts for more than a quarter (28 percent) of world GDP (at market exchange rates), higher

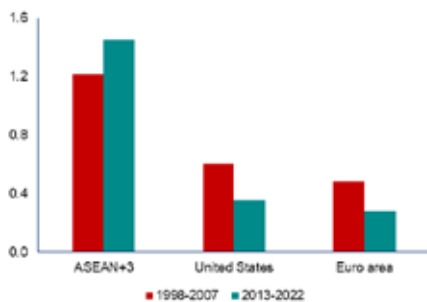
than the US (25 percent) and the euro area (14 percent). More importantly, the region has become the biggest driver of global growth. Between 2008 and 2022, the region's contribution to global growth was more than doubled the combined contribution of US and euro area (Figure 2.5). Accompanying the regional growth story is the rising share of global trade, much of which is driven by rapidly expanding intra-regional trade and investment (ADB 2017) (see further discussion in Section 3). For example, intra-ASEAN+3 trade amounts to US\$6.4 trillion in 2022, a twofold increase from 2008. As a share of world trade, intra-ASEAN+3 trade accounts for 44 percent in 2022, which is comparable to the share of intra-regional trade in the euro area (47 percent).

**ASEAN+3 has expanded to become the largest economic region in the world, and is increasingly a bigger driver of global growth**



**Figure 2.4. Selected Economies/Regions Share of Global GDP (Percent)**

Source: National authorities via Haver Analytics.  
Note: Based on GDP at market prices.



**Figure 2.5. Average Contributions to Global Growth (Percentage points)**

Source: National authorities via Haver Analytics.

**2.2 Growing Market Headwinds**

In the financial sector, the period since the global financial crisis has ushered-in not just frequent turbulence, but greater market volatility, as the global economy entered a period of chronic weak demand and central banks in major advanced economies experimented with unconventional monetary policies to prop up growth. As a result, the region experienced capital flow surges, sustained increased in asset prices, exchange rate appreciation and strong credit expansion. The extended period of ultra-low global interest rates fuelled the search for yields, which culminated in large inflows of foreign capital into regional emerging markets—Indonesia, Korea, Malaysia, the Philippines and Thailand (Figure 2.6). To some extent, pull factors such as progressive capital market liberalization in several ASEAN economies also provide the impetus for capital inflows (Chua and others 2013). While there were significant differences in individual economies' responses in absorbing the excess liquidity, most regional economies met this challenge by allowing their exchange rates to appreciate against the US dollar while accumulating reserves.<sup>3</sup> For some economies, such as Indonesia and Korea, the pace of currency appreciation was particularly sharp in 2010-11 (Figure 2.7). The ample liquidity also buoyed regional stock markets, with several benchmark equity indices reaching record highs from January 2009 and April 2013, such as in Korea, Indonesia and the Philippines (Figure 2.8). Similarly, the outstanding banking sector credit expanded sharply within a short period of time, in excess of 140 percent of GDP especially in Hong Kong, Indonesia and Singapore (Figure 2.9).

**Ample global liquidity in the first half of the decade following the global financial crisis led to significant capital flow surges and exchange rate appreciation in ASEAN+3...**

<sup>3</sup> Central banks in regional emerging markets employ sterilization interventions, albeit to varying degrees, to mitigate the impact of the increased money supply from its foreign exchange interventions in response to the surge in capital inflows. According to Morgan (2011), the direct impact of the US quantitative easing policies on domestic liquidity in emerging Asia appears to have been easily contained by sterilization policy.



Figure 2.6. Selected ASEAN+3: Nonresident Net Portfolio Capital Flows (Percent of GDP)

Source: IIF; and national authorities via Haver Analytics.  
 Note: Selected ASEAN+3 refers to Indonesia, Korea, Malaysia, the Philippines and Thailand.

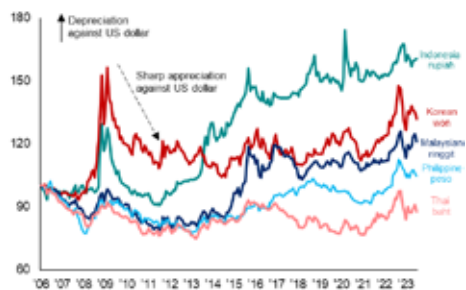


Figure 2.7. Selected ASEAN+3: Exchange Rates (vis-à-vis the US dollar) (Index, January 2006=100)

Source: National authorities via Haver Analytics.  
 Note: IDR = Indonesia rupiah; KRW = Korean won; MYR = Malaysian ringgit; PHP = Philippine peso; THB = Thai baht.

...which resulted in sustained increase in asset price and strong credit expansion



Figure 2.8. Selected ASEAN+3: Stock Market Performance (Index, January 2006=100)

Source: IIF; and national authorities via Haver Analytics.  
 Note: Selected ASEAN+3 refers to China, Indonesia, Korea, Malaysia, the Philippines, Thailand and Singapore.

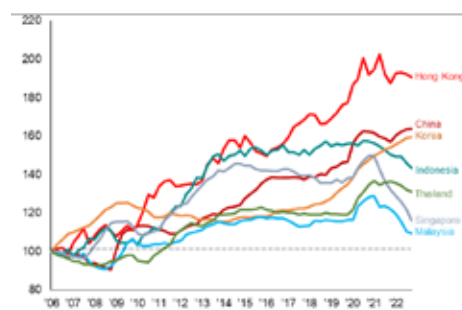


Figure 2.9. Selected ASEAN+3: Outstanding Banking Sector Credit (Index, Q1 2006=100)

Source: BIS via Haver Analytics.  
 Note: Outstanding banking credit to households and non-financial corporate sectors.

As the US economy showed tentative signs of recovery, the US Federal Reserve began to talk about the possibility of ending its unconventional monetary policies or tapering its asset purchase program in mid-2013. The “taper tantrum” was characterized by heightened global risk aversion amid a sharp re-pricing of risk assets. As a result, many emerging markets including in the region, experienced massive capital outflows, currency depreciation, widening of external financing risk premia, and falling equity prices. Asian emerging markets (such as Indonesia and India) with twin deficits that were more vulnerable due to weaker fundamentals were most affected. Encouragingly, regional emerging markets took the lessons of the taper tantrum to heart, and took steps to bolster macroeconomic fundamentals. This helped to dampen market reactions when the US Federal Reserve eventually undertook monetary policy normalization starting in 2014. Market pressures were more subdued, thanks to the resilient economic growth and improved current account position in vulnerable economies, notably in Indonesia (Figure 2.10). Moreover, reserves remained adequate which provided the needed defence (Figure 2.11).

Towards end of 2016, the Trump presidential victory sent global emerging markets yet into another tailspin as investors scurried for traditional safe-haven assets on concerns about US trade policies, especially with China. Unlike the period preceding the global financial crisis, US-China trade relationship was severely put to the test in the following two years (2018-19)

as trade tensions between US and China escalated, which caused a sharp decline in China's exports to the US. Concerns about the negative impact of US tariffs on China reverberated along global value chains in the region owing to the significant regional content embedded in China's auto and electronics exports. Notwithstanding the heightened trade tension, some regional economies did benefit to some extent from the subsequent trade diversions. Figure 2.12 shows that ASEAN+3 excluding Mainland China (ASEAN+3 (ex-China)), benefited the most from the diversion of US imports from China as compared to rest of the world. While total regional exports remained generally weak, data on the increase in individual economies' shares of total US imports between June 2018 and December 2019 suggest that most of the decline in the import of goods by the US from China were offset by its imports from ASEAN+3 (ex-China) economies (Figure 2.13). This positive development suggests some degree of product-market substitution, with the region likely to continue reaping some of the benefits of trade diversion, particularly those with high export similarities to China's products.

**Improvements in current account balances and adequate reserves buffer helped to safeguard regional financial stability**

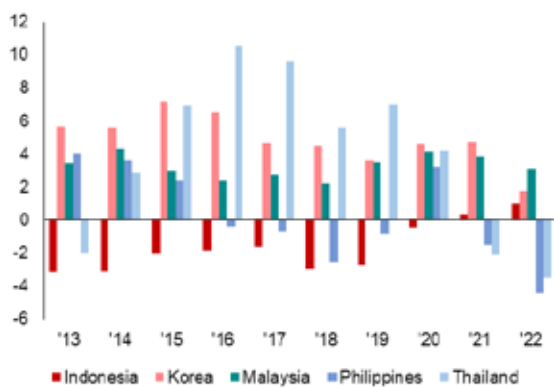


Figure 2.10. Selected ASEAN+3: Current Account Balance (Percent of GDP)

Source: National authorities via Haver Analytics.

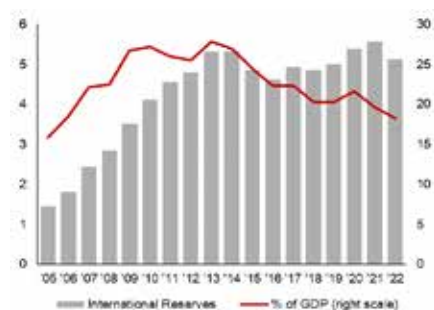


Figure 2.11. ASEAN+3: International Reserves (USD trillion; percent of GDP)

Source: National authorities via Haver Analytics.

**ASEAN+3 (ex-China) economies experienced trade diversions arising from the US-China trade tensions**

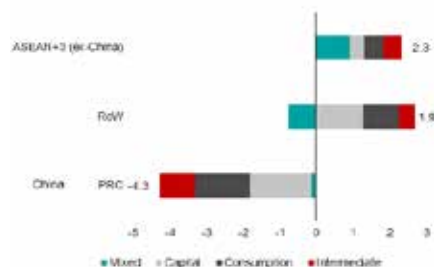


Figure 2.12. United States: Change in Share of Imports by Source and Tariffed Product Category from June 2018 to December 2019 (Percentage points)

Sources: United States International Trade Commission Dataweb; and AMRO staff estimates.

Note: RoW = rest of the world. Shares are calculated by summing the percentage point changes across the product categories.

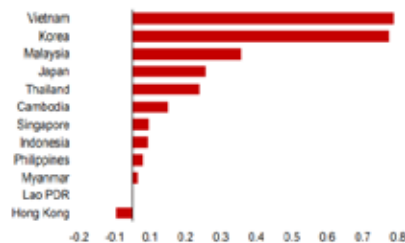


Figure 2.13. US: Change in Share of Imports by Source Economies (June 2018 to December 2019) (Percentage points)

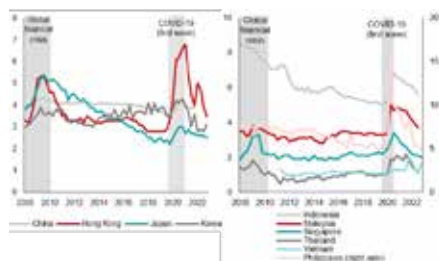
Sources: United States International Trade Commission Dataweb; and AMRO staff estimates.

Note: Brunei is not included as estimates are too small to be visible in the chart.

### 2.3 The COVID-19 Pandemic

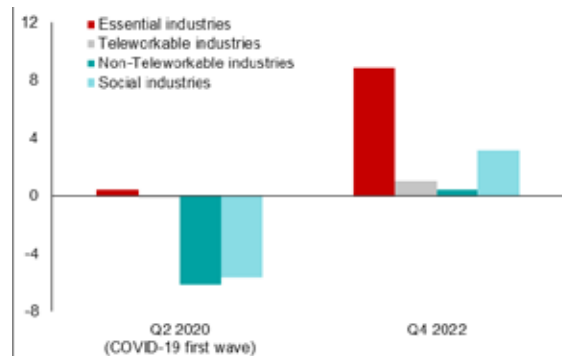
As global growth and global trade began to pick up from an extended period of sluggishness, the coronavirus (COVID-19) pandemic struck. The ASEAN+3 region was not spared the devastation, although the losses and damages vary from economy to economy, with most suffering their worst economic contraction in decades. Strict social distancing measures were taken by all the economies in the region, and for a while, these efforts were effective in containing the virus, with zero or very low caseloads in most economies, a sharp contrast to the situation in US and Europe. However, the relief from the success in containing the virus was short-lived for most economies in the region, as the virus proved to be more cunning and tenacious than expected. The stringent containment policies to contain the virus during the initial wave exacted a heavy toll on economic activities. The containment measures' impact on the labor markets was severe, as manifested in the sharp spikes in unemployment rates, falling labor force participation rates, and a drop in employment in many economies (Figure 2.14, 2.15). Similarly, mobility restrictions and border closures led to a decline in exports and a collapse in international tourism activities (Figure 2.16, 2.17). Since early 2021, with the development of effective COVID-19 vaccines, the strategy shifted to boosting vaccination rates to protect the population, while moving towards a more targeted containment measures to minimize the impact on the economy.

**The pandemic had a significant and differentiated effects on the labor market**



**Figure 2.14. Selected ASEAN+3: Unemployment Rate (Percent of labor force, seasonally adjusted)**

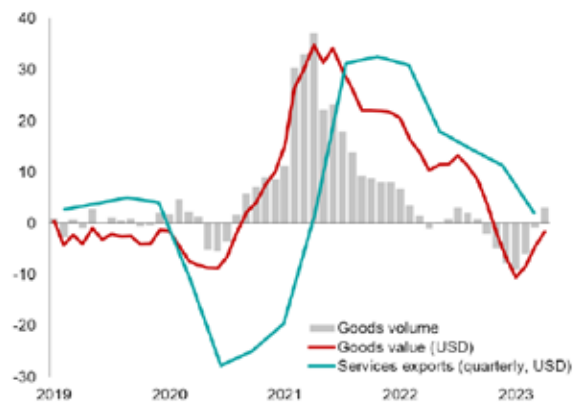
Source: National authorities via Haver Analytics.  
Note: Data are up to Q4 2022, except for China (Q4 2021) and Indonesia (Q3 2022).



**Figure 2.15. Selected ASEAN+3: Change in Employment (from Q4 2019, by Industry) (Percentage points)**

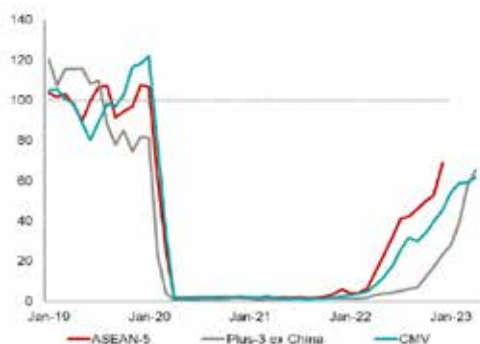
Source: National authorities via Haver Analytics; AMRO staff calculations.  
Note: Selected ASEAN+3 refers to Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. Calculations are based on seasonally adjusted employment data by industry, with series starting from Q1 2005 to Q4 2022. Essential industries refer to utilities, transport, information and communication technology, and health and public administration. Social industries refer to wholesale and retail, hotels and restaurants, and arts and entertainment. Industries where remote working arrangement is possible (i.e., teleworkable) refer to finance, professional services and education. Nonteleworkable industries refer to mining, manufacturing, and construction. Given the volatile nature of agricultural employment data, agriculture is excluded from the analysis.

**Mobility restrictions and border closures led to a decline in exports and a collapse in international tourism activities**



**Figure 2.16. Selected ASEAN+3: Export Growth (Percent, year-on-year)**

Source: National authorities; AMRO staff calculation.  
Note: Goods exports data are not available for Brunei, Cambodia, Lao PDR, and Myanmar. Services exports data are not available for Brunei and Myanmar. Goods data are up to April 2023, while services are up to Q4 2022.



**Figure 2.17. Selected ASEAN+3: Tourist Arrivals (Index, 2019=100)**

Source: National authorities via Haver Analytics; AMRO staff calculations. Note: Excludes Lao PDR due to data unavailability. ASEAN-5 = Indonesia, Malaysia, Philippines, Singapore and Thailand. CMV = Cambodia, Myanmar and Vietnam. Data are up to April 2023 for the Plus-3 (excluding China) and CMV, and up to December 2022 for ASEAN-5.

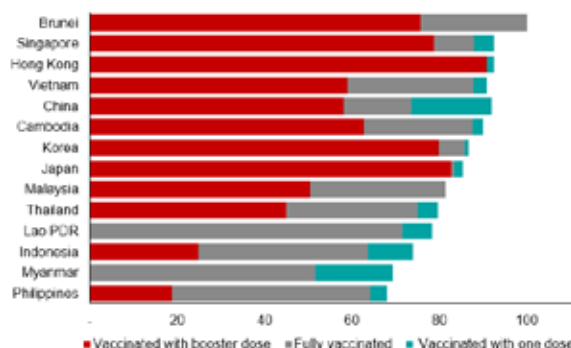
Since 2022, the region has finally gained the high ground in its long battle against the virus and could look forward to a fuller opening-up and a stronger economic recovery. In particular, the ASEAN region (Figure 2.18) grew more robustly than the Plus-3 economies in 2022, thanks to a strong rebound in domestic demand. The lifting of COVID-19 containment measures released pent-up demand, which led to a surge in consumer spending and investment. More fundamentally, high COVID-19 vaccination coverage (for both primary and booster doses) allowed ASEAN economies to stay on a reopening course despite large waves of Omicron infections in early 2023 (Figure 2.19). The reopening of borders to international tourists also helped to boost growth in tourism-dependent economies.

**High COVID-19 vaccination coverage (for both primary and booster doses) allowed regional economies to stay on a reopening course**



**Figure 2.18. Selected ASEAN+3: Real GDP Growth (Percent, year-on-year)**

Source: National authorities via Haver Analytics; AMRO staff calculations. Note: Aggregate GDP is calculated using purchasing power parity (PPP) weighted average. Selected ASEAN refers to Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. Cambodia, Lao PDR, and Myanmar are excluded due to data unavailability.



**Figure 2.19. ASEAN+3: Vaccination Coverage Status (Percent of population)**

Source: Our World in Data via Haver Analytics; AMRO staff calculations. Note: Data are up to 28 February 2023. Percent of fully vaccinated population shows the number of people who received all doses prescribed by the vaccination protocol (e.g., one dose of a single-dose vaccine, or two doses of a two-dose vaccine). In the event of discrepancy between data from Our World in Data and national authorities, data from national authorities take precedence.

## 2.4 Macroeconomic Policies

On policy developments, in view of the challenges posed by global financial cycle and the constraints on domestic policymaking, authorities in the region have come to appreciate an expanded policy toolkit. This enabled central banks and regulatory authorities in the region to adopt a comprehensive policy mix, which includes foreign exchange interventions and a suite of macroprudential policies and capital flows management measures (CFM) to shield the economy against the risks of a boom-bust cycle to complement conventional demand-side policy tools. In this respect, the ASEAN+3 stands out in the use of macroprudential policy measures, as the adoption of such policy measures were used more extensively as compared to other regions. Literature shows that ASEAN+3's pre-emptive use of macroprudential policy instruments (such as loan-to-value ratios and debt service to income ratios) have helped to stem the build-up of financial imbalances by curbing excessive credit growth and rein-in asset price inflation (IMF 2014). Similarly, CFM measures have also been used as a counter-cyclical tool to dampen the financial stability risks associated with large capital flows. In this respect, regional policymakers were successful in containing credit-, liquidity- and capital-related financial stability risks.

During the pandemic, the size and scale of macro-financial policies deployed by ASEAN+3 economies to combat the pandemic were extraordinary by any measure, benefiting from strengthened fiscal management and continued fiscal prudence. Central banks eased monetary policy and recalibrated macroprudential policies to absorb adverse shocks to financial and credit markets and support economic activity. Central banks also provided support in several other ways, including the adoption of unconventional monetary policy measures such as central bank purchase of government bonds in the primary markets, regulatory forbearance, and the targeted easing of macroprudential measures. In addition, efforts were made to secure US dollar liquidity via bilateral and multilateral swap lines or borrowings from international financial institutions, in order to offset the squeeze arising from disruptions to earnings from trade, and risk aversion toward risk assets.

As economic recovery in ASEAN+3 gained traction in 2022, the region's policymakers have largely ended the extraordinary stimulus measures introduced during the pandemic, and are shifting to restoring policy buffers. However, the outbreak of the Ukraine resulted in a sharp spike on fuel and food prices which led to a sharp increase in inflation in the region. Rising inflation and a less supportive global economic landscape have compelled the authorities in some economies to tighten monetary policy while maintaining targeted fiscal support to safeguard growth. ASEAN+3 authorities will continue to face sharp policy trade-offs and difficult policy decisions in the year ahead. A calibrated policy mix drawing on a range of policy tools, will be essential to fulfil multiple policy objectives.

In summary, the decade from 2013 to 2022 can be characterized as a time of notable global economic and geopolitical shifts, with ongoing evolution of international trade dynamics. During this period, external demand remained sluggish as major advanced economies (US and euro area) struggled to regain growth, while the ample global liquidity kept markets awash with capital, contributing to asset price inflation and heightened volatility. Given the less supportive global environment, the ASEAN+3 region experienced a shift to greater reliance on domestic demand as a growth driver, supported by increased intra-regional trade. This growing regional integration—where production, investment, consumption and export activities are increasingly undertaken within the region—in part reflects the aspiration of regional economies to work together to achieve shared prosperity, which would not only foster closer cooperation, but bolster longer-term resilience. This is the focus of the next section.

## 3. Strengthening Ties: Progress in Regional Integration and Cooperation

The various global shocks of the last decade have not only demonstrated the ASEAN+3 region's remarkable economic resilience, but in a way, these have also provided an impetus for the region's economies to work more closely together to achieve shared objectives of maintaining macroeconomic and financial stability. Despite setbacks to the multilateral global trading system and rising concerns about



economic security—from the escalation of US and China trade tension (2018-19), to the onset of the COVID-19 pandemic (beginning 2020), and thereafter, intensifying geostrategic competition and tension (2021-22)—the region’s economies have moved in the opposite direction instead, by further strengthening economic linkages and cooperation—a trend which is expected to continue. This section dissects select dimensions of ASEAN+3 regional integration and cooperation in the last 10 years.

### 3.1 Progress in Trade of Goods and Services

Across Asian subregions, the ASEAN+3 is by far the most regionally integrated when it comes to goods trade—a reflection of its key role in global value chains and its well-established production networks.<sup>4</sup> China’s rise as a key manufacturing hub—both regionally and globally—has been a powerful driving force behind ASEAN+3’s cross-border production networks, particularly for intermediate goods, and especially from ASEAN. Between 2013 and 2021, ASEAN+3’s intraregional trade share stood at nearly 46 percent, on average (Figure 3.1)<sup>5</sup> which is relatively stable compared to the prior decade. However, after peaking at 47 percent in 2017, the share has declined somewhat in recent years, reflecting the various external shocks that battered global growth and trade, notably the trade tensions between the US and China, the COVID-19 pandemic, followed by the war in Ukraine.

**The region’s trade integration has remained strong and stable in the past decade, mostly driven by closer links between ASEAN and the Plus-3**

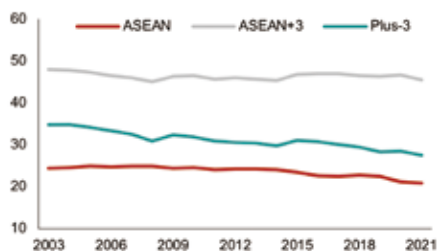


Figure 3.1. ASEAN+3: Intraregional trade in goods (Percent of total trade)

Source: Asian Regional Integration Center, Asian Development Bank. Note: Intraregional share is defined as the percentage of intraregional trade (exports plus imports) to total world trade (exports plus imports).

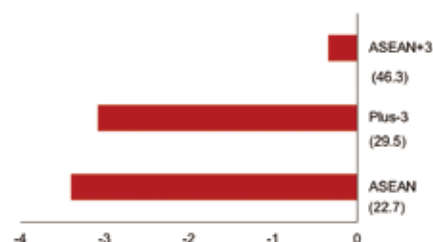


Figure 3.2. ASEAN+3: Change in intraregional trade in goods, 2003–12 versus 2013–21 (Percentage points)

Source: Asian Regional Integration Center, Asian Development Bank; AMRO staff calculations. Note: Figures in parentheses correspond to the average intraregional trade share per group over the 2013-21 period.

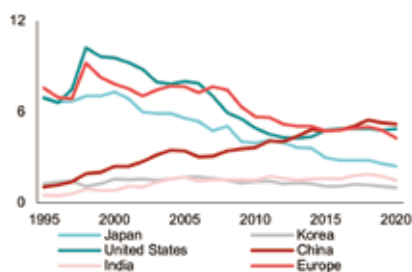
This decline is also mirrored within the region’s sub-groups, i.e., intraregional trade shares of the ASEAN and the Plus-3 have also fallen in the last decade (Figure 3.2). However, that fact that the ASEAN+3 intraregional share has not declined as much and remains higher than each sub-group’s respective shares suggests that ASEAN economies are integrating and trading more with their Plus-3 neighbours—and vice-versa. This trend is underpinned by ASEAN’s close intermediate goods trade linkages with China. Indeed, since the 2008-09 global financial crisis, China has retained its position of being ASEAN’s largest trading partner (Xinhua 2022). Moreover, there is a shift in the nature of the bilateral trade. China’s trade with ASEAN economies has been traditionally dominated by intermediate goods, with the former exporting final goods to other markets, such as the US. However, a deeper dive into the nature of these linkages—through the lens of trade in value-added shares—suggest that ASEAN-China trade is shifting towards ultimately meeting the final demand in China (Figure 3.3), helping to support the region’s growth rebalancing story (see earlier discussion in Section 2). For instance, in 2021, 20 percent of ASEAN’s total domestic value-added exports was absorbed by China, compared to only 6 percent in 2000 (Figure 3.4). There are cross-country variations, however: for seven out of the 10 ASEAN economies, China has already become

4 This is relative to five other regions: Central Asia, East Asia, South Asia, Southeast Asia, and Oceania and the Pacific (see ADB 2023).

5 Intraregional share is defined as the percentage of intraregional trade (exports plus imports) to total world trade (exports plus imports).

the single largest consumer of their domestic value-added exports, overtaking the US (mostly after the global financial crisis).<sup>6</sup> This suggests that economic growth—especially in highly open and trade-dependent regional economies—has become inextricably linked with Chinese demand and will likely become even more so, moving forward.

**The nature of ASEAN-China trade integration has slowly moved beyond intermediate goods and towards meeting final demand of Chinese consumers**



**Figure 3.3. ASEAN: Domestic value-added exports, by final demand market (Percent of regional GDP)**

Source: TiVA database, OECD; World Development Indicators, World Bank; AMRO staff calculations.

Note: The numerator refers to the domestic value added embodied in foreign final demand, which captures the value added that the ASEAN export both directly, through exports of final goods or services and, indirectly via exports of intermediates that reach China’s final consumers (households, government, and as investment) through other economies. See OECD (2023) for further explanation.



**Figure 3.4. Selected Economies: Change in share of ASEAN domestic value-added exports (Percentage points)**

Source: TiVA database, OECD; World Development Indicators, World Bank; AMRO staff calculations.

6 The US remains the single largest consumer for DVA exports of these three economies: Cambodia, the Philippines, and Vietnam. For the rest of the economies, China overtook the US in 2004 for Myanmar, in 2005 for Lao PDR, in 2009 for Brunei, in 2011 for Indonesia and Malaysia, in 2013 for Singapore, and in 2014 for Thailand.

Intraregional trade in services, while lagging behind trade in goods, has made commendable progress—averaging 40 percent share of total services trade between 2013 and 2021 (Figure 3.5). This reflects the strong foreign direct investment (FDI) flowing from the Plus-3 economies to the ASEAN, given the latter’s substantial role as a key processing and assembly site for manufactures.<sup>7</sup> However, this share has declined over time, most likely as several ASEAN economies are increasingly moving beyond simple assembly and into higher value-added segments of the manufacturing value chain—for example, design and fabrication (AMRO 2021). Of significance, the region saw an increase in travel services, benefiting from robust intraregional arrivals over the years. While travel services suffered a setback due to the pandemic, ASEAN+3’s overall services trade managed to bounce back quickly in 2021—as declining travel was offset by recovery in the goods-related and other commercial categories, which includes trade in ICT and other modern services (Figure 3.6).

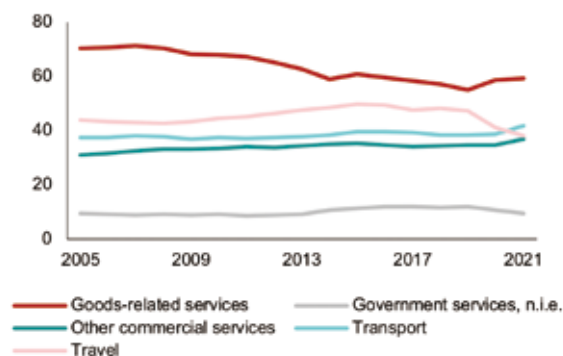
**Services trade integration—while lagging behind that of goods—has also been robust, dominated by GVC-related service activities as well as travel and transport**



**Figure 3.5. ASEAN+3: Intraregional trade in services (Percent; billions of US dollars)**

Source: OECD-WTO Balanced Trade in Services database; AMRO staff calculations.

7 Goods-related services, under the OECD-WTO Balanced Trade in Services Database cover two sectors: (1) manufacturing services on physical inputs owned by others; and (2) maintenance and repair services, not elsewhere classified. The first item covers activities of “processing, assembly, labelling, packing, and so forth undertaken by an enterprise that do not own the goods concerned.” That is, the manufacturing is undertaken by an entity that does not own the goods and that is paid a fee by the owner (Department of Statistics Malaysia 2011).



**Figure 3.6. ASEAN+3: Intraregional trade in services, by type (Percent of total exports of service type)**

Source: OECD-WTO Balanced Trade in Services database; AMRO staff calculations.

Note: n.i.e. = not include elsewhere.

### 3.2 Progress in Investment and Finance

The development of the ASEAN+3 regional production and trade network traces as far back as the 1960s–70s when developing economies opened up to attract foreign direct investments (FDI) as part of their “manufacturing for exports” growth strategy (AMRO 2021). Since then, global FDI inflows have increased rapidly into ASEAN+3 (Figure 3.7). While inward FDI from extra-regional markets began to ease in the past decade—particularly since the “taper tantrum” in 2013—intraregional FDI, in contrast, has climbed steadily. A key observation is that the rise in ASEAN+3’s intraregional FDI share significantly dwarfed the increase in its intraregional goods trade share between 2013 and 2020, with the former increasing by 11 percentage points versus less than 1 percentage point for trade (see Figure 3.1). This is likely due to ASEAN+3 manufacturers-exporters increasingly taking advantage of cost efficiencies from setting up operations close to or within their intended consumer markets in the region (as opposed to direct exports).

It is therefore not surprising that about 60 percent of ASEAN+3’s inward FDI originates from within the region, the bulk of which comes from Plus-3 economies. Intraregional inflows to the ASEAN have been historically led by Japanese multinational

enterprises, although the share of investments from China (including Hong Kong) has also risen remarkably over the years; intra-ASEAN FDI, on the other hand, has largely remained stable at around 17 percent (Figure 3.8). Most of these inflows have gone to the manufacturing sector, especially in electrical and optical equipment, metals, chemicals, and transport equipment sectors—where regional value chains are the strongest. Intraregional investments remained resilient during the 2018–19 trade tensions between the US and China but dipped in 2020 as the COVID-19 pandemic hit, notably driven by a fall in outward Japanese investments to ASEAN. Nonetheless, the region’s robust recovery post-pandemic has resumed the flow of intraregional FDI in 2023, particularly to sectors related to clean and renewable energy, digitalization, as well as “new economy” industries (AMRO 2020, AMRO 2023a).

Encouragingly, other indicators related to cross-border capital movement also suggest increasing linkages across ASEAN+3 financial markets. While still low compared to integration measures of trade and FDI, they nonetheless illustrate strong and growing intraregional interest for ASEAN+3 financial assets, driven by the region’s strong macroeconomic fundamentals and robust growth prospects. As of 2021, nearly 30 percent of ASEAN+3 total international debt issuances are held within the region, in part due to deepening and expanding bond markets in the ASEAN+3 (Figure 3.9). While this share has fallen after 2013—in the aftermath of the “taper tantrum”—it has not substantially dented the appetite for new debt issuances of the region. On equity investment, about 20 percent of ASEAN+3 total portfolio equity issuances are held by investors within the region; while slightly lower than that of bonds’, this share has risen more rapidly over the years. The Plus-3 economies are the region’s largest intraregional issuers. In terms of holdings, the ASEAN+3 region accounts for less than 20 percent of member economies’ total (debt and equity) portfolio. Interestingly, the region’s investors appear to have increasingly shifted towards holding more ASEAN+3 equity than debt over the past decade—most likely due to the ultra-low yield environment (Figure 3.10).

With the region's strong fundamentals and deepening financial markets, intraregional investment flows have remained resilient despite global shocks in recent years



Figure 3.7. ASEAN+3: Inward foreign direct investment (Billions of US dollars; percent)

Source: Asian Regional Integration Center, Asian Development Bank; AMRO staff calculations.

Note: FDI = foreign direct investment; ROW = rest of the world.

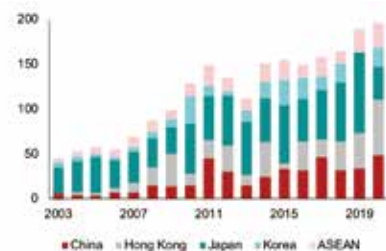


Figure 3.8. ASEAN+3: Intraregional inward foreign direct investment, by source economy (Billions of US dollars)

Source: Asian Regional Integration Center, Asian Development Bank; AMRO staff calculations.

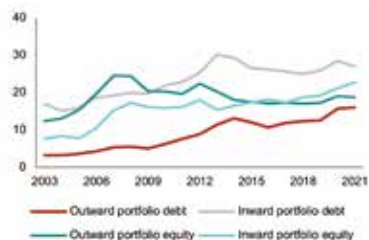


Figure 3.9. ASEAN+3: Intraregional portfolio investment (Percent of total portfolio investment)

Source: Asian Regional Integration Center, Asian Development Bank; AMRO staff calculations.

Note: Inward portfolio equity (debt) investment share refers to equity (debt) securities issued by all ASEAN+3 economies that is held by an ASEAN+3 economy, divided by the total ASEAN+3 equity (debt) security issuances. Outward portfolio equity (debt) investment share refers to ASEAN+3 equity (debt) securities held by all ASEAN+3 economies, divided by their total holdings of total equity (debt) securities.

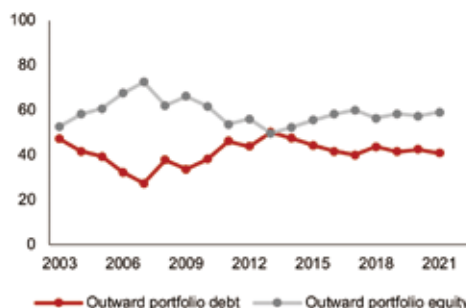


Figure 3.10. ASEAN+3: Intraregional portfolio holdings, by asset type (Percent of intraregional portfolio holdings)

Source: Asian Regional Integration Center, Asian Development Bank; AMRO staff calculations.

Note: For each year, the sum of the gray and red points is 100.

Outside capital markets, ASEAN+3 cross-border banking linkages either remain low or have not substantially risen over the years. Available data from the Bank of International Settlements (BIS) on locational banking statistics suggest that many of the region's banks (that report data to the BIS)<sup>8</sup> are lending more to counterparties outside the ASEAN+3. As a result, ASEAN+3 banks' claims on the region—as a share of their total claims—has fallen from over 6 percent in 2014 to about 3 percent in early 2023, even as the level of claims remained largely stable (Figure 3.11).<sup>9</sup> Across economies, over 30 percent of global banking claims on Thailand and China are from ASEAN+3 banks, while this is at about 20 percent in the case of Korea and Indonesia. On the other hand, ASEAN+3 banks' liabilities to the region—in terms of level and as a share of their total liabilities—have increased over the years. This suggests that while ASEAN+3 banks are lending more outside, they are borrowing more from/within the region (Figure 3.12). As of early 2023, about 40 percent of global bank liabilities owed to China are by ASEAN+3 banks, followed by about 30 percent for the Philippines.

8 BIS reporting banks from the ASEAN+3 are from China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Philippines; and Singapore.

9 Per the BIS definition, claims are “deposits and balances placed [by reporter banks] with [other] banks, loans and advances to banks and non-banks and holdings of securities and participations.” On the other hand, liabilities “mainly relate to deposits and loans received from banks and non-banks.”

However, ASEAN+3 cross-border banking linkages remain low relative to other measures of regional financial integration

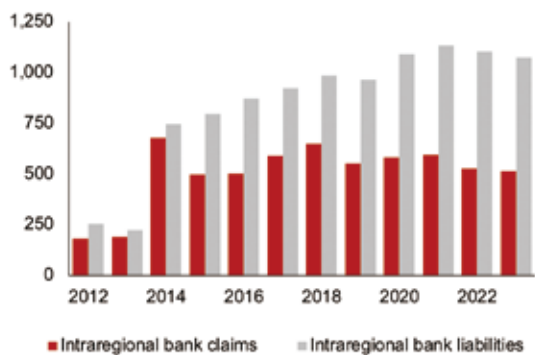


Figure 3.11. ASEAN+3 banks: Intraregional bank claims and liabilities (Billions of US dollars)

Source: Bank for International Settlements; AMRO staff calculations. Note: Data as of Q1 2023. BIS-reporting banks are from China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Philippines; and Singapore.

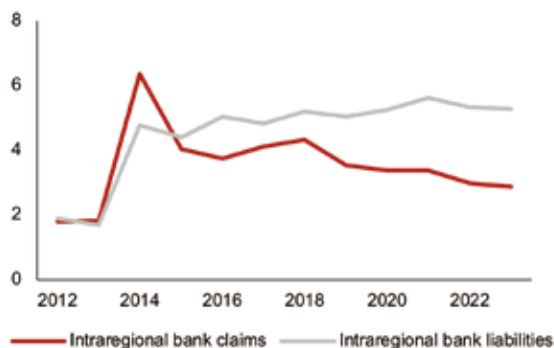


Figure 3.12. ASEAN+3 banks: Intraregional bank claims and liabilities (Percent of total claims and liabilities)

Source: Bank for International Settlements; AMRO staff calculations. Note: Data as of Q1 2023. BIS-reporting banks are from China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Philippines; and Singapore.

### 3.3 Progress in People Movement

With respect to the flow of people within ASEAN+3, it is mostly characterized by travel and tourism activities. Over the past decade (with the exception of the COVID-19 pandemic period), the travel and tourism sector grew rapidly, and became a key growth driver of

services exports in many ASEAN+3 economies (AMRO 2022). Thanks to the rapid economic growth over the past decade, the region saw the burgeoning of a large middle class, where a huge portion is accounted for by Chinese households (AMRO 2020). As a result, tourism infrastructure and ecosystems continued to expand in scale and sophistication across ASEAN+3, facilitated by a strong policy push to upgrade tourism offerings across various dimensions.<sup>10</sup>

ASEAN+3 tourists tend to start their travelling within the region when their incomes rise (Chua, Lee, and Liu, 2019). Pre-pandemic, the number of inbound tourists in the ASEAN+3 region reached 280.8 million in 2019, of which about 70 percent were from member economies (Figure 3.13). Outbound tourism by Chinese nationals to neighboring economies has grown rapidly, translating into higher tourism spending. Intraregional demand has consequently propelled the sector to become key drivers of growth for several ASEAN+3 economies including Japan, Korea, Thailand, and Vietnam.<sup>11</sup> In early 2023—amidst the slower return of Chinese tourists—intraregional arrivals (excluding China) provided a much-awaited lift to the overall service exports of the ASEAN+3. Despite the substantial damage from COVID-19, the factors underpinning intraregional tourism’s growth potential remain intact: for example, ASEAN+3’s rapid income rise and the sharp increase in soft and hard infrastructure investment across the region.

**With over 70 percent of tourist arrivals coming from within the region, intraregional tourism is a key feature of ASEAN+3 integration**

10 This included marketing, quality standards, connectivity, safety and security, natural and cultural heritage conservation, theme parks, hotels and restaurants, and other areas (AMRO 2022).

11 In the ASEAN+3, the tourism sector’s average contribution to economic activity and employment reached 11.5 percent of GDP and 12.9 percent of total employment, respectively, in 2019.

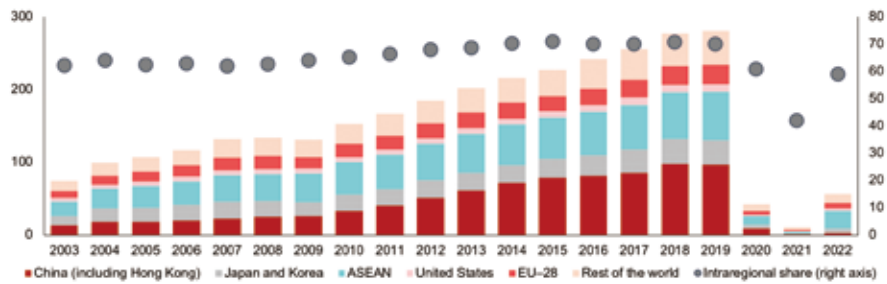


Figure 3.13. ASEAN+3: Inbound tourist arrivals, by source (Millions of people; intraregional share in percent)

Source: ASEANstats; national authorities; United Nations, World Tourism Organization; and AMRO staff calculations. Note: China’s tourist arrivals exclude arrivals from Hong Kong and Macau. China’s official arrivals data only up to 2020; 2021-22 figures are assumed to be the same as in 2020 (i.e., zero growth).

Beyond tourism, ASEAN+3 economies are also closely linked via outbound and inbound migration. In 2020, about 77 percent of the region’s migrant stock came from neighboring economies (about 30 percent were from China, followed by 15 and 11 percent from Myanmar and Indonesia, respectively), facilitated by geographical proximity, close cultural ties, remittance opportunities, as well as favorable policies towards migrant workers (Figure 3.14). However, compared to the decade before, this share has fallen. This suggests that more migrants from extra-regional countries have come to settle in the ASEAN+3, especially as more and more economic centers rise in the region (Édes 2019). Thailand and Cambodia—the top two economies most dependent on the tourism sector in the ASEAN+3—are also the top hosts for ASEAN+3 migrants; in the case of Thailand, 98.5 percent of its migrant stock in 2020 is from ASEAN+3 neighbors, followed by Cambodia (95 percent). In contrast, the Philippines and Myanmar have more inbound migrants from the rest of the world. The border closures triggered by the COVID-19 pandemic underscored the important role that migrant labor plays for several economies in the ASEAN+3, especially where demographic headwinds are strongest. Policy shifts to reattract foreign workers have increased over the past two years, further pushing up the intraregional migrant stock. Still, most intraregional migrant labor fall under the semi- and low-skilled worker category (i.e., helpers and manual laborers).

**With favorable factors—including geographical proximity and encouraging foreign labor policies—ASEAN+3 intraregional migration has also steadily increased**

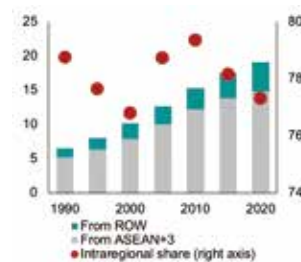


Figure 3.14. ASEAN+3: International migrant stock (Millions of people; percent of total migrant stock)

Source: United Nations Department of Economic and Social Affairs, Population Division; AMRO staff calculations. Note: Data as of mid-year of each year.

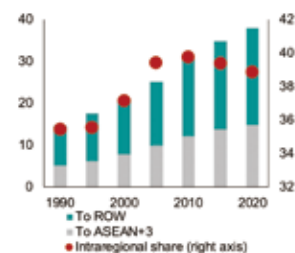
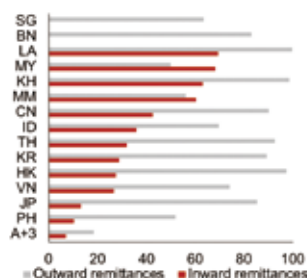


Figure 3.15. ASEAN+3: Outbound migrants, by destination (Millions of people; percent of total outbound migrant stock)

Source: United Nations Department of Economic and Social Affairs, Population Division; AMRO staff calculations. Note: Data as of mid-year of each year.



**Figure 3.16. ASEAN+3: Intraregional remittance flows, 2021 (Percent of total inward/outward remittances)**

Source: KNOMAD/World Bank; AMRO staff calculations. Note: Outward remittance data not available for Brunei and Singapore. A+3 = ASEAN+3; BN = Brunei; CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KH = Cambodia; KR = Korea; LA = Lao PDR; MM = Myanmar; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; VN = Vietnam.

Recent trends in outbound migration, on the other hand, suggest that many in the ASEAN+3 economies still prefer to go to economies outside the region (Figure 3.15). Higher income-earning opportunities in advanced economies appear to be a key push factor for ASEAN+3 migrants, especially skilled workers. In 2020, of the region’s outbound migrants (outmigrants) over 60 percent are in markets such as North America and the Middle East. Over 60 percent of outmigrants from Lao PDR, Cambodia, Malaysia, and Myanmar move to neighboring economies; in contrast, migrants from the Philippines, Japan, and Brunei migrate mostly to economies outside ASEAN+3. This is also reflected in bilateral remittances flow: the former group of economies received at least two-thirds of their total remittances from ASEAN+3 in 2021 (Figure 3.16). Overall, however, only 7 percent of ASEAN+3’s total inward remittances came from within the region. This is likely due to a combination of various factors: (1) the higher volume of outbound migrants outside ASEAN+3; (2) the lower amount of remittances per ASEAN+3 migrant worker, as well as (3) the impact of the COVID-19 pandemic. About 20 percent of ASEAN+3 outward remittances—as a share of their total outward remittances—stay within the region. Nevertheless, between 2010 and 2021, 9 of the region’s 14 economies have shown increasing shares of ASEAN+3-bound migrants to their total outmigrants, which should support future intraregional remittances in the coming years.

### 3.4 Regional Cooperation Initiatives

The ASEAN+3 region’s increasing linkages in the last 10 years, across various dimensions—trade, financial flows, as well as people movement—are, without a doubt, a by-product of the various bilateral and regional cooperation initiatives that member economies have initiated, nurtured, and enhanced over the years. All these actions—and successful outcomes thus far—attest to members’ strong commitment to ensuring regional economic prosperity and financial stability.

The past decade has seen the continued proliferation of free trade agreements (FTAs) across the ASEAN+3 (Figure 3.17). Many of the FTAs that have been signed (and now in effect) are also plurilateral in nature, rather than bilateral. These include the ASEAN-Hong Kong Free Trade Agreement (2019); the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, or CPTPP (2018); and the Regional Comprehensive Economic Partnership, or RCEP (2022).<sup>12</sup> Of note, the RCEP now constitutes the world’s largest trade bloc—and a strong testament to ASEAN+3’s commitment to free trade and openness (Hinojales and Tan 2022). Its key features—tariff reductions on over 90 percent of goods traded, a consolidated trade rulebook, and liberalization of services sectors, among others—are expected to not only create new trade and investment opportunities but also strengthen regional supply chains (Hinojales 2022). More importantly, its emphasis on promoting sustainable and digitalization-led growth is expected to bring forth even closer regional integration in terms of trade in goods and services, investments and people movement.

On the financial front, regional cooperation has likewise made giant leaps over the years. ASEAN+3 economies continue to build on and learn from past financial crises since 1997—closely collaborating

<sup>12</sup> The eleven members of CPTPP include Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam. On the other hand, as of June 2023, the RCEP is in effect across the 10 members of the ASEAN, along with China, Japan, Korea, Australia, and New Zealand.

on how to further improve economic and financial surveillance in the region, strengthen its crisis management capabilities and safety nets, and foster the development of local currency bond markets (Khor, Guinigundo and Kawai, eds., 2022). For example, the Chiang Mai Initiative Multilateralisation (CMIM) Agreement—a multilateral currency swap arrangement for liquidity support among ASEAN+3 members—came into effect on March 2010 with an initial size of USD120 billion.<sup>13</sup> The ASEAN+3 Macroeconomic Research Office, or AMRO, was established in the following year to conduct macroeconomic surveillance of the regional economies and support the implementation of this regional financial arrangement. Since then, the CMIM has further been strengthened—in 2014, the size of the facility was doubled to USD240 billion, and in 2021, members amended the CMIM agreement to institutionalize the use of local currencies, in addition to the US dollar (AMRO 2023b). In addition to the CMIM, ASEAN+3 intraregional bilateral swap arrangements (BSAs) have also grown in size and number (Figure 3.18). The expansion in ASEAN+3 BSAs—90 percent of which involve local currencies—tend to take place in economies where trade and financial linkages are already established. For example, intra-ASEAN swap lines focus on facilitating local currency settlements in trade and investment, while Japan-ASEAN swaps are mostly designed to support financial stability and short-term liquidity needs (Han and Lulu, 2022).

**Strong commitment to free and rules-based trade, and regional financial stability are key driving forces of ASEAN+3 regional integration**

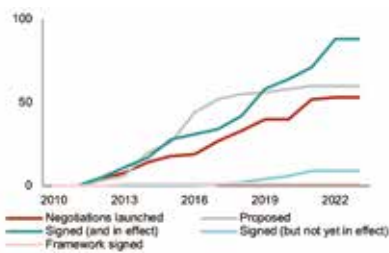


Figure 3.17. ASEAN+3: Free trade agreements, by status (Cumulative number since 2010)

Source: Asian Regional Integration Center, Asian Development Bank; AMRO staff calculations.  
 Note: “Proposed” includes those that are under consultation and study.

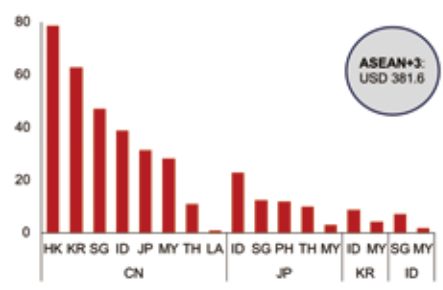


Figure 3.18. ASEAN+3: Intraregional bilateral swap arrangements, as of February 2022 (Billions of US dollars)

Source: Han and Lulu (2022); AMRO staff calculations.  
 Note: Swap arrangements are made between institutions, for example the central bank of economy A with finance ministry of economy B. CN = China; HK = Hong Kong; ID = Indonesia; JP = Japan; KR = Korea; LA = Lao PDR; MY = Malaysia; PH = Philippines; SG = Singapore; TH = Thailand; VN = Vietnam.

The Asian Bond Markets Initiative—or ABMI—is another ASEAN+3 initiative, supported by the Asian Development Bank, that aims promote bond market development in the region. The ABMI has supported not only the growth of the overall ASEAN+3 market size, but has also improved the functioning and liquidity of the local currency bond markets—allowing issuers and investors alike to benefit from more reliable yield curves, longer bond maturities, wider range of benchmark issues, and a bigger pool of bond types (Yamadera 2022). These initiatives—and many others—are continuously being enhanced by members, along with the exploration of new regional financial arrangements (RFAs) that would further fortify the region’s resilience against new and emerging risks—like new pandemics and climate change (Hinojales and Tan 2023).

Going forward, as the region embarks on its next stage of development in the post-pandemic era, intraregional integration is expected to advance further, building on the progress achieved over the past decade. It is critical for ASEAN+3 economies to continue in the strengthening of intraregional links, deepening of economic integration, and expansion of

13 The CMIM’s core objectives are to: (i) address balance of payment and/or short-term liquidity difficulties in the ASEAN+3 region, and (ii) supplement existing international financial arrangements (AMRO 2023b).



areas of cooperation, to ensure that the region remains resilient and regional development is shared more broadly to all economies in the region.

#### 4. Prospects Ahead: Outlook for the Region and Long-Term Challenges

The preceding two sections underscore the remarkable resilience of ASEAN+3 region in weathering the various challenges in the past decade. Such resilience is once again demonstrated when aggregate economic activities in the region registered a flat growth at the height of the COVID-19 pandemic in 2020, and grew robustly when economies reopened their economies. The resilience is strongly anchored in the region’s progress in strengthening regional cooperation despite a less favorable global backdrop. In the period ahead, prospects for ASEAN+3 will hinge on the region’s cohesiveness and capacity to leverage on the collective strengths of the individual economies to navigate the headwinds and challenges in the post-pandemic landscape—headwinds that can derail the region’s economic recovery and destabilize the financial system. At the same time, the region is also confronted with longer-term structural challenges (such as an aging population, climate change and geoeconomic fragmentation) that would inevitably shape the future macro-financial stability in the region. Addressing such challenges would be crucial, not only to prevent exacerbating pandemic-induced economic scars, but also to safeguard the region’s growth potential in the next decade.

##### 4.1 Macroeconomic Outlook

Looking ahead, the ASEAN+3 region is projected to grow on average by 4.5 percent in 2023-2030<sup>14</sup>, a deceleration from an average growth of 5.3 percent in the past seven years from 2012-2019 (Figure 4.1). The slower growth is mainly on account of the expectation of a more challenging external environment, although this is partly offset by continued strength of domestic demand and support from intraregional demand. In the near- to medium-term, external demand is

likely to be less robust as growth in major advanced economies is expected to remain weak amid tighter monetary conditions. At the same time, global inflation is expected to remain elevated as commodity prices—especially agricultural food prices—remain higher than pre-pandemic levels, weighing on households discretionary spending. Uncertainty over the duration of monetary policy tightening cycle in the US and the potential misalignment of market expectations vis-à-vis Fed policy could also contribute to heightened global financial market volatility. The heightening of geostrategic competition amid concerns about national security could weaken existing highly integrated global value chains. Over the longer term, despite the weaker external environment, domestic demand will remain an important growth driver for the region, supported by the growing middle class in many of the economies in the region. As discussed in Section 3, some of the key trends, such as the intraregional integration in trade, services, investments and labor, would continue to strengthen, offsetting the effects of weaker global growth. Consequently, ASEAN+3 is forecast to return to its pre-pandemic trend by the end of 2030 (Figure 4.2).

**ASEAN+3 will grow at a slower pace in this decade, but output should recover to pre-pandemic trend before 2030**

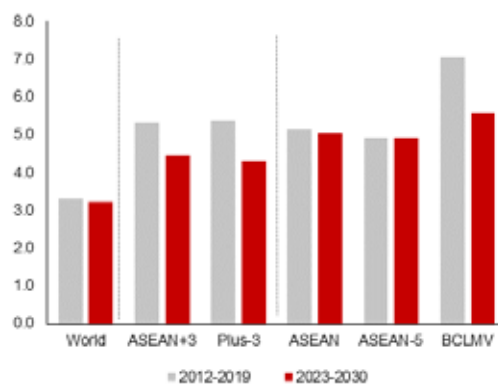
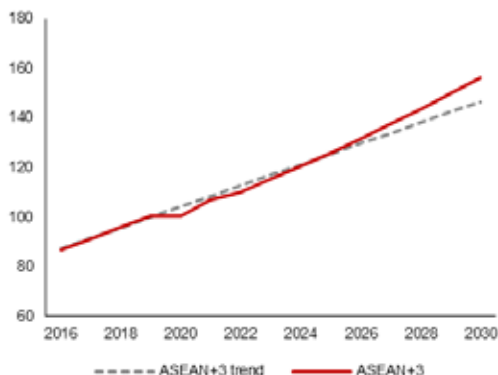


Figure 4.1. World: Real GDP Growth on PPP Basis (Percent; year-on-year)

Source: National authorities via Haver Analytics, Oxford Economics, and AMRO staff calculations  
Note: Real GDP is forecast in local currency and converted to PPP.

<sup>14</sup> Growth for ASEAN+3 economies in 2023-2024 are AMRO’s forecast, while growth for other economies and for 2025 onwards incorporate staff’s judgement on projections by Oxford Economics



**Figure 4.2. ASEAN+3: Real GDP on PPP Basis (Index, 2019=100)**

Source: National authorities via Haver Analytics, Oxford Economics, and AMRO staff calculations

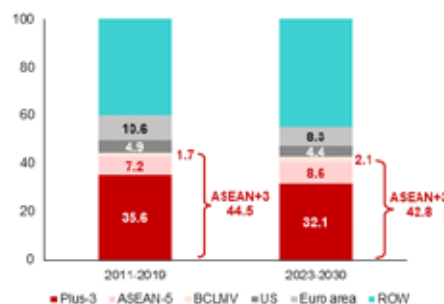
Note: ASEAN+3 trend refers to the pre-pandemic trend line, estimated for 2010-2019.

In the upcoming decade, ASEAN+3 will remain a major driver of global growth, contributing to 43 percent of global growth, slightly below the pre-pandemic average of 45 percent (Figure 4.3, 4.4). This growth trajectory will predominantly be driven by the Plus-3 economies, contributing three-quarters of this growth. China is expected to continue playing a central role in driving this expansion, despite an expected deceleration in its economic growth to 4.5 percent, lower than its 7.7 percent average in the decade following the global financial crisis. This slowdown can be attributed primarily to unfavorable demographics and a deceleration in productivity (IMF 2023). Japan's growth is forecast to remain sluggish due to the ongoing challenges posed by an aging population. Meanwhile, Korea would grow at a more moderate pace due mainly to slower global demand.

Within the ASEAN region, the ASEAN-5 economies (Indonesia, Malaysia, Singapore, Thailand, and the Philippines) will continue to anchor growth, contributing on average 9 percent to the global growth in 2023-2030. The momentum will primarily be led by Indonesia, given its sizable domestic population. Growth is expected to be underpinned by private consumption, while investment is expected to expand at a more moderate pace as the slower growth in the advanced economies weighs on foreign direct investment. The

Philippines is well-positioned to benefit from its youthful demographic and sustained infrastructure investments. Both Malaysia and Singapore will see their growth firmly supported by household spending and private investment.

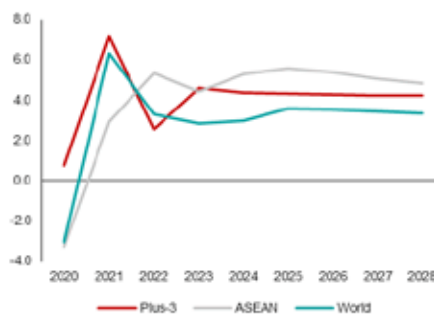
**ASEAN+3 is projected to continue being a major driver of global growth, both the Plus-3 and ASEAN regions are expected to grow faster than the global economy**



**Figure 4.1. World: Real GDP Growth on PPP Basis (Percentage point contribution; year-on-year)**

Source: National authorities via Haver Analytics, Oxford Economics, IMF WEO July 2023, and AMRO staff calculations

Note: Real GDP is forecast in local currency and converted to PPP.



**Figure 4.2. World: Real GDP Growth on PPP Basis (Percent year-on-year)**

Source: National authorities via Haver Analytics, Oxford Economics, IMF WEO July 2023, and AMRO staff calculations

Note: Real GDP is forecast in local currency and converted to PPP.

Growth of the BCLMV (Brunei, Cambodia, Lao PDR, Myanmar, and Vietnam) economies is expected to pick up gradually, expanding by an average of 5.2 percent per year. These economies are thus poised to account for a larger share of the world economy by the

end of the next decade (Figure 4.5). After navigating the pandemic adeptly, the recovery in domestic investment and resumption of tourism should boost growth in Brunei and Cambodia. Growth in Lao PDR will be supported by natural resource exports and infrastructure investment. Although existing structural weaknesses may constrain growth (World Bank 2023). Growth prospects for Myanmar will continue to be clouded by the political situation which has dampened investment. However, assuming the political impasse is resolved, growth will recover to pre-pandemic level led by a rebound in investments and exports.

**ASEAN’s share of the global economy to increase, partially offsetting the moderation in Plus-3’s share**

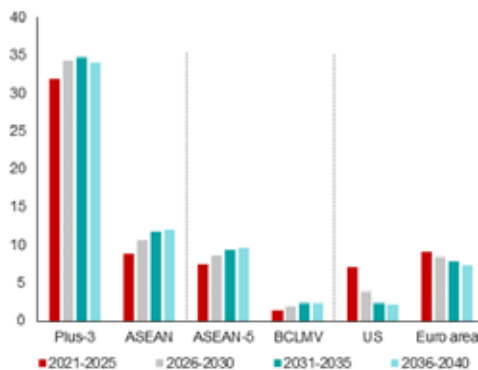


Figure 4.5. World: Real GDP by Key Regions (Percent share of world GDP)

Source: National authorities via Haver Analytics, Oxford Economics, and AMRO staff calculations

Note: Real GDP is forecast in local currency and converted to PPP.

**4.2 Outlook for Regional Integration and Cooperation**

A key feature characterising the outlook for the ASEAN+3 region, supporting its continued positive development prospect is the expectation of continued regional integration and cooperation. Regional integration is likely to strengthen further in the decade ahead. While the speed of regional integration could be slower than in the previous decade—as geopolitical tensions bring forth policy uncertainty and populist pressures trigger protectionist policies in some advanced economies—the catalysts for closer

economic and financial linkages in the ASEAN+3 region remained intact.

In the post-pandemic era, closer cooperation and deeper integration across several priority areas will magnify the ASEAN+3 region’s ability to achieve sustainable long-term growth. To invigorate economic growth in the decades ahead, ASEAN+3 key priorities for regional integration and cooperation should include (1) improving logistics interconnectivity and integration; (2) strengthening regional supply chain security; (3) advancing regional digital transformation and integration; and (4) enabling real-time cross-border payments and settlements. These initiatives would go a long way to bolstering resilience in ASEAN+3.

Enhanced logistics interconnectivity—to help facilitate goods and services trade—is a must for the region to take advantage of global demand that is increasingly shifting towards the ASEAN+3. The emergence of the ASEAN+3 middle class—along with the rise of “Shopper Asia”—means that the region’s exporters will increasingly be catering to this rapidly expanding market for consumer products and services. With proximity to consumers—a key consideration for FDI locational choices—ASEAN+3 FDI is also likely to stay within the region. Besides meeting regional demand, multinational enterprises from the Plus-3 economies seeking to build supply chain resilience—learning from the lessons of COVID-19—and navigate the complex geopolitical landscape are also increasingly pivoting towards the ASEAN. More Chinese firms are investing in ASEAN to manage geopolitical risks, reduce costs, and take advantage of preferential tariffs in existing FTAs (Chua and others, 2023). Elsewhere, Japanese firms moving production to ASEAN are eligible for government subsidies, while Korean firms are also encouraged to move in the same direction through the government’s “New Southern Policy.” These current trends point to closer ASEAN+3 investment and financial linkages in the future—while at the same time, strengthening supply chain security—and encourage more movement of migrant labor. Intra-regional migration and remittances will particularly benefit from Plus-3 economies—beset with shrinking working age populations—shifting more segments of their operations to economies in the region with more

youthful populations (Oros 2023).

The ASEAN+3 region can strengthen its linkages and overall growth potential by leveraging on the power of digitalization and digital integration. While its role was not as pronounced in the previous decade, digitalization will be a key driving force of ASEAN+3 regional integration moving forward. The COVID-19 pandemic, which accelerated the “flight to digital,” has resulted in a boom in e-commerce and other digital services that are easily tradable across borders. The ASEAN Agreement on Electronic Commerce—which came into effect in 2021—should facilitate more cross-border transactions and advance the use of e-commerce across ASEAN economies. This will allow them to catch up with their Plus-3 peers—in areas of cybersecurity, data protection, and digital identities, for example—which should further boost region-wide digital and economic integration. Digitalization should also facilitate higher intra-ASEAN+3 goods trade—electronic platforms and e-documents are key to simplifying lengthy, paper-based customs procedures, while smart technologies will further improve logistics interconnectivity across the region (AMRO 2022). These forces should create positive spillovers to ASEAN+3 financial integration through the development of real-time cross-border payment and settlement infrastructure, especially as an efficient and interoperable regionwide payment network would have to be developed in parallel by the region's economies to fully maximize the potential of cross-border trade and e-commerce.

Lastly, as the region's growth and development trajectory are premised on its ability to manage the rising risks from climate change (see Section 4.3), ASEAN+3 economies need to also work collectively towards a shared, long-term climate change vision and strategy, through increased cooperation in areas

such as cross-border energy trade, innovation and new technologies, and green financial networks (AMRO 2022, AMRO 2023a).

#### **4.3 Long-Term Challenges**

Notwithstanding promising growth prospects, the ASEAN+3 region faces a multitude of long-term challenges that could undermine its development without commensurate policy responses. In this paper, we briefly highlight two salient structural challenges for the region – aging population and climate change. A complete treatment is beyond the scope of this paper, but in the following segment, we provide broad outlines of these two challenges.

The ASEAN+3 region currently stands on the cusp of significant demographic shifts. All the economies of the Plus-3 are already experiencing declining population. In the next decade, five of ASEAN+3 economies would become post-aged (or super-aged) societies, with more than 20 percent of the population above the age of 65 (Figure 4.3). ASEAN+3 economies that are not aged yet are also aging at a faster rate than before (Figure 4). Only Cambodia, Myanmar and the Philippines are aging at a slower pace due mainly to their higher fertility rates. As the population ages, there are multifaceted economic implications to consider, with ramifications for fiscal policy, labor markets, and growth prospects.

A primary concern stemming from an aging population is the decline in the labor force. With fewer people entering the workforce and a rising number of retirees, there is likely to be labor shortages in various sectors, reducing the competitive advantage in labour-intensive industries that some ASEAN+3 economies have historically enjoyed. This will lead to a reduction in the potential growth rate unless there is commensurate increase in total factor productivity growth.

### Most ASEAN+3 economies are aging rapidly

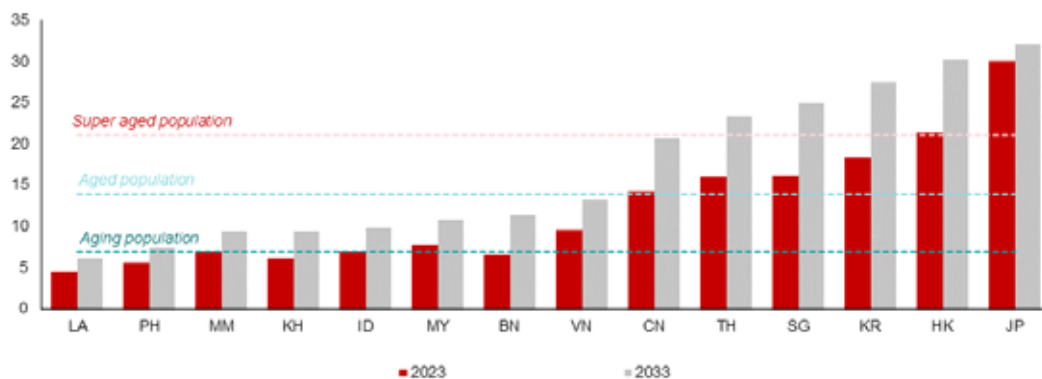


Figure 4.3. ASEAN+3: Population Aged 65 and Above (Share of total population)

Source: UN World Population Prospects: The 2022 Revision

Most aging regional economies will become “aged” faster than Japan, and every regional economy would have fewer working persons to support each dependent going forward

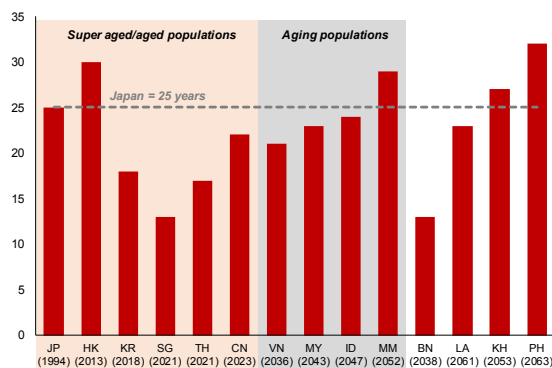


Figure 4. ASEAN+3: Time Taken to Transition from Aging to Aged Population (Years)

Source: UN World Population Prospects: The 2022 Revision

Note: Aging population is defined as a population where those aged 65 and above constitute at least 7 percent of the population, while an aged population is one where the population of 65 and above constitute at least 14 percent of the population. Figure in parenthesis refers to the year that each economy is expected to turn into an aged population.

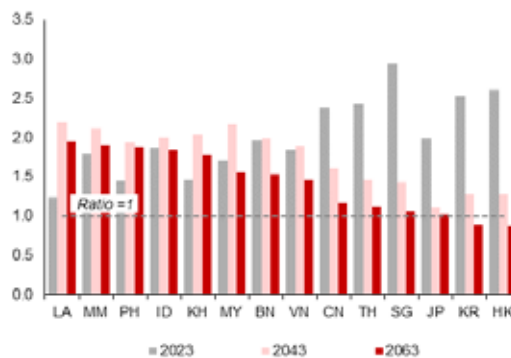


Figure 5. ASEAN+3: Inverse Dependency Ratio (Ratio)

Source: UN World Population Prospects: The 2022 Revision

Note: The inverse dependency ratio estimates the number of independent workers needed to provide for one dependent—either a child or an elderly.

In addition, aging populations also invariably put pressure on public finances. There is an increased demand for healthcare services, pensions, and other elderly care facilities. For economies in ASEAN+3 with less developed social safety nets, this means significant reforms are needed, not only to ensure the welfare of their aged population but also to prevent fiscal

imbalances. Sustainable pension systems, healthcare funding models, and long-term care facilities become pivotal in this demographic context. For example, the additional fiscal costs for health care spending in 2032 compared to 2022 are estimated to range from under 1 percent of GDP (in China, Japan, and Thailand) to over 2 percent of GDP (in Hong Kong, Korea, and Singapore) (AMRO 2023c). The impending demographic shifts in the ASEAN+3 region present challenges that necessitate proactive policymaking. Adopting strategies that promote labor productivity, such as investing in automation and upskilling the workforce, can help offset the potential slowdown from a shrinking labor force. Furthermore, reforms in pension and healthcare systems, combined with fiscal measures to support these reforms, are essential. Encouraging higher participation of women and older individuals in the workforce, and perhaps even immigration reforms, can also serve as part of a broader strategy to address the challenges posed by an aging population.

On climate change, ASEAN+3 economies face significant physical and transition risks, which will have significant implications on future development prospects. In terms of physical risks, several ASEAN economies—Myanmar, the Philippines, Thailand, and Vietnam—were among the 10 economies in the world with the highest fatalities and economic losses due to weather-related disasters between 1999 and 2018 (AMRO 2021). In terms of transition risks, climate change mitigation—long envisioned as a gradual process of reducing greenhouse gas (GHG) emissions in the world’s most carbon-intensive economies—has now become an urgent global imperative.

The accelerated transition to a carbon-neutral economy will have major macroeconomic implications in the medium term. Responding to both physical and transition risks will require a transformation of how the ASEAN+3 region produces, consumes, and allocates existing resources. Currently, some ASEAN+3 economies are assessed to be among those that are least resilient to climate change (Figure 4.6). Climate change responses will demand an increase in public and private investment, impacting economies’ macroeconomic fundamentals one way or the other.

For example, putting an appropriate price on carbon emissions—key to climate change mitigation—will drive up the price of fossil fuel energy and could potentially affect export competitiveness in the ASEAN+3 region, trigger an accelerated obsolescence of existing capital stock, and even stunt economic growth unless it is offset by higher investment in green energy (Figure 4.13).

**Significant GDP impact and low adaptive capacity against climate change for most ASEAN economies**

Economy	Rank			Overall rank
	GDP impact	Extreme weather Dry index	Wet index Adaptive capacity	
Finland	Green	Green	Green	1
Switzerland	Green	Green	Green	2
Japan	Light Green	Light Green	Light Green	11
Korea	Light Green	Light Green	Light Green	20
Hong Kong	Light Green	Light Green	Light Green	25
Singapore	Light Green	Light Green	Light Green	39
China	Light Green	Light Green	Light Green	41
Thailand	Light Green	Light Green	Light Green	44
Philippines	Light Green	Light Green	Light Green	46
Malaysia	Light Green	Light Green	Light Green	47
Indonesia	Light Green	Light Green	Light Green	48

Figure 4.6. Selected Economies: Climate Economics Index (Rank, out of 48 economies)

Source: Swiss Re Institute, “The Economics of Climate Change: No Action Not An Option”, April 2021  
 Note: The greener the color, the higher the rank, while the redder the color, the lower the rank.

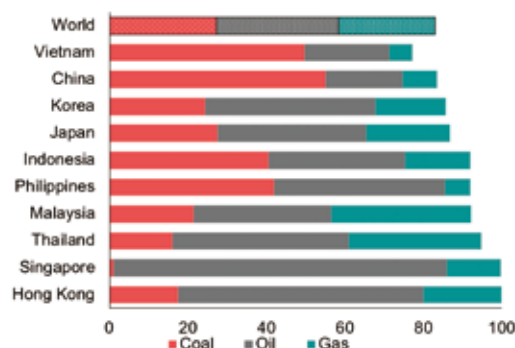


Figure 4.7. ASEAN+3, World: Fossil Fuels in Primary Energy Consumption, 2021 (Percent of total primary energy consumption)

Source: BP Statistical Review of World Energy 2022; AMRO staff calculation.

The risks of climate change and natural disasters could spill into the financial system, potentially magnifying its impact on the real economy. With more frequent, intense, and widespread disasters, ASEAN+3 banks could face rising credit defaults as businesses are affected and collateral values are eroded, eating into their capital. Balance sheets of insurers and reinsurers would become actuarially unsound, resulting in a sharp rise in insurance costs, and further stressing the households and businesses. As investors increasingly tilt their portfolios toward clean and green investments, any disorderly and uncoordinated pullback from existing fossil fuel projects in ASEAN+3 economies could put billions of US dollars of assets across the region at risk of being stranded—yet again highlighting the financial stability risks from climate change.

In summary, the ASEAN+3 region's growth is projected to moderate to an average of 4.5 percent between 2023 and 2030, down from the previous decade's average of 5.3 percent. In the near-term,

weak global growth, especially in major advanced economies, elevated global inflation, and geopolitical uncertainties are expected to dampen growth. Despite this, domestic demand will remain a significant growth driver, with ASEAN+3 economies returning to pre-pandemic trends by the end of 2030. The region is projected to contribute 43 percent of global growth over the next decade, led by Plus-3 economies, with China playing a central role, despite its growth slowdown. Within ASEAN, the ASEAN-5 economies will anchor growth, while BCLMV economies are set to recover to their pre-pandemic growth rates. The ASEAN+3 region is poised to strengthen regional integration, focusing on goods, services trade, and digitalization. Long-term challenges, including an aging population and climate change, require forward looking planning to ensure fiscal sustainability and economic stability. The region's ability to address these challenges and maintain cooperation and integration will be vital for achieving sustainable long-term growth.

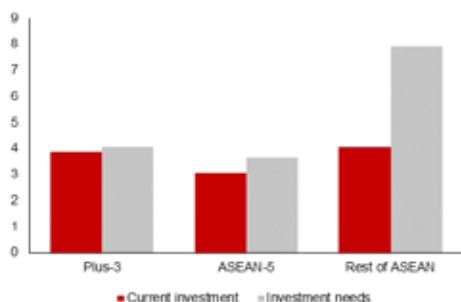
### The Future of ASEAN+3 and the Belt and Road Initiative (BRI) in Context<sup>15</sup>

The economies of the ASEAN+3 region have experienced remarkable economic development and dynamism and are expected to continue to do so as we move into the next decade. Nonetheless, as discussed in Section 4, the region faces a growing number of longer-term challenges, requiring continued investment in key infrastructure. However, there remains significant underinvestment in infrastructure, particularly for the middle- and lower-income economies in ASEAN. This infrastructure gap persists even when economic growth is expected to recover and income convergence towards advanced economies quickens (Figure A). It is important to note that the manufacturing-for-export strategy, a key growth driver for many ASEAN economies, requires continuous large-scale investments, particularly in infrastructure supporting these exports. In addition, the COVID-19 pandemic has highlighted the shortfall in many economic and social infrastructure needs for the region. Furthermore, the increased urgency on addressing climate change would require considerable investments in infrastructure for mitigation and adaptation.

According to the Asian Development Bank (ADB), the projected infrastructure needs for the next two decades in Southeast Asia will be around 5.7 percent of the GDP annually, an amount exceeding the financial resources of most individual economies in the region. Despite the potential of fiscal reforms to bridge part of this gap as well as an increase in the role of the private sector, it is unlikely to be sufficient without external support. In addition, the region's infrastructure financing gap is sizeable and uneven, exacerbated by various challenges like savings-investment gaps in low-income economies and a lack of supportive ecosystems for infrastructure development in middle-income ASEAN economies.

<sup>15</sup> This section summarizes the paper on Belt and Road Initiative: A Framework to Address Challenges and Unlock Potential for High-Quality and Inclusive Growth (Khor et al, 2019).

**Infrastructure gap is the highest for developing ASEAN economies;  
BRI-related investment is an increasingly important driver of China's outward investment**



**Figure A. Selected ASEAN+3: Infrastructure Gap (Percent GDP, Average from 2023-2032)**

Source: Global Infrastructure Hub  
Note: Rest of ASEAN refers to Cambodia, Myanmar and Vietnam. Brunei and Lao PDR are omitted due to data unavailability.

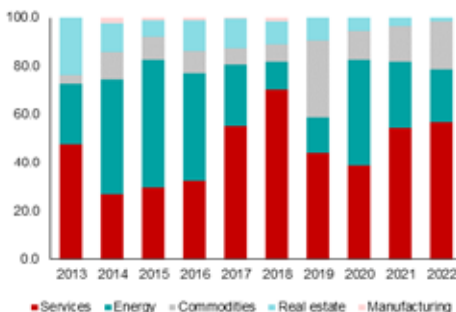


**Figure B8. China: Direct Investment Abroad (USD billion)**

Source: National authorities via Haver Analytics

In light of this, China's Belt and Road Initiative (BRI) could play a role in bridging the infrastructure gap in the region. BRI investments have accelerated in the region since 2019 with the investments in Asia becoming increasingly diversified (Figure B and C). The BRI's objectives to enhance connectivity, stimulate cross-border trade and investment, and fill large infrastructure gaps can provide regional economies with opportunities for financing, adding momentum to infrastructure development while generating positive network effects. In the context of climate investment, in response to climate concerns, an increasing number of BRI projects have incorporated environmental considerations, albeit to varying degrees depending on each project. This would further promote the attractiveness of the BRI in financing green infrastructure, such as climate adaptation infrastructure such as flood protection and coastal defence measures in the region. Similarly in the health sector, regional economies could leverage on BRI projects that are targeted at developing healthcare infrastructure facilities, or those that targets medical equipment and technology transfers.

**BRI investments have become more broad-based over time**



**Figure C. East Asia: Investment and Construction under the Belt and Road Initiative (Percent share of BRI investments)**

Source: China Global Investment Tracker



However, to make more substantial contribution, the BRI could address some core concerns that have been raised in recent years. These include concerns about BRI partner economies investing in non-viable projects and potentially falling into debt traps, losing control over strategic assets with geopolitical implications, as well as the limited local value-add from BRI projects. These concerns in a way reflect the mismatch of expectations between the investing country, China, and the host economies. However, past development experiences, including those within the ASEAN+3 region, suggest that such a mismatch of expectations is not insurmountable<sup>16</sup>. As long as there are substantial economic benefits to be gained over the long term, it is in the interest of both China and the partner economies to work out an approach that addresses the concerns and safeguard the interests of both parties.

One such possible approach could draw upon three main principles: identifying challenges, shaping sound governance, and using the experiences of successful projects to spur the further development of the BRI. Such a three-pronged approach can help to further develop and sustain BRI going forward. Past BRI projects—including those within the region—have highlighted the need to carefully address the concerns of economic viability and debt sustainability, as well as comprehensive prioritization in infrastructure development and the meticulous handling of operational issues. This requires a robust and coherent governance framework with clearly defined roles for all stakeholders, including key international organizations to guide project assessment, debt sustainability analyses, and risk mitigation measures, pool resources, unlock financing and diversify risk, and to establish the rules of engagement.

Lastly, ASEAN could serve as a testbed to implement, refine, and demonstrate the effectiveness of BRI projects. The high degree of integration and complementarity among ASEAN economies and China, coupled with the ASEAN Economic Community's development initiatives, can provide fertile ground for achieving maximum impact. Successful outcomes in ASEAN are not only beneficial for the region in addressing its infrastructure needs, but they can also serve as models for other BRI projects globally.

## 5. Conclusion

In conclusion, over the past decade following the global financial crisis, the ASEAN+3 region has achieved remarkable strides in economic development, despite navigating a more complex global landscape. In this period, the region has assumed the key role in driving global growth, while demonstrating remarkable resilience in the face of multiple global shocks. Favorable fundamentals, such as the rapid pace of urbanization and the emergence of a large

middle class amid growing affluence, have contributed significantly to the region's growth rebalancing, where domestic demand has emerged as a key growth pillar reflecting a rapidly rising middle class. Advances in regional integration, particularly between ASEAN and Plus-3 economies, have provided the added growth impetus, reflecting the remarkable progress in regional cooperation in trade, investment and finance over the past decade.

Building on this momentum, the ASEAN+3 region is poised for sustained growth in the upcoming decade, a trajectory supported by the continued strength in regional domestic demand. As the region witnesses a rapidly growing middle class, urbanization trends, and continued structural transformation, domestic consumption and investment are set to be even more important drivers of growth. The pivotal role of regional

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<sup>16</sup> Drawing parallels between the BRI and Japan's outward direct investments (ODI) in ASEAN in the 1970s to 1990s is insightful. Japan's ODI, despite initial criticisms, managed to align interests on both sides, resulting in win-win situations. Japan's initial financial aid programs were criticized for being tied to the use of Japanese contractors and procurement of Japanese goods. However, with changes in policies and practices, Japan's financial aid program has been well received.

integration cannot be understated. Deepening ties, particularly between ASEAN and the Plus-3 economies, not only bolster trade and investment but also enhance cross-border connectivity and strengthen people-to-people connections. Closer regional integration enhances resilience against external shocks and act as amplifiers for regional prosperity.

Notwithstanding, the region would need to contend with longer-term challenges which are becoming increasingly more pressing. Addressing these multi-year challenges such as population aging and climate change would indeed be challenging, as it would require a fundamental shift in how economies allocate existing resources, including for infrastructure investment. In this context, the BRI could help to fill the large infrastructure gap in the region. Such positive development is welcome and would serve well to bridge the large infrastructure gap in the region in the next decade.

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# The “Belt and Road Initiative” — The Bridge For China–Latin America and The Caribbean Economic Relations –A Historical Perspective

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The world’s economic center of gravity has shifted away from developed economies towards emerging economies during the past two decades. At the center of this phenomenon are the Asian Economies, especially China and the Latin America and the Caribbean countries (LAC). These changes in the global dynamics were based on three pillars – trade, investment, and financial flows as it expanded its economic interests across Asia, Latin America, and the Caribbean continents. The ties between Latin America and China are now evolving well beyond just trade, investment and financial flows, challenging Latin American countries to adopt specific reforms to boost inclusive growth and build a mutually beneficial partnership with China.

Our relations have been constructed on a very positive agenda in which economic, social, and political cooperation have been the main pillars.

When we analyze the historical cooperation between China and LAC countries, we will only find a

few texts showing how this relationship has evolved through the centuries. We can say that this relationship has started way before the region of Latin America could have its national states formed. If, for instance, we evoke the historical formation of the “the American Continent” we can see that what we call today Great China had a significant role in the discovery of the America Continent.

The first attempt of economic relations between the Europeans and “Zhong Guo” resulted in the discovery by fortune mistake of a New Continent – The Americas. While the Spanish and Portuguese colonizers travelled around the Globe with their fleet searching for trade opportunities especially trying to get to the so-called, by that time, India’s Region (China and India) they have arrived in the America Continent and have discovered the Latin America and the Caribbean regions by 1492-1500. By that time, the European colonizers have heard histories of the Chinese Traders such as Zhang Qian who helped to establish the Silk Road more than 2000 years ago and Zheng He who, under the vision of Zhu Di Emperor Son of Heaven, had commanded of one of the largest fleets in the world and had left the “ Zhong Guo”, the Middle Kingdom, in 1403, to travel across Southeast Asia, India, Arabia and Africa for doing trade and presenting the potentialities of his country.

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After the discovery of the America Continent, relying on Sino-Latin American historians that claim that as far back as 1565 we had a very prosperous trade route, when the “silk road of the sea” saw 20 to 60 ships sailing between China’s coastal regions and Mexico’s Acapulco every year with a stopover in the Spanish colony of Manila in the Philippines. The ships also carried mainly silver from Mexico (as well as from Peru and Bolivia) in exchange for spice, porcelain, ivory, lacquerware, processed silk and other valuable commodities. Many other goods from Latin America reached China at that time, among which were typically potato, sweet potato, corn, cacao, peanuts, chili, tomato, pepper, pineapple, tobacco, creating a trade route that persisted until 1815.

After the Opium war ended (1860), China was opened to the world and Chinese began to leave the country and many of them went to the American continent. Peru was the first country in Latin America where large-scale immigration of Chinese stepped on (1848 and up to 1874). It was estimated that around 100 thousand of them arrived. The reason why they went to Peru is that there was a scarcity of labor force in the plantations of sugarcane and cotton in the Coastal region<sup>2</sup>.

In 1874 Peru<sup>3</sup> was the first country in Latin America to establish diplomatic links with China and Japan. Mexico, for example, established diplomatic links with Imperial China in 1899. As a result of early Chinese immigration, in Peru there was the large Chinese community in Latin America<sup>4</sup>. In South America, for example, countries like Argentina, Brazil, Chile and Suriname boast large concentrations of ethnic Chinese. However, Peru maintains the largest and most vibrant community (and the seventh largest in the world).

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2 Traditionally, slave force was used there (people from Africa brought by the Spaniards when they conquered the Inca Empire), but by the middle of the XIX century, the slave trade was being forbidden in the world, and finally, in 1854, slavery was forbidden in Peru the scarcity of labor become a big problem.

3 Because of an incident on a ship carrying Chinese laborers, Peru established diplomatic links with China and Japan in 1873-1874.

4 Michael J. Gonzales, “Chinese Plantation Workers and Social Conflict in Peru in the Late Nineteenth Century,” *Journal of Latin American Studies*, Vol. 21, No. 3 (Oct. 1989): 390.

During the late 19th to early 20th century, Chinese immigrants arrived<sup>5</sup> as indentured manual laborers known derogatorily as “Coolies.” Beyond their toil, these immigrants came to further shape the societies they inhabited<sup>6</sup>.

Many centuries have gone by, and very few important facts<sup>7</sup> can be registered in the history of the relations of these two regions.

The re-birth of China-Latin America Relations can be again meaningful just after fifty years of the People’s Republic of China (PRC). The first country to effectively establish diplomatic relations with China was Cuba from 1960 onwards; most Latin American governments waited until President Nixon’s visit to Beijing in February 1972 before recognizing the People’s Republic: in 1972, Argentina and Mexico recognized the PRC, followed by Brazil two years later and, later still, Bolivia in 1985.

In the 1980’s China-Latin America relations, both from the economic and political points of view, showed a modest but steady pace. During the 1990’s the economic links, particularly in trade, moved to the first place in China- Latin America relations. Total trade reached US\$ 12.6 billion in 2000, with an average annual growth rate over 20%.

However, the trade links were only homogeneous for some of the region. China gave priority to the links with the more economically relevant countries like Brazil, Mexico, Argentina and Chile. In this stage, the bilateral trade started to take off, surpassing the previously marginal levels.

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5 In Central America, Nicaragua and Panama boast significant Chinese populations. The presence of Chinese nationals in Nicaragua can be traced back to 1920, when a census recorded approximately 400 Cantonese immigrants living along the Atlantic regions. Many went on to found small businesses and eventually became leaders in Nicaragua’s textile, transportation, agricultural, industrial and hospitality industries. In Panama, Chinese immigrants arrived to work on the construction of the Canal. Their descendants echo previous patterns of integration and industrial achievement by intermixing with the local population and economy. In recent years, Panama hosted the Chinese Association of Central America at the Panama Convention, a supranational support network for the Chinese diaspora.

6 Isabelle Lausent-Herrera, “Tusans (tusheng) and the Changing Chinese Community in Peru,” *Journal of Chinese Overseas* 5 (2009): 116.

7 Roberto Chao Romero. *The History of the Chinese in Mexico 1882-1940*. University of Arizona Press, 2010.

Based on the evolution of China and LAC in the 80's several motivations emerged from each side, owing to the particular, respective necessities which allowed a gradual and sustained advance of the bilateral ties. With the process of economic reforms and external opening in China, the international economic relations acquired an outstanding pragmatism related to its economic development. In this context, the relationships with LAC were re-defined. China's main interests focused on the economic field. First, Latin America means for China a stable market for imports of raw materials, energy and food and a destination for its external investments aimed at guaranteeing these imports. It also plays a role, although, secondary, as an export market for Chinese manufactured goods (textile and electronics) taking into account that LAC has approximately 548 million consumers with twice the Chinese per capita incomes.

The relationship between China and LAC has significantly intensified since 1990 as far as cooperation is concerned. China has implemented cooperation agreements with several Latin America countries (16) in areas like infrastructure, agriculture, medicine, humanitarian aid, culture, social development. It also signed agreements for mutual promotion and protection of investment with 11 countries of the region and established inter-governmental protocols for joint cooperation commissions with 12 countries.

China's renewed interest in developing its links with Latin American countries has led to initiatives to widen the relationship with Latin American-centered multilateral organizations and institutions. Since 1990, it has carried out almost 20 annual gatherings of Chancellors with the Rio Group. In addition, in 2000, it set up a mechanism for consultations and cooperation with the Andean Community of Nations (Venezuela, Colombia, Peru, Ecuador, and Bolivia).

In the political arena, China has exchanges with Parlatino (Latin America Parliament) and Association of Caribbean States. China currently links with more than 90 political entities in 29 Latin American countries, including both ruling and opposition parties. China's political motivations are wide, including but not limited to securing diplomatic support for its global

positioning, to reinforce and balance its links on the global stage, and to set up alliances with developing countries in order to strengthen its position in the WTO. Relations with China have, in return, brought significant economic, geopolitical, and political importance for Latin America and the Caribbean.

In May 1988, when Deng Xiaoping met with Argentine President Alfonsín, he pointed out: "Now people often say that the 21st century will be the Pacific century. I think this is premature. The Pacific age is sure to come, but not now. There will also be a Latin American era." He also suggested that Sino-Latin American relations could become a model for South-South cooperation. Based on this concept, China-Latin America cooperation in the political and economic fields has been further strengthened, such as China's support for the initiative of "peaceful settlement of the Central American conflict" put forward by the "Contadora Group" composed of Colombia, Venezuela, Mexico and Panama in the 1980s. At the same time, the economic and trade ties between China and Latin America also showed rapid growth. China has not only established trade representative offices in more than ten Latin American countries, but also reached economic and trade agreements with Chile, Peru, Jamaica, Mexico, Argentina, Ecuador and Brazil. Although the trade volume of China and Latin America accounted for only 3% and 1% of their respective foreign trade volume in 1984, since the 1990s, due to the "open regionalism policy" in Latin America, China has also put forward and adopted the "market diversification" strategy, and Sino-Latin American trade has entered a period of rapid growth.

During the 2001-2005 period, several LAC presidents visited Beijing, contributing to the enhancement of bilateral ties. The economic links are, by no doubt, the key piece of this relationship. (Visits from President of Mexico and Chile, 2001 Ecuador and Uruguay in 2002, Cuba and Guyana in 2003 and Brazil, Argentina and Venezuela in 2004, from Colombia and Peru 2005).

Also, in 2004 President Hu Jintao's went to Brazil, Argentina, Chile and Cuba and, a year later, to Mexico attested to Beijing's interest in the region. Several

agreements on mining agriculture custom duties and social development were signed, and strategic association was agreed upon, projecting mid and long term relations.

At the same time the First Forum of Economic and Commercial Cooperation China-Caribbean (Jamaica, February 2005) was established and attended by China's Vice President Zeng Qinghong. A total of 10 Caribbean countries were declared tourist destinations for Chinese Citizens during the event, while Jamaica and Trinidad and Tobago granted China the status of full market economy.

In 2014, China and the Community of Latin American and Caribbean States (CELAC) jointly announced the establishment of the China-Latin America comprehensive co-operative partnership and the formal establishment of the mechanism of China-CELAC.

The Chinese government currently holds links with 90 political entities in 29 Latin American and the Caribbean countries. The Chinese strategy has been developed in three levels – bilateral relations, groups, and regional and sub-regional integration mechanisms and through the links established within trans Pacific economic cooperation bodies (APEC, FOCALAE).

Clearly, in the last two decades, China and Latin America have already entered the process of strengthening their economic Relations. In recent years, it has concluded free trade agreements with various countries and encouraged platforms of multilateral dialogue, such as the China-CELAC (Community of Latin American and Caribbean States) Cooperation Forum with MERCOSUL (South America Trade Bloc-Argentina, Brazil, Paraguay, Uruguay, and Venezuela) and other Latin America areas.

## 1. Trade

It should be highlighted that China has continuously imported goods from LAC since 1999 with an outstanding growth in a short period of time. The reduction of customs duties from 17% to 9.4%, the fastest growth of the Chinese economy, and the better conditions in Latin America improved the trade balance

of this region, which not only lowered its deficit but also registered a surplus in the last few years.

Especially after China has entered in WTO, the growth of Chinese exports to Latin America has indeed been impressive: the share of total regional imports represented by China increased from 2.3% in 2000 to around 16% in 2017. While in 2000 China was not among the top three sources of imports for any of the LAC countries, it currently represents the first or second origin of imports for all the major countries of the region.

From 2007 to 2017, annual trade between China and LAC grew 151.2 percent to reach \$258 billion in 2017.

According to the Economic Commission for Latin America and the Caribbean (ECLAC), the value of the trade in goods between the region and China grew by 16% in 2017 to reach a total of US\$ 266 billion. While slightly below the record high of US\$ 268 billion recorded in 2013, that figure indicates a significant recovery due to international crises.

In 2017, China received 10% of the region's total goods exports and accounted for 18% of the region's imports. China's imports from Latin America and the Caribbean amounted to about \$126 billion in 2017, accounting for 7% of China's overall imports; China's exports to the region amounted to \$131 billion, accounting for 5.7% of China's total exports. China has become the top trading partner of Brazil, Chile, Peru, and Uruguay. Major Chinese imports from the region in 2017 were primarily natural resources, including ores (31%), soybeans (19%), petroleum (16%), and copper (9%). Major PRC exports to Latin America included electrical machinery and equipment (21%); machinery and mechanical appliances (15%); motor vehicles and parts (6%); and a wide array of industrial and consumer products.

In 2017, double-digit increases in oil, iron ore, and copper prices led LAC exports to China—largely from Brazil, Chile, and Peru—to recover. This trend continued in the first eight months of 2018, with trade growing 20.2 percent year-on-year.

In 2015, PRC President Xi set a goal of total China-Latin America trade reaching \$500 billion in 10 years.

For imports, the situation is reversed: in 2017, while low-, medium- and high-tech manufactures accounted for 91% of the region's imports from China. In other words, trade between Latin America and the Caribbean and China remains clearly inter-industry: raw materials for manufactures.

The future of trade between the two regions is very promising, especially with China's rebalancing its growth rate for a more sustainable one, not just looking for quantitative but qualitative growth; in this scenario, it also involves the recomposition of consumption, opening opportunities for Latin American exports, notably in certain agro-food sectors. Additionally, China is experiencing changes in its food consumption patterns owing to the urbanization process and the consolidation of its middle class (from slightly over 50 million in 2005 to around a billion in 2030)

high of US\$ 183.1 billion in 2016 and, for the first time, exceeded FDI inflows, making that country a net investor. The Chinese cumulative foreign direct investment (FDI) in Latin America and the Caribbean reached around \$200 billion in 2017 (including territories with large offshore financial sectors), according to PRC figures. The region has become the second-largest destination for Chinese FDI, more than half in natural resources. Chinese foreign direct investment (FDI) and loans also play a key role in China's relations with the region. In 2022, China's FDI in Latin America and the Caribbean totaled approximately US\$12 billion.

The China Development Bank and China Exim Bank are among the region's main lenders. Between 2005 and 2020, both institutions lent around US\$137 billion to Latin American governments in deals involving oil swaps and financing infrastructure investments in the region.

To date, mining has been the most attractive sector for the development of new Chinese investment projects in the region, receiving 27% of the total value of investments announced between 2004 and October 2017.

In recent years, however, there have been some diversifications at the sectoral level. While metals and fossil fuels accounted for 42% and 18%, respectively, of the total announced between 2004 and 2010, more recently (2011-2017) those sectors accounted for only 20% and 6%, respectively. This change was offset by higher investments in sectors such as telecommunications, real estate, food, or renewable energy, indicating that Chinese companies are interested in entering new sectors in the region.

The energy sector has been the main target for the new mergers and acquisitions by Chinese companies in Latin America and the Caribbean. 49% of the total amount went to this sector and 12% to renewable energy. Meanwhile, mining and utilities accounted for 9% and 33% of the total, respectively. In this connection, the considerable growth in Chinese investments in 2017 was due to the sale of major Brazilian energy companies, the value of which exceeded US \$ 17 billion.

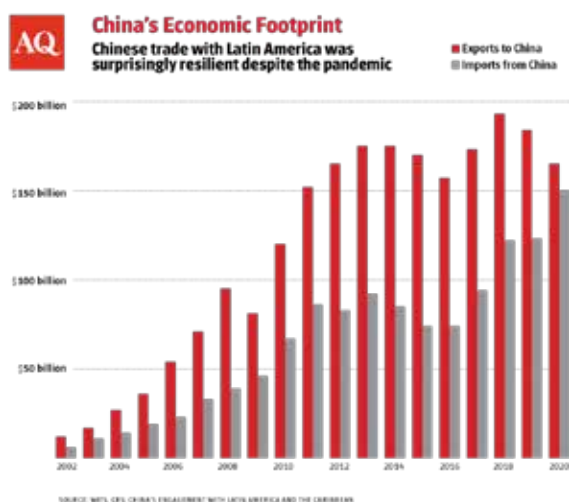


Figure 1 Year-by-year import and export trade between Latin America and China

## 2. Investment

### Foreign direct investment and the internationalization of China's firms

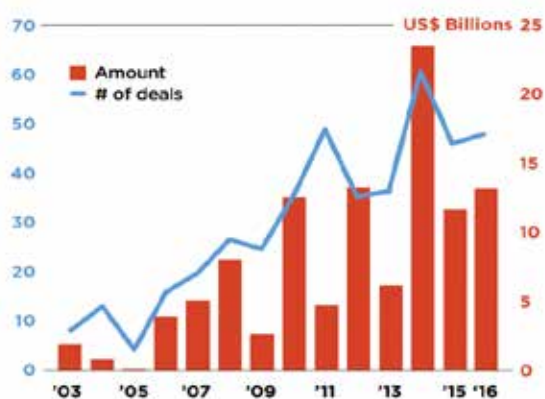
China's investments abroad reached a record



Projects in Argentina, Brazil, Costa Rica, Ecuador and Venezuela involve Chinese firms like State Grid, PowerChina and Sinhydro. Chinese companies are playing an active role in providing green technologies to Latin America. In recent years, China's role in providing wind and solar energy generation for the region has gained relevance. Argentina, Bolivia and Ecuador have signed contracts with Chinese turbine producers for the implementation of innovative sustainable-energy programmes. Some of these operations, like the one in Brazil, have been sponsored by the CDB. Chile has played a role as an entry point for solar energy projects in the region, including a USD 900 million project in the Atacama Desert to produce 300 megawatts (MW) of electricity.

In addition to infrastructure and green energy, China's agricultural FDI has focused on land purchases, but also other industries across the agro-industry supply chain. Although the general perception is that China is systematically acquiring land in Latin America, just over 70 000 hectares of land have either been purchased outright or leased by Chinese companies for crop cultivation as of June 2015 (Myers and Jie, 2015). Including large acquisitions, the estimated total of Chinese land acquisition is less than 0.2% of the total arable land of the region.

**FIGURE 1. Annual Chinese FDI in Latin America**



Source: Bureau van Dijk, fDi Markets

Figure 2 Year-by-year annual Chinese FDI in Latin America

### 3. Strategy – Belt and Road Initiative for LAC Countries

President Xi Jinping addressed to the nation during the 19th National Congress of the Chinese Communist Party, affirming that to achieve the rejuvenation of the Chinese nation, China needs to build a “moderately prosperous society” by wiping out poverty and becoming a “fully developed nation”. As he has stressed in his historical speech, that is impossible to be done alone. China now leads the world in trade, outbound investment, and foreign-exchange reserves.” Therefore, it is necessary again to open up to the Commerce to the world. Under The “Belt and Road” initiative, China has created a multilaterally inclusive platform to help itself and other developing nations to achieve the goals of development.

In early January 2015, the first ministerial meeting of China-Latin America was successfully held in Beijing. More than 40 ministerial officials from 33 countries in Latin America attended the meeting and adopted the Third Plan for Cooperation between China and Latin America Countries (2015-2019). In a productive document, the media also referred to the China-Latin America Forum as “the opening of omni-directional diplomacy”. President Xi Jinping proposed a major initiative to build the “Silk Road Economic Belt” and the “maritime Silk Road in twenty-first Century” (hereinafter referred to as the “BRI” along the way according to NDRC). The “Vision and Action to Promote the Co-construction of the Silk Road Economic Belt and the 21st Century Maritime Silk Road” was jointly promulgated.

Premier Li Keqiang’s official visit to Brazil, Colombia, Peru and Chile in late May was deemed to have further promoted pragmatic cooperation between China and Latin America, reflecting the good will of both sides to win-win cooperation.

The Belt and Road Initiative could benefit the region by boosting trade between Asia, Europe and Africa and demand for products from Latin America and the Caribbean. While the region is geographically remote from those areas, maritime, air and digital

routes can bridge that distance, strengthening trade, investment, tourism and cultural links. Therefore, the second China-CELAC Cooperation Plan should incorporate quantifiable targets for the diversification of regional exports to China. The Plan should also commit the parties.

China's BRI construction aims at promoting economic prosperity and regional economic cooperation among various countries along the border, strengthening exchanges and mutual learning among different civilizations. It is a major innovation of China's cooperation with related countries, and also stems from the friendly exchanges between ancient China and these countries. For Latin America and China, the glory of China's ancient maritime Silk Road is a valuable chapter in the history of bilateral relations. "Maritime Silk Road" is an image appellation of the maritime traffic routes between China and the rest of the world. It refers to the important transportation networks of the East Asian countries (Japan, Korea, Ryukyu, Philippines, etc.) and the Western countries (Southeast Asia, South Asia, West Asia, East Africa and even Europe) in history. The famous Pacific Silk Road represents the last glory of the ancient Maritime Silk Road: Chinese merchant ships sailing from Zhangzhou, Fujian Province, Moon Harbor, carried silk and porcelain to Manila, Philippines, and later arrived with lacquerware shipped from Japan, spices from Southeast Asia and India. A galleon in Acapulco, Mexico. In 1575, the route from Guangzhou to Latin America was opened, and the official maritime Silk Road, which originated in the Han Dynasty, reached its peak. Over the course of 250 years, the sea silk road has promoted economic, trade and cultural exchanges among the three continents, bringing Eastern silk, porcelain, spices and civilizations to the West, as well as more than 30 endemic crops such as corn, potatoes, peppers and peanuts from the Americas to the Eurasian continent, promoting different civilizations of mankind. The integration has made an invaluable contribution to the development of the world economy and the prosperity of science and technology. Therefore, when Sino-Latin American trade began to grow rapidly in the 1990s, Latin American media also issued comments on the "re-emergence of the new Silk Road".

The Belt and Road Initiative (BRI) has just turned ten years old and already has around 100 participating countries. Initially, the BRI was configured as a bridge between Asia and Europe via Africa and the Middle East. In its initial conception, Latin America was not considered part of the BRI in its early stage. However, in recent years, Chinese leaders have shown signs of increasing attention to the region. Latin America was recently designated as a new destination for the growing scope and extension of the BRI. President Xi has said, during the 2017 the first Belt and Road Initiative Forum in Beijing, that "Latin America is a natural extension of the 21st Century Maritime Silk Road". Less than a year later, at the 2018 China-CELAC Forum, Chinese Foreign Minister Wang Yi again tried to involve Latin American countries in the BRI agenda and framework, and in the end successfully signed a "Special Declaration on the Belt and Road Initiative". As of December 2021, 20 of the 24 countries in the Latin American and Caribbean region have signed and are participating in the BRI. In other words, China is filling a space opened up by political fragmentation in Latin America, and this should be an important object of discussion.

The basis of BRI is centered on four key aspects which are supposed to be leveraged more efficiently—to widen the trade links, to promote inter-enterprise cooperation, to favor the joint venture modality as a way to exploit and take advantage of natural resources, and to reinforce the technical and scientific exchange the LAC region can benefit from its expansion.

#### 4. Recommendations

A successful Latin America-China partnership needs adequate and high-quality multilateral governance. China's transformation introduces new challenges and opportunities for the region. These need to be incorporated into the broader development strategy aimed at upgrading, diversification and integration. For this to happen, China also needs to understand Latin America's development challenges and needs. The willingness to establish channels of cooperation should go beyond bilateral forms of dialogue and incorporate a structured dialogue with the region as a whole. Finally, this partnership should complement the current agenda to include

sustainability goals and regulatory issues as main elements of cooperation.

How Latin America should deepen and improve its partnership with China as part of its development agenda remains prospective. China has been – and will continue to be – a game changer for the region.

Latin America needs to invest in innovation, in the quality and pertinence of skills, and in closing the infrastructure gaps to benefit from global value chains and a more technology-enabled economic landscape.

Ultimately, building a China-Latin America partnership for development would be mutually beneficial, but requires global governance. China's transformation could fuel growth in times of economic slowdown in Latin America.

Latin America's needs for infrastructure will be important in the medium and long term, and China's financing and investment have become important sources to help close the infrastructure gap in the region. If Latin America closes its infrastructure gap with other middle-income countries, the region could increase its annual growth by an estimated 2 percentage points (Calderón and Servén, 2010). To meet the infrastructure needs between 2006 and 2020, Latin American countries should invest about 5.2% of the region's GDP every year, and 7.9% just to reach the level of infrastructure stock as select Asian economies (Korea, Malaysia, Singapore and Hong Kong, China) (Perrotti and Sánchez, 2011).

We expect and urge the new Latin America leadership and China leaders to solidify the bilateral cooperation. Latin America needs a particular strategy

to be engaged in "belt and road" initiative. This strategy needs to promote comprehensive development based on the expansion of trading areas, improvement of infrastructure cooperation, increasing trade and investment facilitation and the exchange of science and technology. We as regions have a common agenda: to seize the opportunities to eradicate poverty and to pave our road to a sustainable development.

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# “Belt and Road” Trade Liberalization and Facilitation: Practices and Achievements

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The global financial crisis in 2008 had a significant impact on the world's economic landscape. Internationally, it led to sluggish economic growth and widening developmental gaps, paralleled by growing anti-globalization sentiments. Meanwhile, a new wave of technological revolution has greatly changed the world, pushing emerging economies into the global spotlight and causing a fundamental reform of the global economic governance structure.

At the national level, China, after more than three decades of fast growth through reforms and opening-up, has emerged as a cornerstone of the global economy. However, it is currently in a stage where all three phases overlap: growth rate transition, economic structural adjustment, and the absorption of earlier stimulus policies. This pivotal moment presents China with a strategic opportunity for development, requiring a quick shift towards higher-quality growth as it navigates this unique phase.

Following a thorough assessment of global trends, the trajectory of human civilization, and a profound understanding of China's economic and social progress and its role in global governance, the Belt and Road Initiative (BRI) was launched by the CPC Central Committee after the 18th CPC National Congress. Spearheaded by President Xi Jinping, this initiative aligns with essential requirements of the global governance system transformation and the advancement of human civilization. Rooted in principles

of open regional collaboration, the BRI aims to uphold the global free trade system and an open world economy. It strives to enhance regional economic cooperation, foster sustainable development, and contributing to shaping a new framework for global governance.

Since its launch in 2013, the BRI has aimed to build a global community with a shared future. It has followed the principles of extensive consultation, joint contribution, and shared benefits while focusing on five key areas: policy coordination, infrastructure connectivity, unimpeded trade, financial integration, and closer people-to-people ties. These endeavors have contributed to the collective growth of countries and regions along the route, leading to a notable advancement in trade liberalization and facilitation.

## 1. Background of the “Belt and Road” Initiative: Trade Liberalization Challenges

### 1.1 *The Surge in Trade Protectionism and Increased Trade Barriers*

Since the establishment of the Bretton Woods system, economic globalization and trade liberalization have played a pivotal role in optimizing resource allocation, invigorating global supply chains, and improving global economic coordination. However, economic globalization is a double-edged sword. While it fosters economic trade growth, it simultaneously brings about an array of challenges, such as environmental degradation and widening wealth gaps

among nations. These challenges have led to an imbalance in the distribution of international interests, giving rise to a wave of anti-globalization sentiments that oppose this unequal distribution.

Based on data from the Global Trade Alert database, it's evident that global trade intervention measures increased significantly from 2009 to 2022. The total number rose from 2,678 in 2009 to 3,110 in 2013. Notably, the number of trade protection measures implemented far exceeded the number of trade liberalization measures. Trade protection measures grew from 2,228 in 2009 to 2,530 in 2013, eventually peaking at 6,579 in 2020. While trade liberalization measures also increased, their growth was more gradual, going from 450 in 2009 to 580 in 2013, with a peak of 1,116 in 2022, as shown in Figure 1. Moreover, the global trade in goods encountered a significant setback due to the impact of the global financial crisis and the rising trade barriers. Between 2009 to 2013, there was a consistent decrease in the overall volume of global trade in goods. In 2009, the growth rate of global trade in goods imports and exports dropped to -22.25%. Although there was some recovery in the volume of global trade in goods after 2009, the growth rate remained relatively sluggish.



**Figure 1: Growth Trend of Global Trade Intervention Measures from 2009 to 2013**

Source: Global Trade Alert Database  
[https://www.globaltradealert.org/global\\_dynamics/area\\_all/year-to\\_2013](https://www.globaltradealert.org/global_dynamics/area_all/year-to_2013)

### 1.2 The Global Investment Landscape and the Divergent National Attitudes towards Investment

The global financial crisis in 2008 heightened the adverse effects of economic globalization. When it comes to investment, major world powers adopted two distinct attitudes toward foreign investments. Some developed economies heightened their political

considerations, particularly regarding national security in the context of foreign direct investment (FDI). This led to a significant strengthening of mechanisms for scrutinizing foreign investments. Conversely, emerging economies, like China, implemented a series of measures to enhance favorable investment policies.

In 2009, there was a sharp drop in global foreign direct investment (FDI), affecting both inflows and outflows. Despite there was a brief recovery in investment after 2009, the increasing protectionist measures led to a prolonged “cooling” phase for global investment. This trend has continued, and the overall investment landscape remains subdued.

According to UNCTAD's data, global foreign direct investment (FDI) inflows saw a substantial decline, falling from \$1.697 trillion in 2008 to \$1.114 trillion in 2009, representing a further 37% of decrease following a 16% decline from 2008 and 2007. While there was a temporary rebound in investment after 2009, reaching \$1.24 trillion in 2010 and \$1.5 trillion in 2011, the rise of trade protectionism resulted in yet another “chilly spell” for global investment, dropping to \$1.35 trillion in 2012, marking an 18% decrease. Since then, the situation has remained uncertain. Following a sharp decline in 2020 and a strong recovery in 2021, global foreign direct investment decreased by 12% to \$1.3 trillion in 2022.

## 2. Unimpeded Trade: a Key Part of BRI

In September and October 2013, Chinese President Xi Jinping introduced the concept of the “Silk Road Economic Belt” and the “21st-Century Maritime Silk Road.” Guided by the principles of extensive consultation, joint contribution, and shared benefits, these initiatives have consistently focused on promoting “five connectivities”: policy coordination, infrastructure connectivity, unimpeded trade, financial integration, and people-to-people bonds. They aim to nurture economic partnerships with partner nations and jointly build a community with shared interests, a shared future, and shared responsibilities characterized by political trust, economic integration, and cultural inclusiveness. Among these, “unimpeded trade” is a fundamental and stabilizing element of the BRI, facilitating trade liberalization.

### **2.1 Unimpeded Trade: A Fundamental and Stabilizing Element of the Belt and Road Initiative**

The Belt and Road Initiative (BRI) covers a vast region, including Southeast Asia, South Asia, East Asia, Central Asia, Western Asia, North Africa, and Central and Eastern Europe, these areas encompass diverse range of nations, many of which are developing nations with varying economic levels and industrial structures, offering substantial trade complementarity. However, challenges in trade policy coordination, inadequate infrastructure and heightened geopolitical concerns have posed increased trade and investment risks, and limited the realization of this trade complementarity.

The Belt and Road Initiative nations represent a significant portion of the world's population, but account for relatively a small share of global trade. According to UN Comtrade data from 2017, the combined foreign trade of the BRI nations was \$10.2 trillion, with \$5.0 trillion in imports and \$5.1 trillion in exports. This corresponds to only 15.0% of world's total imports and 15.2% of total exports. Within the BRI nations themselves, imports and exports reached \$2.2 trillion and \$1.9 trillion, accounting for 43.2% and 36.5% of their combined trade volume.

“Trade is a key driver of economic growth.” In the world grappling with increasing global trade protectionism and a sluggish economic recovery, promoting unimpeded trade through the Belt and Road Initiative, alongside the innovation of global economic and trade cooperation mechanisms, offers a pathway to unleash the trade growth potential among the countries along the route. This can foster industrial collaboration, facilitate the advancement of industries in these nations, stimulate economic growth, and improve the well-being of their people. This not only tackles current global economic development challenges but also contributing to the stable development of the participating nations.

### **2.2 The essence of unimpeded trade: advancing trade liberalization and facilitation**

Unimpeded trade primarily centers on facilitating trade and investment to meet the demands of economic globalization and regional economic integration. A key approach is to leverage the unique

strengths of BRI countries, taking into account their distinct developmental characteristics and advantages, particularly their trade complementary strength, to collaboratively establish an extensive free trade network. By building multi-dimensional, multi-level, and diverse cooperation platforms, enhancing exchanges of economic and trade policy, and aligning national and regional development strategies and economic and trade systems, they foster a multilateral, open collaborative environment rooted in mutual advancement and shared progress. This effectively diminishes trade and investment barriers, broadens the scope of trading activities, optimizes trade structures, and expedites investment facilitation. Through infrastructure connectivity, it streamlines the movements of goods, capital, technologies, skilled labor, and other factors, reducing the costs associated with trade and investment, enhancing the ease of trade and investment, and nurturing a favorable environment for trade and investment. Consequently, this fuels greater trade and investment in countries and regions along the Belt and Road, driving economic and social advancement in these areas.

### **3. Advancing Trade Liberalization and Facilitation through the Belt and Road Initiative: a Decade of Practice**

Over the past decade following the Belt and Road Initiative was introduced, countries and regions along the route have embarked on a collective journey, actively implementing measures to advance trade liberalization and facilitation.

#### **3.1 Creating Platforms for Policy Coordination to Facilitate Trade Liberalization**

The Belt and Road Initiative is grounded in principles of “open cooperation, inclusiveness, market-driven operation, and mutual benefit.” Policy coordination is essential for safeguarding the initiative and serves as a vital first step to collective actions. Across the Belt and Road region, countries engage in extensive dialogues concerning their economic development strategies and approaches, aligning their overarching strategies and economic policies within the context of multilateral trading regulations. Together, they formulate comprehensive plans and measures to advance regional cooperation and resolve cooperation-

related challenges. This approach not only overcomes the inefficiencies, disagreements, and negotiation deadlocks commonly associated with the WTO's "consensus-based" principle, but also enhances the alignment and coherence of trade policies among relevant countries within the multilateral framework. It is instrumental in creating a fair and level-playing field for free trade. Over the past decade, the BRI, regarded as one of the most significant public goods provided by China, has notably enriched the concept of global economic cooperation and governance through the establishment of policy coordination platforms, jointly promoting trade liberalization in countries along the route.

**Firstly, align the development strategies of various countries.** Countries and regions along the Belt and Road Initiative embrace to the principle of finding common ground while respecting differences. Considering their unique circumstances, they engage in extensive exchanges regarding economic development plans and policy measures. They actively align themselves with strategies associated to the Belt and Road Initiative. This alignment includes initiatives such as the European Union's "Juncker Plan," Russia's "Eurasian Economic Union," Mongolia's "Path of Development," Kazakhstan's "Bright Path," Poland's "Amber Road," Turkey's "Middle Corridor," Vietnam's "Two Corridors, One Circle," Saudi Arabia's "Vision 2030," Thailand's "Eastern Economic Corridor," Hungary's "Opening to the East," Indonesia's "Global Maritime Fulcrum," the Philippines' "Build, Build, Build" program, and many more.

**Secondly, sign cooperation documents to promote extensive consensus.** As the Belt and Road Initiative progresses, an increasing number of countries and regions have expressed a strong interest in participating. In response, China has proactively entered into government-level cooperation agreements with relevant countries, regions, and international organizations. These endeavors aim to develop a broad consensus in international cooperation and further expand the community of Belt and Road partners. As of the end of June 2023, China has inked more than 200 cooperation agreements with 152 countries and

32 international organizations within the framework the Belt and Road Initiative. The agreements encompass various regions worldwide, including Eurasia, Africa, Latin America, the South Pacific, Western Europe, and more. They cover a wide array of areas such as infrastructure connectivity, investments, trade, finance, technology, social development, culture, livelihoods, maritime affairs, e-commerce, and more. In specific areas, China has achieved a series of bilateral and multilateral outcomes with Belt and Road countries. For example, in the digital economy sector, China, alongside with countries like Egypt, Laos, Saudi Arabia, Serbia, Thailand, Turkey, and the United Arab Emirates, launched the "Belt and Road Digital Economy International Cooperation Initiative." This initiative led to the signing of cooperation documents aimed at enhancing the development of the digital economy with 16 countries. Moreover, the "Standards Connectivity Action Plan for Belt and Road (2018-2020)" was implemented, resulting in the signing of 85 standardization cooperation agreements with 49 countries and regions. China also hosted the "Belt and Road Tax Cooperation Conference" and introduced the "Astana Belt and Road Tax Cooperation Initiative", expanding the tax cooperation network to 111 countries and regions. Joint statements were issued in collaboration with 49 participating countries to further advance practical intellectual property cooperation in Belt and Road countries. Additionally, the "Belt and Road Legal Cooperation International Forum" was organized, leading to the issuance of the "Joint Chairperson's Statement of the Belt and Road Legal Cooperation International Forum", among other noteworthy achievements.

**Thirdly, host high-level forums to enhance political trust.** Since the inception of the Belt and Road Initiative, there has been a notable increase in visits and interactions among high-level officials from countries and regions along the route. This ongoing interaction has strengthened political trust, encouraged close communication, and facilitated alignment of policies and development strategies, thus advancing trade liberalization and development in these areas. Two Belt and Road International Cooperation Forums were held in 2017 and 2019. The inaugural forum

in 2017 witnessed the participation of 29 heads of state and government leaders, with more than 1,600 representatives attending, resulting in 279 practical outcomes spanning five categories. The second forum in 2019 saw the participation of 38 heads of state and government leaders and attracted over 6,000 foreign delegates. During this event, China introduced a range of measures and cooperation initiatives, signed numerous bilateral and multilateral cooperation agreements during or before the forum, established multiple multilateral cooperation platforms within the forum's framework, listed investment and financing projects, and initiated collaborations involving local governments and enterprises. This resulted in a total of 283 initiatives across six categories. Among these, 42 bilateral and multilateral cooperation agreements were signed during or before the forum, and 27 multilateral cooperation platforms were established within the forum's framework. The Belt and Road Initiative has taken concrete steps to actively support the multilateral trade system and drive the advancement of trade liberalization. The third Belt and Road International Cooperation Forum is scheduled for 2023 and is expected to inject new energy into the development of the Asia-Pacific region and the world.

**Fourth, uphold multilateralism to promote unimpeded trade.** The primary objective of the Belt and Road Initiative's "unimpeded trade" focus is to advance trade and investment liberalization and facilitation, ultimately leading to unimpeded trade. Throughout the Belt and Road Initiative, participating countries have consistently upheld multilateralism, preserving the authority and effectiveness of the multilateral system while opposing various forms of protectionism. This commitment for robust international trade and investment has revitalized the global economy and fostered the dynamic development of economic globalization<sup>1</sup>. The first measure is trade policy coordination and the second measure is coordination of regional cooperation and openness. Several sectors within the Belt and Road Initiative require new international regulations and mechanisms. For instance, international institutions such as the Asian

Development Bank, World Bank, and International Monetary Fund have not fully addressed the domain of infrastructure development. The establishment of the Asian Infrastructure Investment Bank (AIIB) supplements the existing multilateral development platforms. Financing mechanisms created within the Belt and Road framework, such as the Shanghai Cooperation Organization (SCO) Bank Consortium, the China-Central and Eastern European Countries (CEEC) Bank Consortium, the New Development Bank (NDB) of BRICS countries, and the Silk Road Fund, are driving the more profound and substantive advancement of the Belt and Road Initiative<sup>2</sup>. The second measure is regional cooperation and openness. In the context of the current global economic landscape, regional trade agreements have shifted their focus from simply reducing tariff to the a comprehensive overhaul of rules. This shift has given rise to numerous institutional frameworks that transcend traditional multilateral rules. While this shift has partially addressed the demands of member states and seemingly eased conflicts and disputes among members, it has exacerbated the trend of "fragmentation" in multilateral rules. In contrast to the predominantly "hard law" nature of many regional trade agreements, the Belt and Road Initiative incorporates a wide array of documents, including memoranda of understanding, joint statements, joint communiqués, thereby embodying the characteristics of international "soft law". Through their participation in the Belt and Road Initiative, countries along the route have introduced various forms of economic openness, expanding the depth, breadth, and scope of bilateral and regional cooperation. This, in turn, has significantly boosted regional economic openness and development.

### ***3.2 Advancing Infrastructure Connectivity and Trade Facilitation***

Infrastructure connectivity is a key aspect of the Belt and Road Initiative, focusing on the development of a comprehensive infrastructure network encompassing railways, roads, shipping, aviation, pipelines, and integrated space information systems. This network aims to reduce costs associated with the exchange of

1 张怡恬, 吴撼地. "一带一路": 驱散逆全球化阴霾的东风 [N]. 人民日报, 2017-04-23: 005.

2 王志民, 陈宗华. "一带一路"建设的七年回顾与思考 [J]. 东北亚论坛, 2021 (1): 111.



goods, services, capital, information, and technology among regions, facilitating the flow of resources, optimizing resource allocation. It lays the groundwork for multilateral trade liberalization and facilitation.

In his speech at the APEC Business Advisory Council Dialogue on “Strengthening Partnerships on Connectivity” with Leaders in November 2014, General Secretary Xi Jinping emphasized the importance of infrastructure development, stating, “to build the Silk Road, we must first build ‘roads’—having the necessary infrastructure in place enables the smooth flow of people and goods.” Most countries and regions along the Belt and Road are developing nations, and their inadequate infrastructure poses a significant obstacle to economic development.

Prioritizing infrastructure connectivity within the Belt and Road Initiative means not only focusing on the development of “hard connectivity” in infrastructure but also improving “soft connectivity,” including infrastructure planning, development policies, transport regulations, and technical standards systems among participating countries. By simultaneously advancing both hard and soft connectivity, the initiative injects new impetus into the economic development of countries and regions along the route, providing essential infrastructure support for policy coordination, unimpeded trade, financial integration, and people-to-people bonds.

Since 2013, numerous cross-border projects along the Belt and Road have entered construction phases. China and the participating countries continue to advance the concept of “four-in-one” connectivity, covering land, sea, air, and the internet. Traditional infrastructure projects are progressing steadily, and new types of infrastructure projects are achieving significant milestones. The infrastructure network known as “six corridors, six routes, and multiple countries and ports” has been substantially established, injecting fresh energy into global connectivity and shared development.

**Firstly, build the infrastructure connectivity network of “six corridors, six routes, and multiple countries and ports”.** The “Belt and Road”

initiative has laid out a comprehensive framework of infrastructure connectivity known as ‘six corridors, six routes, and multiple countries and ports.’ This framework serves as both a facilitate trade pathway and a development project aimed at enhancing the well-being of countries along the route. It effectively shortens trade distance in terms of space, time, culture and emotion, thereby facilitating trade and investment activities along the route. This framework encompasses the ‘six major economic corridors’ including China-Central Asia-West Asia, China-Mongolia-Russia, the New Eurasia Continental Bridge, China-South Asia Peninsula, the China-Myanmar-India-Bangladesh Economic Corridor, and China-Pakistan. In addition to these corridors, China has reached consensus with relevant countries to develop additional economic corridors, such as China-Nepal-India, China-Myanmar, and the Lancang-Mekong River Economic Development Belt. These endeavors have fostered a new pattern of domestic and international cooperation, connecting inland and coastal regions, and fostering mutual support across eastern and western regions. Based on the concept of “six routes” connectivity, which includes highways, railways, waterways, air routes, pipelines, and high-speed information networks, and leverages the major countries and important ports along the route, a dynamic flow of people, goods, capital, information, and technology is gradually taking shape. This fosters a new model of regional economic cooperation based on coordinated development and complementary advantages. These international thoroughfares connect the inland to the coast regions, link node cities, border economic cooperation zones, important ports, and industrial clusters in relevant countries along the route, generating an agglomeration effect that enhances economic cooperation and coordinated development. By constructing a comprehensive, multi-level, and integrated infrastructure network, the participating countries can achieve mutual benefits and win-win development, ultimately facilitating trade and investment within the multilateral framework.”

**Secondly, based on the principal framework of “six corridors, six routes, and multiple countries and ports”, an integrated infrastructure network**

**including railways, highways, maritime transport, aviation, pipelines, and comprehensive space information networks is being established, facilitating the 4-in-1 connectivity of land, sea, air, and cyberspace.** In the railway sector, projects such as the China-Laos Railway, China-Thailand Railway, and Jakarta-Bandung High-Speed Railway are making orderly progress. International highway networks such as the China-Kyrgyzstan-Uzbekistan Highway and Cambodia's National Highway No. 6 are already operational. Moreover, significant developments are being made in port projects, including Gwadar Port, Hambantota Port, and Piraeus Port. Since the launch of the China Railway Express in 2011, which marked the beginning of rail transport for China-Europe trade, both the number of China Railway Express routes and the frequency of runs have steadily increased. In 2019, the China Railway Express completed 8,225 runs, making a 29% increase from the previous year. It transported 725,000 TEUs, showing a 34% increase from the previous year, and achieving a comprehensive container load factor of 94%. As transport infrastructure improved, the fastest travel time of China-Europe trains was reduced to 135 hours, with domestic travel time in China shortened to 24 hours, resulting in a 30% reduction in transportation costs. Even amid the pandemic, the China Railway Express exhibited robust growth and played a crucial role as a trade route. In 2020, it conducted over 12,000 runs, marking a 50% year-on-year increase, with a comprehensive container load factor of 98.4%. It reached 92 cities in 21 countries and transported 9.31 million pieces of international epidemic protection materials weighing 76,000 tons. As of the end of July 2023, the China Railway Express has conducted over 10,000 runs within the current year, resulting in the transportation of 1.083 million TEUs, a 27% increase from the previous year. By the end of June 2023, the China Railway Express has connected more than 110 Chinese cities to 216 cities in 25 European nations. Moreover, 86 domestic railway routes have been built to accommodate speeds of up to 120 kilometers per hour, enhancing economic and trade cooperation along its route, effectively creating a "steel camel caravan" that promotes connectivity. By the end of 2022, more than 300 international road passenger and cargo transportation routes were

in operation. In the aviation sector, domestic airlines conducting regular international flights to 153 cities in 62 countries by the end of 2022. China has signed bilateral air transport agreements with 100 Belt and Road partner countries and maintains regular passenger and cargo air transport services with 64 countries, representing over 60% of China's international flight volume. In maritime transport, China has actively participated in the construction and operation of ports such as Piraeus Port in Greece, Hambantota Port in Sri Lanka, and Gwadar Port in Pakistan. It has established maritime connections with more than 100 countries and region, offering maritime routes that cover all coastal countries and regions along the Belt and Road. The rail-sea multimodal transportation system of the Western Land-Sea Corridor covers 18 provinces, regions, and municipalities in China's central and western areas. This extensive network facilitates the movement of goods to over 300 ports in more than 100 countries around the world. Additionally, China has established connectivity with Belt and Road partner countries through international submarine cables and various international land cables.

**Thirdly, advance trade facilitation through "soft and hard connectivity" integration.** In addition to improving infrastructure connectivity, the BRI participants have also enhanced the harmonization of trade rules. This includes strengthening customs cooperation under the WTO Trade Facilitation Agreement through measures like information exchange, mutual recognition of regulations, and cooperative enforcement. Additionally bilateral and multilateral collaboration in areas such as inspection and quarantine, certification and accreditation, standard measurement, and statistical information has been enhanced to accumulate practical experience and promote best practice. Customs facilities at border checkpoints have been improved, with the establishment of "single windows" at border crossings to reduce clearance costs and improve clearance capacity. Furthermore, collaboration in supply chain security and facilitation has been prioritized, streamlining cross-border regulatory procedures, advancing the international verification of inspection and quarantine certificates, and mutual recognition of "Authorized Economic Operator" (AEO) programs.

Significant progress has been made with countries such as Kazakhstan, Kyrgyzstan, and Tajikistan to establish “green channels” for expeditious agricultural products clearance, resulting in over 50 types of agricultural food product types meeting quarantine requirements. The time required for agricultural product clearance with these countries has been reduced by 90%. By the end of 2019, Chinese customs had entered AEO mutual recognition arrangements with 42 countries and regions from 15 economies. This achievement places China at the forefront in terms of the number of countries and regions with mutual recognition arrangements, including 18 Belt and Road countries. In parallel, endeavors have been made to diminish non-tariff barriers in partner countries, heighten transparency in technical trade measures, and advance trade liberalization and facilitation. Open and voluntary cooperation forum models, the China-Africa Cooperation Forum, the China-Arab States Cooperation Forum, the China-Central and Eastern European 16+1 Cooperation Mechanism, and the Lancang-Mekong Sub-Regional Cooperation have set positive examples for trade facilitation.

#### **4. Achievements in Trade Facilitation and Liberalization by BRI Participating Countries**

Over the past decade, the Belt and Road Initiative has evolved into a widely embraced international public good and platform for international cooperation, thanks to the collective efforts of countries and regions along its route. According to a World Bank report, the Belt and Road Initiative is projected to boost trade by 4.1%, attract a 5% rise in foreign investment, and contribute to a 3.4% growth in the GDP of low-income countries. By 2030, it is expected to generate annual global benefits of around \$1.6 trillion, equivalent to 1.3% of the global GDP, and help lift nearly 40 million people out of poverty.

Over the past decade, the Belt and Road Initiative has placed a strong emphasis on trade

facilitation. It has established platforms for policy coordination through high-level forums, created trade promotion platforms such as import expos and overseas cooperation parks, fostered innovations in trade practices, and facilitated both inbound and outbound activities. This deepening of economic and trade cooperation has resulted in improved policy coordination among countries and regions along the route, significantly advancing trade and investment liberalization and facilitation. As a result, the depth and breadth of participation by countries along the route in economic globalization have been enhanced, leading to increased economic, trade and investment exchanges between China and these BRI countries and regions.

#### **4.1 Promoting Trade Facilitation in BRI Countries**

Trade facilitation is a term that lacks universal definition, and different international organizations have provided various interpretations. The World Bank defines trade facilitation as measures aimed at standardizing international trade practices, reducing obstacles within trade procedures, and ultimately enhancing trade efficiency in global commerce. In contrast, the World Trade Organization regards trade facilitation as the simplification and standardization of trade behaviors and procedures in international trade processes. In this context, we adopt an interpretation that focuses on simplifying trade procedures, reducing trade barriers, and lowering trade costs. Based on this interpretation, we will select trade facilitation-related indicators for our analysis.

##### **4.1.1 Assessment of Trade Facilitation Progress in BRI Countries**

###### **a. Constructing the index system**

Utilizing Wilson’s Trade Facilitation Index (TFI) system, which includes four main indicators: port efficiency, customs environment, regulatory environment, and e-business usage, we further divide them into 15 sub-indicators. The specific indicator system is presented in Table 1 for reference.

**Table 1. Trade Facilitation Indicator System**

General Indicator	Primary Indicators	Secondary Indicators	Indicator Types	Data Source
Trade Facilitation	Infrastructure (A)	Roads (A1)	Positive	GCR
		Ports (A2)	Positive	
		Air Transport (A3)	Positive	
		Quality of Electricity Supply (A4)	Positive	
	Customs Environment (B)	Trade-weighted Tariff Rate (B1)	Negative	
		Burden of Customs Procedures (B2)	Negative	
		Trade Barriers (B3)	Negative	
	Regulatory Environment (C)	Policy Transparency (C1)	Positive	
		Judicial Independence (C2)	Positive	
		Efficiency of Legal Framework in Settling Dispute (C3)	Positive	
		Burden of Government Regulations (C4)	Negative	
	E-Business and Financial Services (D)	Soundness of Banks (D1)	Positive	
		Ease of Access to Loans (D2)	Positive	
		Availability of Latest Technologies (D3)	Positive	
		Internet Users (D4)	Positive	

Infrastructure (A) is an important indicator in trade facilitation assessment. It represents the essential material conditions needed for human society's survival and sustainable development. It also mirrors a nation's economic development level. Having robust infrastructure improves the efficiency of international trade transportation. Consequently, countries with inadequate domestic roads networks, railways, and ports face disadvantages in this regard. This report further divides the main indicator "Infrastructure" into four sub-indicators: "Quality of Road," "Quality of Port Infrastructure," "Quality of Air Transport Infrastructure," and "Quality of Electricity Supply".

The Regulatory Environment (B) serves as the basis for ensuring smooth trade within a country, and the quality of this environment indirectly reflects the level of trade facilitation. This report subdivides the main indicator "Regulatory Environment" into four sub-indicators: "Transparency of Government Policy Making," "Burden of Government Regulation," "Judicial Independence," and "Efficiency of Legal Framework in Settling Disputes."

Customs Environment (C) is a pivotal component of trade facilitation. A nation's customs environment has the most direct impact on the efficiency of goods entering and leaving the country, making it an vital indicator for assessing trade facilitation. This report divides customs environment indicator into three sub-indicators: "Trade-weighted tariff rate (hard data)," "Burden of customs procedures," and "Prevalence of trade barriers."

E-commerce and Financial Service Indicators (D) play a critical role in advancing trade facilitation. On the one hand, modern information technology has significantly accelerated trade compared to the era of traditional telegrams and letters, reducing the time needed for information exchange between importing and exporting countries. On the other hand, the stability and accessibility of financial services ensure the security of cross-border capital flows. Therefore, based on previous experiences and data availability, this report divides the e-commerce and financial service indicators into four sub-indicators: "Availability of Latest Technologies," "Internet users (hard data)," "Soundness

of banks,” and “Ease of access to loans.”

### b. Scope of assessment

Considering data availability, this report primarily selects relevant data from 52 BRI countries and China for the period from 2008 to 2019. Please refer to Table 2 for the list of the selected BRI countries.

**Table 2. List of BRI Countries Included in the Sample**

Regions	Countries
ASEAN	China, Mongolia, Singapore, Malaysia, Indonesia, Thailand, Vietnam, Brunei, the Philippines
West Asia	Turkey, Syria, Jordan, Israel, Saudi Arabia, Oman, United Arab Emirates, Qatar, Kuwait, Bahrain, Greece, Cyprus, Egypt, Lebanon, Iran
South Asia	India, Pakistan, Bangladesh, Sri Lanka, Nepal
Central Asia	Kazakhstan, Kyrgyzstan
CIS	Russia, Ukraine, Georgia, Azerbaijan, Armenia, Moldova
Central Europe	Poland, Lithuania, Estonia, Latvia, Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Albania, Romania, Bulgaria, North Macedonia

### c. Data processing

The data for this report is sourced from The Global Competitiveness Report (GCR) published by the World Economic Forum.

First, to ensure consistent analysis, a linear transformation method is used for standardizing the original data related to trade facilitation in BRI countries. This standardization process addresses two primary issues. First, for countries with missing data in specific years, the report either calculates an average based on available data from the years before and after or substitutes missing values with alternative indicators. Second, because the selected sub-indicators have variations in their value range (some ranging from 1 to 7, while others range from 0 to 100 and 1 to 5), which makes direct comparison challenging, a linear transformation method is used to standardize these indicators uniformly.

For the calculation of positive indicators, formula (1) is applied:

$$Y_i = (X_i - X_i^{\min}) / (X_i^{\max} - X_i^{\min}) \quad (1)$$

For negative indicators, formula (2) is applied:

$$Y_i = (X_i^{\max} - X_i) / (X_i^{\max} - X_i^{\min}) \quad (2)$$

Where  $i (i=1, \dots, 15)$  represents the various sub-indicators;  $X_i$  is the actual score;  $X_i^{\max}$  is the highest score of the maximum value in the data for the sub-indicator concerned;  $X_i^{\min}$  is the lowest score of the maximum value in the data for the sub-indicator concerned;  $Y_i$  is the score for the sub-indicator after standardization, with values ranging from 0 to 1.

The next step is to determine weight coefficients. The trade facilitation Indicator system established in this report is based on the one used by Wilson (2003). While there are slight differences in sub-indicators, there are no significant changes in main indicators, and the number of indicators is relatively consistent. Therefore, we consider continuing to use the weight values for primary indicators as assigned by Wilson et al. (2003), which are 58.3% for Infrastructure (A), 7.2% for Customs Environment (B), 18.4% for Regulatory Environment (C), and 16.1% for E-commerce (D). By applying these weights to measure trade facilitation indicators, we can calculate the trade facilitation level indicator for each country for each year.

The weights for primary indicators are determined as shown in Table 3.

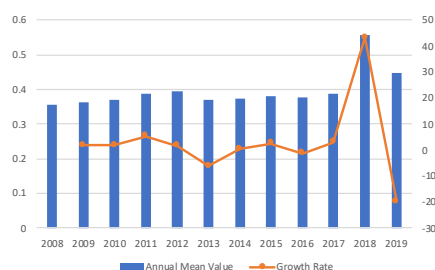
To calculate the weights, we use  $Z_j (j=1, 2, 3, 4)$  for the primary indicators,  $Y_i$  for the values of the sub-indicators, and  $n$  as the number of sub-indicators. Formula 3 is applied to calculate scores for the four primary indicators. The respective weights for each indicator are presented in Table 3.

$$Z_j = \sum Y_i / n \quad (3)$$

General Indicator	Primary Indicators	Indicator Weights	Secondary Indicators	Indicator Weights
Trade Facilitation	Infrastructure (A)	0.583	Roads (A1)	1/4
			Ports (A2)	1/4
			Air Transport (A3)	1/4
			Quality of Electricity Supply (A4)	1/4
	Customs Environment (B)	0.072	Trade-weighted Tariff Rate (B1)	1/3
			Burden of Customs Procedures (B2)	1/3
			Trade Barriers (B3)	1/3
	Regulatory Environment (C)	0.184	Policy Transparency (C1)	1/4
			Judicial Independence (C2)	1/4
			Efficiency of Legal Framework in Settling Dispute (C3)	1/4
			Burden of Government Regulation (C4)	1/4
	E-Business and Financial Services (D)	0.161	Soundness of Banks (D1)	1/4
			Ease of Access to Loans (D2)	1/4
Availability of Latest Technologies (D3)			1/4	
Internet Users (D4)			1/4	

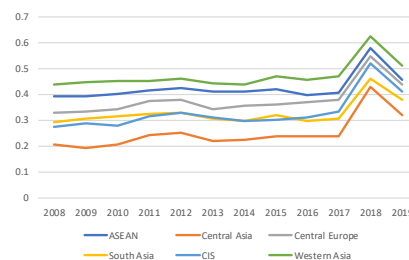
#### 4.1.2 Characteristics of Trade Facilitation Levels in Belt and Road Countries

**a. Overall, the trade facilitation levels in BRI countries have been trending upwards.** As discussed in the data processing method for trade facilitation indicators (TFIs), this report calculates the trade facilitation levels for 51 BRI countries from 2008 to 2019. As shown in Figure 2, the trade facilitation levels in BRI countries have generally been on the rise, with the most significant increase occurring between 2017 and 2018. However, there was a notable drop in 2019, which may be attributed to trade tensions between China and the United States.



**Figure 2: Changes in the Overall Trade Facilitation Levels in BRI Countries (2008-2019)**  
Data Source: Compiled manually from GCR data

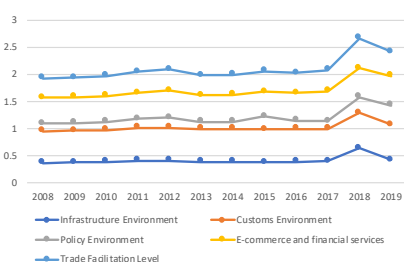
**b. Significant variations in trade facilitation levels are observed across different regions.** Figure 3 shows that among the six major regions, countries in West Asia exhibit the highest level of trade facilitation, while those in Central Asia have the lowest. Data from 2013 to 2019 clearly indicates that since the inception of the BRI, differences in trade facilitation levels among the BRI countries have gradually decreased, but a notable regional disparities has become more apparent.



**Figure 3: Changes in trade facilitation levels in different regions along the BRI route (2008-2019)**  
Data Source: Manually compiled from the GCR data

**c. There are notable variations in different aspects of trade facilitation.** Figure 4, reveals that the trade facilitation levels for customs environment and the e-commerce and financial services are the highest

and have the most significant impact on trade. Among the four primary indicators, e-commerce and financial services, infrastructure, and regulatory environment have shown relatively rapid improvements. This trend is particularly noticeable from 2017 to 2018, suggesting that BRI countries are increasingly focusing on logistics and transportation, financial services, the Internet of Things (IoT), and related developments. Meanwhile, governments of these countries are actively providing supporting policies.



**Figure 4: Vertical comparison of trade facilitation levels in BRI countries (2008-2019)**

Data Source: Manually compiled from GCR data

Based on previous researches and experiences, this report constructs a comprehensive trade facilitation assessment system comprising four scientific dimensions: infrastructure, customs environment, regulatory environment, and e-commerce and financial services. It conducts horizontal and vertical comparisons of trade facilitation levels in BRI countries on the calculation results, the report conducts horizontal comparisons. In the regional horizontal analysis, the BRI countries are divided into six major blocks. It is evident that, the overall trade facilitation levels in BRI countries are not high. Among them, countries in countries in West Asia show the highest trade facilitation levels, while countries in Central Asia have the lowest. Generally, with the advancement of the Belt and Road Initiative, trade facilitation levels in BRI countries have significantly improved.

#### 4.2 Steady Development in Trade and Investment Cooperation between China and BRI Countries

The steady growth in trade and investment cooperation between China and BRI countries have made these countries essential partners for China's foreign trade and investment expansion.

#### 4.2.1 Increasing Number of RTAs Signed with BRI Countries

In December 2014, General Secretary Xi Jinping called for the acceleration of the post free trade zones and a new open economic system, leading to a surge in China's signing of regional trade agreements (RTAs). By the end of August 2023, China has inked 21 RTAs with 28 countries and regions, including trade partners in Asia, Oceania, Latin America, Europe, and Africa. Notably, 14 of these agreements are either newly signed or upgraded RTAs after the initiation of BRI, including the China-Nicaragua Free Trade Agreement (2023), China-Pakistan Free Trade Agreement (Phase II, 2019), China-Singapore Free Trade Agreement (upgraded, 2018), China-Ecuador Free Trade Agreement (2023), the Regional Comprehensive Economic Partnership Agreement (2020), China-Chile Free Trade Agreement (upgraded, 2017), China-New Zealand Free Trade Agreement (upgraded, 2021), China-Australia Free Trade Agreement (2015), China-Maldives Free Trade Agreement (2017), China-Cambodia Free Trade Agreement (2020), China-ASEAN Free Trade Agreement (upgraded, 2015), China-the Republic of Korea Free Trade Agreement (2015), China-Georgia Free Trade Agreement (2017), China-Mauritius Free Trade Agreement (2019). Additionally, an update of China-Peru Free Trade Agreement (2019) was announced. It's evident that these agreements involve multiple countries along the Belt and Road.

The WTO data reveals that of the 161 regional trade agreements (RTAs) notified to the WTO since 2013, 75 involve Belt and Road countries, accounting for 46.6% of the total number of newly signed regional trade agreements. This includes 63 agreements signed between BRI countries and non BRI countries (comprising 39.1%), 12 agreements signed between the BRI countries (comprising 7.5%). Countries along the BRI have signed numerous agreements with other countries and regions such as the United Kingdom, the European Union, the European Free Trade Association, Chile, the Republic of Korea, and Australia. Specifically, countries along the BRI have signed 13 RTAs with the United Kingdom and 7 RTAs with the European Union. Among countries along the BRI, China, India, and Russia have signed more RTAs with each other.

Out of the 75 RTAs, 29 (38.6%) are trade in goods agreements, only one of them (1.3%) is trade in services agreement, and 45 (60.0%) cover trade in both goods and services. In terms of legal basis, 42 RTAs are signed based on both GATT Article 24 and GATS Article 5 (56.0%), 24 are signed under the provision of GATT Article 24 (32.0%), 1 is exclusively based on GATS Article 5 (1.3%), 3 are signed according to “Enabling Clause” and GATS Article 5 (4.0%), and 5 are based solely on the “Enabling Clause” (6.6%). In terms of RTA types, there is only one Customs Union and one Economic Integration Agreements (EIA), each accounting for 1.3% respectively; 25 Free Trade Agreements (FTA) (33.3%), and 45 RTAs (60.0%) combine both FTA and EIA, while 3 agreements are classified as Preferential Trade Agreements (4.0%).

#### 4.2.2 China's Trade with Belt and Road Countries Sees Remarkable Growth

Over the past decade, with the progress of the BRI, there has been substantial progress in boosting trade among the countries along the BRI route. China's trade with BRI countries and regions has steadily increased, making a significant contribution to global trade growth. From 2014 to 2019, the total trade between China and BRI countries exceeded 44 trillion yuan, with an annual growth rate of 6.1%. China has become the largest trading partner of 25 countries along the route. Customs data reveals that in 2022, China's imports and exports with BRI countries reached a historic high, growing from 6.46 trillion yuan in 2013 to 13.76 trillion yuan in 2022, representing a remarkable 19.4% year-on-year increase. This growth surpassed the overall foreign trade growth rate by 11.7 percentage points. This cumulative growth was 1.1 times the previous value, raising its share in China's total foreign trade from 25% to 32.9%, an increase of 7.9 percentage points.

From 2013 to 2022, China's exports of intermediate product to BRI countries grew, increasing 49.8% to 56.3% of its total exports. In the first half of 2023, China's imports and exports with BRI countries reached 6.89 trillion yuan, showing a 9.8% year-on-year increase. The growth outpaced the overall foreign trade growth rate by 7.7 percentage points. China experienced significant export growth in automotive

components (up by 39.3%), lithium batteries (up by 34.3%), and intermediate products like automatic data processing equipment (up by 28.9%) to BRI countries. During the same period, imports of energy products and agricultural products from BRI countries increased by 5.7% and 17.9%, respectively.

China's trade with BRI countries showed notable growth via railway transportation (23.8% increase) and road transportation (63.6% increase). Additionally, imports and exports with BRI countries in China's central and western regions increased by 23.2%, accounting for 21.2% of the total value of China's imports and exports with BRI countries during the same period, marking a 2.3% increase. Regarding trade in services, the cumulative total of China's trade in services with BRI countries and regions reached \$670 billion from 2015 to 2021, with an average annual growth rate of 5.8%. The share of China's trade in services with BRI countries during this period increased from 12% to 14.7%.

#### 4.2.3 Steady Growth in Bilateral Investments between China and BRI Countries

From 2013 to the present, China's direct investment in BRI countries has remained steady, even in the face of a challenging global investment environment. China's non-financial direct investment in BRI countries, as a proportion of total investment, has been on a rise. Over the period from 2013 to 2022, China's cumulative direct investments in BRI countries reached \$182.27 billion. Initially, from 2013 to 2016, about 70% of BRI projects focused on infrastructure and energy sectors. However, from 2017 onwards, investments in infrastructure and energy decreased to around 40%, while investments in manufacturing, services, technology, and other sectors significantly increased, accounting for about 60%. In 2022, Chinese companies' non-financial direct investment in BRI countries increased from \$11.5 billion in 2013 to \$20.97 billion (141.05 billion RMB). Their share in China's total outward direct investment also expanded, going from 12.5% to 17.9% during the same period.

From January to July 2023, Chinese companies increased their non-financial direct investment in BRI countries to 95.34 billion RMB, marking a 23.2% year-



on-year increase (equivalent to \$13.69 billion, a 15.3% year-on-year increase). This accounted for 19% of the total investment during the same period, which was an increase of 0.8% compared to the same period in 2022.

At the same time, BRI countries and regions have been steadily increasing their investments in China. According to data from the Ministry of Commerce, from 2013 to 2022, BRI countries and regions cumulatively invested over \$80 billion in China (including investments made through certain free trade zones, excluding the banking, securities, and insurance sectors). This accounted for roughly 6% of China's total actual foreign capital utilization during the same period.

#### 4.2.4 China's Economic and Trade Cooperation with BRI Countries Continuously Deepen

China has established two cross-border economic cooperation zones with neighboring countries: the China-Kazakhstan Khorgos International Border Economic Cooperation Center and the China-Laos Mohan-Moten Economic Cooperation Zone. Additionally, China has created multiple overseas economic cooperation zones in partnership with BRI countries. Currently, Chinese enterprises are investing in the construction of 69 projects related to overseas cooperation and trade, spanning across 33 countries. These projects host 1,088 enterprises, with 48 of them BRI countries. As of the end of 2022, Chinese enterprises had cumulatively invested 397.9 billion RMB in cooperation zones in BRI countries, generating 421,000 job opportunities.

When it comes to foreign projects abroad, Chinese companies experienced fluctuations in the number and value of new contracts for overseas projects with BRI countries from 2015 to 2022. In 2020, Chinese companies signed 5,611 new contracts overseas with 61 BRI countries, amounting to a new contract value of \$141.46 billion, marking an 8.7% year-on-year decrease. These contracts constituted 55.4% of China's new overseas contracts during the same period and generated a turnover of \$91.12 billion, accounting for 58.4% of the total turnover during the same period. In 2022, Chinese companies signed 5,514 new overseas contracts in BRI countries, with a new contract value

of 871.84 billion RMB, marking a 0.8% increase (equivalent to \$129.62 billion, a 3.3% decrease). These contracts contributed to 51.2% of China's total new foreign contracted project during the same period, with a turnover of 571.31 billion RMB, a 1.3% decrease (equivalent to \$84.94 billion, a 5.3% decrease), accounting for 54.8% of the total turnover during the same period. From January to July 2023, Chinese companies signed new foreign contracts amounting to 367.23 billion RMB, reflecting a 1.7% year-on-year decrease (equivalent to \$52.73 billion, a 7.9% year-on-year decrease). These contracts made up 49.2% of China's new foreign contracts during the same period, and generated a turnover of 312 billion RMB, showing an 8.4% year-on-year increase (equivalent to \$44.8 billion, a 1.5% year-on-year increase), contributing to 55.3% of the total during the same period.

In addition to economic and trade activities, China and BRI countries are actively strengthening their technological cooperation to boost the economic development. This cooperation helps these countries upgrade their industrial structures and provides technical support for key Belt and Road projects. By the end of 2021, China had entered into 84 inter-governmental technology cooperation agreements with BRI countries and regions. These agreements have supported 1,118 collaborative research projects with a total investment of 3 billion RMB. China has also hosted 14,201 young scientists from these countries for short-term research and has offered training to 180,000 researchers. Additionally, 53 joint laboratories have been set up in areas like agriculture, new energy, and healthcare.

To promote the transfer of technology, China has established eight international platforms for technology transfer in regions such as ASEAN, South Asia, Arab countries, Central Asia, Central and Eastern European countries, Africa, the Shanghai Cooperation Organization (SCO), and Latin America. Furthermore, as part of the UN South-South Cooperation Framework, China has created a "South-South Cooperation Center for Technology Transfer." As the Belt and Road Initiative progresses, various efforts like financial leasing, innovative investment and

financing platforms, diverse financial products, inclusive investment projects, and enhanced risk management capabilities will continue to improve. This will further boost cooperation in technology innovation, people exchange, the development of high-tech trade in service, increased investment in high-tech cooperation projects, and create new prospects for economic and trade cooperation in emerging areas like cyberspace, outer space, and the polar regions.

#### 4.2.5 To Guarantee Trade Liberalization and Facilitation through Financial Connectivity

Financial connectivity is a crucial aspect of the BRI. The infrastructure development and elevated geopolitical risks associated with BRI countries require not only financial support but also innovative financing tools and products to ensure the initiative's long-term success. In 2017, China's Ministry of Finance, along with the financial ministries of 28 countries, endorsed the "BRI Financing Guiding Principles," which offers financial standards and regulatory systems to enhance financial connectivity in the BRI region.

By the end of 2020, 11 Chinese banks had established nearly 80 primary institutions in 29 BRI countries, playing a significant role in the development of partner countries. By November 2019, bond market saw the issuance of six "Belt and Road" bonds (including asset-backed securities), raising funds of 6.7 billion RMB. By the end of 2022, China had entered into bilateral currency swap agreements with more than 20 BRI countries, established RMB clearing mechanisms with over 10 BRI countries, and signed cooperation agreements with financial regulatory authorities in nearly 40 BRI countries. China continues to enhance its financial services offered to these nations.

To support infrastructure development within the Belt and Road Initiative, China established the Silk Road Fund in November 2014, with an initial investment of \$40 billion. In December 2015, China initiated the establishment of the Asian Infrastructure Investment Bank (AIIB), the world's first multilateral development bank primarily focused on infrastructure investment. By the end of 2022, the Silk Road Fund had committed to investments exceeding \$20 billion for more than 70 projects. As of January 2023, the AIIB expanded its

membership from the original 57 founding members to 106 members, covering 81% of the world's population and 65% of its GDP. This made the AIIB as the second-largest global multilateral development institution after the World Bank. Between 2016 and 2022, the AIIB approved 202 projects, providing over \$38.8 billion in financing and mobilizing nearly \$130 billion in capital. These projects span 33 countries and support sustainable infrastructure development in various sectors such as energy, transportation, water, communication, education, and public health. They are instrumental in fostering a "green economic recovery" in the member countries.

To ensure financial security while strengthening trade and investment with BRI countries, China has heavily relied on export credit insurance. Since the inception of the BRI in 2013, China Export & Credit Insurance Corporation (Sinosure) has consistently provide dedicated institutions and underwriting policies to facilitate mutually beneficial, cooperative development with BRI countries. Sinosure has improved underwriting conditions, streamlined approval processes for BRI-related business, and established overseas offices and working groups, creating a direct service network with partner BRI countries. This network has facilitated policy coordination, infrastructure connectivity, unimpeded trade, financial connectivity, and people-to-people exchanges between China and BRI countries. By the end of 2022, Sinosure had collaborated with more than 240 banks, signed framework and special agreements with 39 Chinese banks, and guided various cooperation banks to provide financing support to export enterprises and BRI projects. In the entirety of 2022, Sinosure supported a total of \$193.19 billion in exports and investments to BRI countries, representing a 13.7% growth from 2021. It also paid out \$490 million in claims. As of March 2023, Sinosure has supported exports and investments in BRI countries totaling \$1.8 trillion and paid out \$9.15 billion in claims, effectively fulfilling its role in risk protection and financing facilitation.

## 5. Summary and Future Outlook

Over the past decade, the Belt and Road Initiative (BRI) has gone through three stages of development. It began in September and October 2013 when

President Xi Jinping introduced the concept of building the “Silk Road Economic Belt” and the “21st Century Maritime Silk Road”. The first “Belt and Road Forum for International Cooperation” in 2017 marked the initiative’s shift into a comprehensive strategic planning phase. In November 2021, the “Resolution of the CPC Central Committee on the Major Achievements and Historical Experience of the Party over the Past Hundred Years” emphasized the high-quality development of BRI, outlining it as the Road of Peace, Prosperity, Opening-up, Green Development, Innovation, and Civilization. This strategic vision positioned the BRI as a widely embraced international public good and vital platform for international cooperation, marking the beginning of the high-quality development phase.

In the span of a decade, the Belt and Road Initiative (BRI) has achieved significant success. It has improved trade facilitation and liberalization among BRI countries and expanded trade and investment cooperation between China and these partner nations. The core principle of “extensive consultation, joint contribution and shared benefits” is fundamental to the

BRI. Sharing the benefits of development aligns with the BRI’s original purpose and ensures its high-quality and sustainable progress. The BRI represents a visionary concept that introduces a fresh model of mutually beneficial economic development among nations. It not only offers innovative ideas for international cooperation but also provides new solutions for global governance.

The world is going through unprecedented changes, and China, through its BRI efforts to create a global community with shared future, should seize this opportunity to contribute positively to global development. In the future, the BRI should learn from its past experiences and establish a more comprehensive platform for trade and investment cooperation. It should adapt to and promote the innovative development of global governance concepts and enhance coordination within its cooperative system. While respecting existing international cooperation and global trade governance mechanisms, the BRI should collectively explore new concepts, models, and pathways for international cooperation and global governance within its own framework, thus helping to build a community with a shared future for humanity.

# Cross-border E-commerce Development and Cooperation between China and Countries of the BRI

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Boao Forum for Asia Academy

In the realm of international commerce, digital trade has emerged as a pivotal component, with a growth rate significantly higher than that of trade in services and goods. Particularly, under the Covid-19 pandemic, digital trade has become an important driving force for the recovery of the global economy. Digital trade can be categorized into two mutually reinforcing types: digitally delivered trade represented by digital trade in services, and digitally ordered trade represented by cross-border e-commerce. In the past decade, digital trade in services has flourished in the countries of the Belt and Road Initiative (BRI), while cross-border e-commerce (CBEC) is rapidly becoming a new focal point for boosting trade and driving economic development between China and these countries.

## 1. Fast growth of digital trade in services and e-commerce in the countries of the BRI

E-commerce is the application and digitization of traditional trade in goods. Many components of e-commerce are connected to digital trade in services. E-commerce would not be possible without the support of productive and knowledge-based digital trade in services. Over the past decade, cross-border e-commerce and global digital trade in services have been growing fast by mutually reinforcing each other. It is fair to say that the explosive growth of cross-border e-commerce has been enabled by digital trade in services. Meanwhile, it's also true that the booming cross-border e-commerce has also created diversified scenarios and growth opportunities for digital trade in services.

**The past decade saw a fast growth of digital trade in services in the countries and regions of the BRI.** In 2021, global digital trade in services was valued at USD 3.8 trillion, with a 77% increase from 2011 and a 15% increase from 2019, the year before the outbreak of COVID-19. Europe is a global leader in digital trade in services, making up 53% of the international market in recent years. Asia had increased its share of global digital trade in services from 6.6% in 2005 to 20.5% in 2011 and further to 25.6% in 2021 (Figure 1). Eurasia is home to the majority of BRI countries. In 2021, the export value of digital trade in services of China and 64 BRI countries reached USD 848 billion<sup>1</sup> (Figure 2), accounting for 22.25% of the global total. Among them, China's digital trade exports were USD 194.8 billion, or 5.11% of the world's total, ranking fifth globally (Figure 6), while such exports of India and Singapore were USD 185.1 billion and USD 148.4 billion respectively, ranking sixth and ninth in the world.

<sup>1</sup> Countries along the "Belt and Road" include: Southeast Asia (11 countries): Brunei Darussalam, Cambodia, Indonesia, Lao People's Dem. Rep., Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, Viet Nam; CEEC (16 countries): Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia; South Asia (7 countries): Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka; Central Asia (6 countries): Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan; West Asia (18 countries): Armenia, Azerbaijan, Bahrain, Georgia, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, Yemen; CIS (4 countries): Belarus, Republic of Moldova, Russia, Ukraine; two other countries: Egypt and Mongolia.

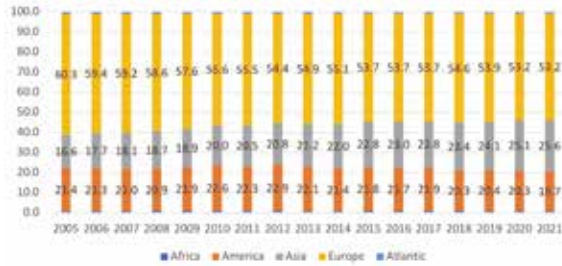


Figure 1: Share of digital trade in services by region, 2005-2020  
Source: UNCTAD



Figure 2: Year-by-year exports of digital trade in services of China and other countries along the Belt and Road  
Source: UNCTAD, in millions of dollars

**ASEAN, South Asia and CEE countries have performed remarkably in digital trade in services.** In 2021, ASEAN's digital trade in services amounted to USD 212.4 billion (Figure 3), and the number for South Asia and CEE was USD 192.9 billion and USD 118.7 billion respectively (Figure 4). From a country perspective, India was the dominant player in South Asia, while Singapore was a leader among ASEAN countries, followed by the Philippines, Thailand, Malaysia, and Indonesia which were close to each other. Among CEE countries, Poland, Romania, the Czech Republic, and Hungary were in the top echelon. Those countries in West Asia, CIS, and Central Asia reported USD 85 billion (Figure 5), USD 39.8 billion and USD 1.3 billion<sup>2</sup> of digital trade in services respectively, with great potential to be unlocked in the future.

<sup>2</sup> Data for certain countries are not available; values for certain year and for certain countries are projected data.

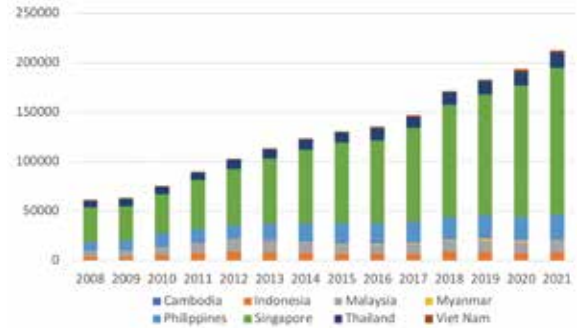


Figure 3: Exports of digital trade in services from select ASEAN economies along the Belt and Road  
Source: UNCTAD, in millions of dollar

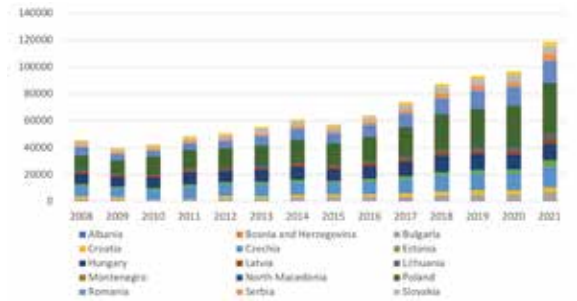


Figure 4: Exports of digital trade in services from CEE countries along the Belt and Road  
Source: UNCTAD, in millions of dollars

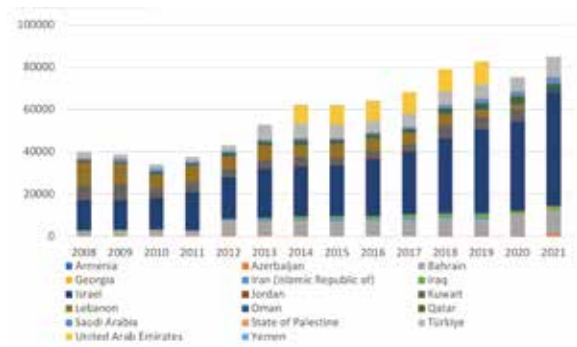
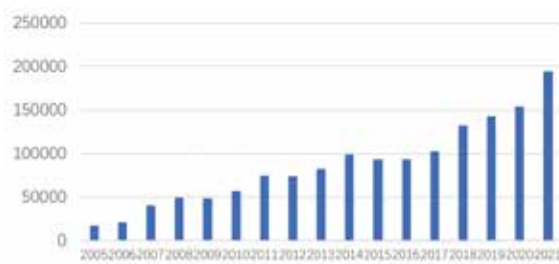
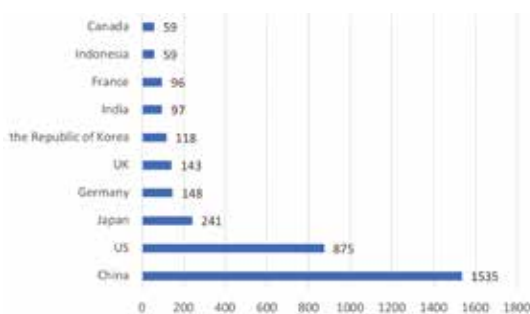


Figure 5: Exports of digital trade in services from West Asian countries along the Belt and Road  
Source: UNCTAD, in millions of dollar



**Figure 6: China's exports of digital trade in services, 2010-2021**  
Source: UNCTAD, in millions of dollars

In terms of e-commerce, the countries along the Belt and Road also have performed well. China<sup>3</sup>, the Republic of Korea, India and Indonesia ranked first, sixth, seventh and ninth among the top 10 countries by e-commerce sales in 2022 (Figure 7)<sup>4</sup>.



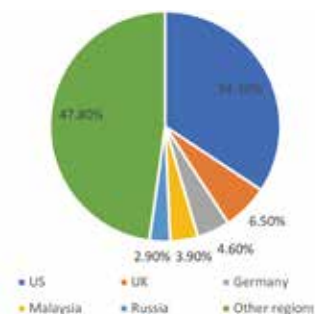
**Figure 7: Top 10 countries by e-commerce sales in 2022**  
Source: Statista, in billions of United States dollars

**China's e-commerce industry ranks first in the world by measure of online retail sales, the number of online subscribers, and the amount of mobile payments.** In 2021, China's cross-border e-commerce imports and exports reached 1.92 trillion yuan (or USD

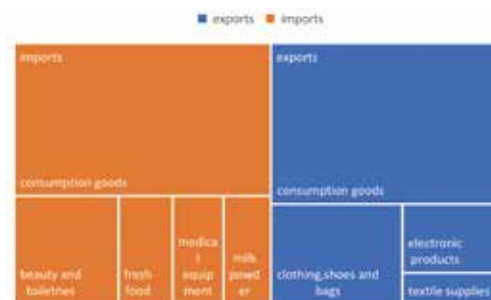
3 The eCommerce market encompasses the sale of physical goods via a digital channel to a private end user (B2C). Incorporated in this definition are purchases via desktop computer (including notebooks and laptops) as well as purchases via mobile devices such as smartphones and tablets. The following are not included in the eCommerce market: digitally distributed services, digital media downloads or streams, digitally distributed goods in B2B markets nor digital purchase or resale of used, defective or repaired goods. All monetary figures refer to the annual gross revenue and do not factor in shipping costs. All figures are estimate.

4 The ROK is one of the countries that have signed cooperation documents with China on the construction of the Belt and Road; in 2015, the two sides signed the Memorandum of Understanding on Cooperation in the Construction of the Silk Road Economic Belt and the 21st Century Maritime Silk Road, as well as the Eurasian Initiative, along with a series of other documents.

297.6 billion)<sup>5</sup>, an 18.6% growth from 2020 and an almost tenfold increase from 2016, raising its share in the country's foreign trade from under 1% in 2015 to 4.9%. In 2022, the value of CBEC imports and exports exceeded 2 trillion yuan for the first time, reflecting a year-on-year growth of 7.1%. This accounted for 4.9% of the total value of China's foreign trade in goods, on a par with the situation in 2021. The U.S. stood out as the primary destination for China's CBEC exports, making up 34.3% of the total exports (Figure 8). Consumer goods constituted over 90% of the goods traded via CBEC (Figure 9). In 2022, China's imports of consumer goods amounted to 1.9 trillion yuan, and CBEC alone contributed 560 billion yuan, which met the diversified consumption needs of the household sector. In the first half of 2023, CBEC maintained its good momentum, with imports and exports totaling 1.1 trillion yuan, a year-on-year increase of 16%.



**Figure 8: China's cross-border e-commerce export destinations in 2022**  
Source: Ministry of Commerce, China



**Figure 9: China's cross-border e-commerce import and export structure in 2022**

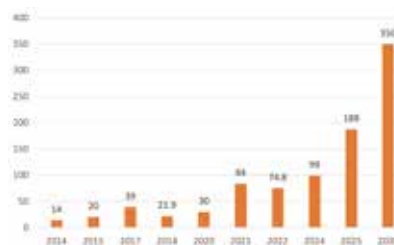
Source: Ministry of Commerce, China

5 Source: Chinese customs.

China's leading digital platforms have continued to expand in international markets. Firstly, well-established platforms are experiencing continuous growth in their global business. Alibaba Group has indicated its commitment to the "cross-border plus local" model for its international retail business. During the fourth quarter of the fiscal year 2022-2023, Alibaba's international retail platforms, including Lazada, AliExpress, Trendyol, and Daraz, reported a 15% year-on-year increase in orders and a 41% year-on-year growth in revenue. Since 2023, the group has injected over USD 1.1 billion in Lazada with strong commitments to Southeast Asia. Secondly, emerging e-commerce platforms target overseas markets right from the start with their successful experiences in China and their advantageous supply chains. Shein, for instance, entered the global market by focusing on fast-fashion womenswear, catering swiftly to the needs of consumers, particularly the needs of Generation Z and Millennials. By following its "small orders and rapid returns" model, and capitalizing on the benefits of the local supply chain, Shein has achieved remarkable growth overseas. In 2022, the company reported a revenue of USD 23 billion, with a net profit of USD 800 million and an overall valuation of USD 66 billion<sup>6</sup>. In the first half of 2023, Shein reached a new high in its profitability. Platforms rooted in the domestic social e-commerce model, like TEMU under Pinduoduo and TikTok Shop under Douyin, are rapidly expanding into the United States. The nature of viral marketing of social apps supports swift market entry abroad. Notably, the low price discount strategy in the U.S. market that they targeted, proves enticing to consumers, especially in a high-inflation environment. Thirdly, CBEC platforms are adopting the fully hosted approach to their overseas operations, which will intensify future competition. In this way, the e-commerce platform handles all services including warehousing, marketing and after-sales services, while merchants are solely responsible for supplying goods. This approach aids platforms in streamlining resource integration to enhance operational efficiency and capitalizing on their reputation to expand their markets, while the firsthand distribution model helps competitive manufacturers in the supply chain to scale up their sales. However, the competition between platforms and between merchants will shape an increasingly competitive market.

**The Republic of Korea has a mature and competitive e-commerce market environment, thanks to its advanced network infrastructure and a high penetration rate of smartphones.** With Coupang as a standout example, a group of prominent Korean e-commerce platforms have floated their shares in the U.S. stock market. In 2022, the Republic of Korea's online shopping turnover hit a remarkable milestone, reaching KRW 206.4 trillion (approximately USD 167.3 billion)<sup>7</sup>. In the past, the United States was the primary foreign source for online shopping among Korean buyers. However, with the diversification of consumption habits, Asian platforms like AliExpress are making efforts to establish a presence in the Korean e-commerce market.

**Turning to India, many experts anticipated a sustained high growth rate of around 20% in its e-commerce market for the upcoming years<sup>8</sup>.** The U.S. International Trade Administration (ITA) anticipated that India's e-commerce business could reach USD 136.5 billion by 2026, with an average annual growth rate of 18.3%<sup>9</sup>. According to Statista, India's e-commerce industry is projected to expand to USD 350 billion by 2030 (Figure 10). Nevertheless, the country's stringent regulatory policies concerning the e-commerce market have sparked controversy within the industry and even within the government.



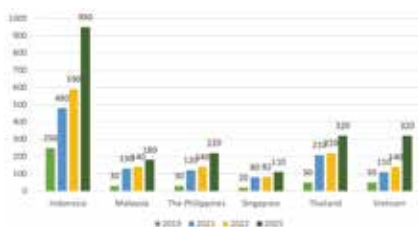
**Figure 10: Projected market size of India's e-commerce industry**  
Source: Statista, in billions of United States dollars

6 SHEIN said to have secured \$2 Billion funding, with latest valuation at \$66 billion  
<https://baijiahao.baidu.com/s?id=1766132486463943695&wfr=spider&for=pc>  
7 Source: Statistics Korea.  
8 Statista expects India's e-commerce to reach \$188 billion by 2025; market research firm Mordor Intelligence says the Indian e-commerce market is projected to grow at a CAGR of 21.5 percent in 2022-2027; and Bain & Company and Flipkart point out that the Indian e-commerce market is expected to grow by 25-30 percent per annum over the next five fiscal years before reaching \$120-140 billion by FY2026.  
9 India - Country Commercial Guide  
<https://www.trade.gov/country-commercial-guides/india-online-marketplace-and-e-commerce>

**Indonesia holds a significant position in the Southeast Asian e-commerce market.** As various international platforms strive to expand their business in Indonesia, several local e-commerce companies are also catching up quickly. Shopee remains a leader in terms of the number of visits, with an average of 167 million visits per month in the second quarter of 2023<sup>10</sup>. TikTok has 325 million users in Southeast Asia, 125 million of whom are located in Indonesia. Therefore, Indonesia has easily become the first stop of TikTok's foray into the Southeast Asian e-commerce market. TikTok has announced plans to invest billions of dollars in the region over the next few years. Backed by Alibaba, Lazada, a prominent representative of local e-commerce in Southeast Asia, is further increasing its investments in areas like logistics construction. Fierce market competition, coupled with high logistics costs, has made the prospect of profitability uncertain, and some platforms have chosen to withdraw from the market. For example, the Jingdong Indonesia station stopped its services in March 2023.

**2. CBEC collaboration between China and ASEAN stands as a key area for both parties in constructing the Digital Silk Road (DSR)**

ASEAN is a highly active region for e-commerce. In 2022, e-commerce in Vietnam, the Philippines, Indonesia, Singapore, Malaysia and Thailand together reached about USD 131.2 billion, growing 16% year-on-year. Notably, the growth rates in Indonesia and Vietnam were 22% and 26% respectively (Figure 11). ASEAN's population has a reasonable age structure, and the penetration rate of e-commerce in the group of "digital natives" has reached nearly 92%. Taking all these factors into account, ASEAN's e-commerce industry is expected to maintain a positive trend in the future.



**Figure 11: E-commerce turnover and forecasts in select ASEAN countries, in billions of dollars**

Source: "E-Conomy Sea 2022: Through the waves, towards a sea of opportunity," Google, Temasek, and Bain Company, 2022.

CBEC collaboration between China and ASEAN is a vital focal point for both parties in constructing the DSR. **Firstly, the continued economic growth of China and ASEAN in recent years, coupled with their status as one of the most important trading partners of each other, sets a crucial backdrop for the swift advancement of bilateral CBEC cooperation.** China has emerged as a key destination for ASEAN's exports of primary and intermediate goods, absorbing 14.8% of the region's exports in 2022. ASEAN has maintained its position as China's primary trading partner for three consecutive years. In 2022, the total trade between the two sides was valued at 6.52 trillion yuan, marking a 15% year-on-year increase. China's trade with ASEAN accounted for 15.5% of its total foreign trade, playing a pivotal role in the country's foreign trade.

**Secondly, the improved infrastructure in Southeast Asia has enhanced its connectivity within the region and elevated its digital capabilities, providing crucial support for bilateral CBEC cooperation.** Key infrastructure projects, including the China-Laos Railway, Yawan High-Speed Railway, and Cambodia's Golden Harbor Expressway, have been successfully completed or advanced, significantly enhancing Southeast Asia's connectivity and facilitating the cross-border movement of factors of production. Both China and ASEAN are making rapid progress in digital infrastructure and digital capacity. By the end of 2022, China had achieved a 75.6%<sup>11</sup> Internet penetration rate, aiming to create a more inclusive and balanced digital society. Several ASEAN countries, including Brunei, Singapore, Malaysia, Thailand, and the Philippines, had achieved an Internet penetration rate exceeding 80% as of June 2021<sup>12</sup>. However, a digital divide remains within ASEAN, with around 70% of data centers concentrated in Singapore, Indonesia, and Malaysia. ASEAN will need more efforts in bridging this gap in the future<sup>13</sup>.

11 Source: the Digital China Development Report (2022).

12 Source: Statista

13 Thailand's Ministry of Commerce joins forces with Shopee and other platforms to combat online infringements at <https://chuhaiyi.baidu.com/news/detail/19537120>



**Thirdly, both China and ASEAN give top priority to CBEC development, offering policy support for bilateral cooperation.** Multilaterally, the Regional Comprehensive Economic Partnership (RCEP) incorporates a chapter on e-commerce, guiding the direction of e-commerce cooperation between China and ASEAN. China has signed a consensus document with ASEAN on digital economy, and is negotiating with the region about the 3.0 version of the China-ASEAN Free Trade Agreement (FTA), which is expected to facilitate bilateral CBEC cooperation under a new digital economy arrangement. Bilaterally, China and Singapore have established an e-commerce cooperation mechanism and concluded follow-up negotiations on substantial FTA updates in April 2023. High-standard trade and economic rules concerning digital economy have been included in a new chapter on telecommunications. Furthermore, ASEAN is intensifying efforts to combat online intellectual property infringements in support of e-commerce platforms.

**Fourthly, China's increasing investments in Southeast Asia's manufacturing and Internet sectors are infusing fresh impetus into building a comprehensive bilateral CBEC ecosystem.** China is among the top five sources of investment in ASEAN<sup>14</sup>. In 2021, China's direct investment flows into ASEAN reached USD 19.73 billion, up by 22.8% over the previous year. By the end of 2021, China had directly and actually invested USD 140.3 billion in ASEAN, with manufacturing being the leading recipient (attracting nearly 30% of the investment). In the realm of the digital economy, ASEAN is emerging as a new target for China's Internet venture capital. According to incomplete statistics, Chinese institutions invested a total of USD 5.954 billion<sup>15</sup> in 24 Southeast Asian projects in 2021.

**Fifthly, cross-border payments between China and ASEAN are rapidly evolving, providing vital**

**technical support for bilateral CBEC collaboration.** Given the prevalence of small and medium-sized platforms in the field of CBEC, high payment costs and complex processes will hinder the continuous growth of this emerging sector. Enhancing regional payment connectivity was addressed as a key topic at the 42nd ASEAN Summit in 2023, and many ASEAN countries are considering to collaborate in the fields of cross-border payment systems and local currency settlement frameworks. Bank Indonesia, Bank of Thailand, Bank Negara Malaysia and the Monetary Authority of Singapore have jointly launched the Quick Response Code Indonesian Standard (QRIS) based on cross-border QR code payments, and are continuing to expand its scope. Moreover, several central banks have showed significant interest in digital currency payments. Payment organizations with strong international or regional influences are emerging both in China and ASEAN. For example, China's Alipay and Tenpay are actively expanding their cross-border payment operations, while platforms like Thailand's PromptPay and Singapore's PayNow have demonstrated their advantages of low rates, 24/7 service, and an improved customer experience.

Looking ahead, the governments of China and ASEAN countries are going to introduce more targeted policies to promote the development of CBEC. More importantly, the entry into force of RCEP will open a new chapter for regional CBEC cooperation. The total amount of CBEC of RCEP member countries reached USD 285 billion in 2020, accounting for 53.3% of the world total. The CBEC markets of China and ASEAN are expected to benefit tremendously from improved institutions and wider openness in an increasingly connected region.

### **3. CBEC is an emerging source of growth for China and Central and Eastern European (CEE) countries to build the BRI.**

In recent years, economic and trade exchanges between China and CEE countries have continued to deepen. Since 2017, all 16 countries in CEE have involved in the BRI. From 2012 to 2022, China's trade with CEE countries increased at an average annual rate of 8.1% while China's imports from CEE countries grew at an average annual rate of 9.2%. From 2012 to

14 Data from the ASEAN Secretariat showed that the top five sources of net FDI inflows into ASEAN in 2021 were the United States, the European Union, ASEAN, China, and Japan, accounting for 22.98%, 15.24%, 12.02%, 7.81%, and 6.88%, respectively.

15 VC Nuggets in Southeast Asia: VC/PE increases investment to support Chinese enterprises' expansion overseas, <https://baijiahao.baidu.com/s?id=1735293091603194740&wfr=spider&for=pc>

2021, goods traded for production between China and CEE countries exceeded 70% of bilateral trade. When the trade partners are countries with a good industrial foundation such as the Czech Republic, Slovakia and Hungary, this number is as high as 90%<sup>16</sup>. This shows that China and CEE countries are closely related in the production side, while these trade counterparts are also looking to benefit from China's huge market by exporting more consumer goods to China, and better integrate into China's dual-cycle system. For example, China's imports of foods and agricultural products from CEE countries grew at a compound annual growth rate of 7.4% between 2013-2022<sup>17</sup>. The exports of agricultural products are universally valued in these countries.

CBEC cooperation provides a new opportunity for China and CEE countries to jointly build the BRI. **First, the China-Europe Railway Express has become a bridge connecting China with CEE countries and radiating to the whole Europe.** In 2022, the China-Europe Railway Express ran 16,000 trains. Among the 24 countries reached by the China-Europe Railway Express, half of them are countries along the Belt and Road, among which Hungary and Slovakia have become land-based hubs connecting Europe and Asia. During the pandemic, the China-Europe Railway Express withstood the test and shipped 7,000-ton anti-epidemic materials in more than 1,000 kinds, ensuring the safety and health of people in the countries along the route and the stability of supply chains between China and these countries. Thanks to railroad transportation, the products carried on the trains are rich and diversified, covering a wide range of daily necessities and consumer electronics, which are the main sources of CBEC. **Secondly, China and CEE countries have strengthened the e-commerce cooperation mechanism, and have done matchmaking for e-commerce enterprises along the route through international exhibition platforms.**

In June 2021, China and representatives from Albania, Hungary, Serbia, Montenegro, Slovenia, and other CEE countries launched together the China-CEEC dialogue mechanism on e-commerce cooperation. The China-Central and Eastern European Countries Expo (hereinafter referred to as the "China-CEEC Expo") has become an important bridge between CBEC enterprises in China and CEE. The portfolio of CBEC, China-Europe Railway Express and overseas warehouses is rising as a new model for trade and economic cooperation between China and CEE, which will promote the high-quality development of China-Europe Railway Express and overseas warehouses.

The CBEC cooperation between China and Hungary is a success story. **Firstly, the economic relations between the two sides continue to deepen, and Hungary has a relatively strong foundation for the e-commerce market.** In 2020, China's investment in Hungary bucked the trend, and for the first time, China became the primary source of foreign investment in Hungary. In 2022, China-Hungary bilateral trade volume increased by 51% compared with 2019. Hungary's e-commerce retail sales are growing dynamically, at a rate of 26% in 2021, and the share of e-commerce retail in total retail is expected to exceed 16% by 2026<sup>18</sup>. **Secondly, Hungary is one of the first European countries to join the BRI and attaches great importance to cooperation with China.** Hungary has actively engaged with Chinese partners, utilized international exhibition platforms to expand e-commerce visibility, and innovated CBEC cooperation mechanisms with China. In May 2023, at the Third China-CEEC Expo, Hungary became the sole guest country of honor. As the host city of this event, Ningbo saw its imported consumer goods from CEEC grow 75.4% year on year from January to April 2023. Meanwhile, Ningbo imported 80.09 million yuan worth CBEC goods from CEE, mainly consumer goods, reflecting again CBEC's important feature of having "low investment, short cycle, quick effect, and high benefit" in satisfying diversified needs of consumers<sup>19</sup>.

16 Review and Prospects of China-Central and Eastern European Countries Bilateral Trade in Goods, Yuhong Shang and Lin Zhang, *Russian Studies* 2023, No. 2.

17 Industry Report on Food and Agricultural Products Imports from Central and Eastern European Countries, published at the 3rd China-CEEC Expo and International Consumer Goods Fair.

18 Hungary's e-commerce retail sales to grow 22% year-on-year in 2021 <http://hu.mofcom.gov.cn/article/jmxw/202206/20220603315918.shtml>

19 Data from Ningbo Customs

The Central Europe Trade and Logistics Cooperation Zone, located in Budapest, has established a "dual-zone linkage" mechanism with the China Cross-Border E-Commerce Comprehensive Pilot Zone in Linyi of Shandong province and Ganzhou of Jiangxi province. It has also signed a "dual-zone linkage" cooperation memorandum with the Jinyi Area of the China (Zhejiang) Pilot Free Trade Zone, the first of its kind signed between China's Yangtze River Delta region and Central Europe Trade and Logistics Cooperation Zone. This mechanism can save more than 50% of shipping time, about 33% of logistics costs and more than 10% of warehousing costs for CBEC enterprises.

#### **4. CBEC platforms in the countries of the BRI need to pay attention to the compliance risk brought by policy changes.**

As the total size of CBEC continues to expand, many governments have seen the huge potential of the industry while at the same time introducing targeted initiatives to strengthen regulation, especially tax regulation. In the future, CBEC practitioners in the countries of the BRI need to adapt to the dynamic regulatory environment and rules.

The European Union (EU) eliminated value-added tax (VAT) and tariffs exemptions for imports of low value consignments. In July 2021, new VAT regulations came into force in the EU, which eliminated VAT and tariffs exemptions for imports of low value consignments not exceeding EUR 22. However, those valued between EUR 22 and EUR 150 remained exempt from tariffs. In addition, the EU created The Import One-Stop Shop (IOSS), which simplifies the VAT declaration process for consignments imported into the EU that do not exceed EUR 150. Under this framework, e-commerce platforms are considered "deemed suppliers", i.e., taxable persons who purchase consignments from foreign suppliers and sell them to their customers. This measure has made CBEC platforms more accountable for ensuring the payment of VAT. The EU's assessment on the effect of the reform measures in the first six months of its implementation showed that approximately EUR 2 billion of VAT was collected specifically in relation to imports of low value consignments with an intrinsic value not exceeding EUR 150. Of this, EUR 1.1 billion of VAT was collected via

the IOSS, with its top 8 registered traders accounting for 91% of all transactions declared for imports into the EU via the system. In May 2023, the EU launched a new reform initiative to eliminate the tariff exemption for goods valued under EUR 150, with the proposed extension of the IOSS to cover all distance sales of imported goods. The EU believes that removing the EUR 150 limit will increase tax revenues and create a level playing field between foreign sellers and the domestic marketplace<sup>20</sup>. It can be seen that CBEC platforms are not only unable to enjoy tax benefits, but also have a heavier responsibility in the payment of VAT, so they need to pay attention to the legal risks in this regard.

Since 2016, the U.S. has applied the principle of de minimis to CBEC, exempting packages worth less than USD 800 from tariffs. The Trump administration has used tariffs as a weapon to curb imports. In particular, it has imposed a 25% punitive tariff on the imports from China. As a result, imports through the de minimis channel have increased rapidly, becoming a legitimate means for U.S. importers and consumers to circumvent tariffs. For example, after U.S. importers import goods from China to the U.S. West Coast, the goods enter the country but do not clear customs. Instead, they are transferred to Mexican bonded warehouses. After the US consumers place orders online, they will be sent to the US in separate packages<sup>21</sup>. From 2018 to 2021, the number of low-value parcels entering the U.S. was 410 million, 500 million, 640 million, and 770 million respectively, with about half of them coming from China. The Covid-19 pandemic has catalyzed consumers' enthusiasm for online shopping, and the amount of goods going through the de minimis channel was \$67 billion and \$40 billion in 2020 and 2021 respectively<sup>22</sup>. The Select

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20 European Commission, Proposal for a Council Directive amending Directive 2006/112/EC as regards VAT rules relating to taxable persons who facilitate distance sales of imported goods and the application of the special scheme for distance sales of goods imported from third territories or third countries and special arrangements for declaration and payment of import VAT, 2023/0158(CNS)

21 WSJ: Retailers Using \$800 Tax Exemption to Legally Avoid Taxes on \$67 Billion in Goods  
<https://www.r435.com/6871.html>

22 The \$67 Billion Tariff Dodge That's Undermining U.S. Trade Policy, The New York Times

Committee on the Strategic Competition Between the United States and the Chinese Communist Party noted that TEMU and Shein ship nearly 600,000 packages free of import duty to the U.S. every day, which is equivalent to about 210 million packages annually. In 2021, more than 60% of the goods entering the U.S. below the “de minimis threshold” came from China, of which TEMU and Shein may account for nearly half<sup>23</sup>.

In light of this, new CBEC regulatory policies may be in the pipeline. In June 2023, U.S. lawmakers across the two parties and from both the House and the Senate again proposed changes to the de minimis policy because traditional U.S. retailers bear tariffs on larger imports while CBEC companies enjoy de minimis benefits from dispersed parcels, which is inconsistent with the principles of fair trade<sup>24</sup>. In January 2022, U.S. Representative Earl Blumenauer proposed legislation on CBEC to exclude “non-market economies” from the de minimis system. The large CBEC platforms from China have been a concern for the U.S. government. In April 2023, the U.S.-China Economic and Security Review Commission (USCESRC) released a report on its investigations of TEMU and Shein, concluding that a number of market and non-market barriers have caused Amazon to shut down its China business while Shein and TEMU have rapidly expanded their markets in the U.S. on the contrary. The report warns that the U.S. government needs to pay attention to the risks in the areas of data security, copyright protection, tariffs and customs inspections.

Emerging economies have also introduced new regulatory policies. Brazil's tax compliance program (Remessa Conforme) will come into effect in August 2023 and is intended to strengthen import regulations on CBEC platforms. For platforms that join the program, sellers can enjoy duty-free concessions and convenient customs clearance for cross-border parcels worth less than USD 50, although subject to a 17%

ICMS. But parcels valued above USD 50 will be subject to 60% tariff and 17% ICMS. Worried that the rise of CBEC will have a negative impact on the country's small and medium enterprises (SMEs), Indonesia plans to limit the minimum price of goods sold by foreign merchants on their platforms, and has voiced concerns to CBEC platforms about the possible impact of the fully hosted model.

Overall, CBEC will continue its strong momentum, driven by economic growth potential and accelerated transition to the digital economy in the countries of the BRI. However, the slowdown in global economy and trade, reshaped supply chains, and changes in tax and digital regulatory policies in many countries will bring challenges to the development of e-commerce in the countries along the Belt and Road. This requires policymakers in China and BRI economies to take care of the well-being of local residents, safeguard globalization and regional integration, reduce barriers to digital trade, push forward the alignment of e-commerce and digital trade rules and standards, proactively address compliance risks, and improve the business environment for the development of CBEC. Digital enterprises may consider strengthening the construction of overseas warehouses, optimizing localized services, and helping localities to strengthen digital capacity building and digital connectivity. Financial institutions should provide CBEC with more convenient and secure B2B and B2C payment and financing services, especially using financial technology to develop moderately priced currency risk hedging tools for small and medium-sized CBEC companies, hence tackling the pain points of high exchange fluctuations of some less traded currencies<sup>25</sup>. In the Asia-Pacific region, CBEC enterprises should also fully grasp the institutional dividends brought about by the entry into force of new-generation free trade agreements such as RCEP and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), better adapt to the market characteristics in the era of digital trade, and

23 Temu, Shein in the U.S. again “named” small pieces of duty-free can be sustained?

<https://weibo.com/1678221494/N6UEsvBfJ>

24 U.S. Congress may amend trade bill to strengthen small parcel regulation. Will it affect cross-border e-commerce?

[https://m.thepaper.cn/api\\_prom.jsp?contid=23566942](https://m.thepaper.cn/api_prom.jsp?contid=23566942)

25 An Exploration of Exchange Rate Risk Management for Cross-Border E-Commerce Exporters, Hongbo Cai and Chenyin Yan, China Money Market, August 2023

understand the market environments and consumer preferences of various economies, so as to promote the long-term development of the industry.

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An Exploration of Exchange Rate Risk Management for Cross-Border E-Commerce Exporters, Hongbo Cai and Chenyin Yan, China Money Market, August 2023

# Belt and Road Initiative: Status and Future of Connectivity

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Connectivity is a priority and a core component of the Belt and Road Initiative (BRI). Since its introduction in the fall of 2013, BRI has experienced a decade of exceptional growth from blueprint design phase focused on conceptualization and groundwork to comprehensive implementation phase that has generated results through one practical project after another. A connected framework of “six corridors and six channels serving multiple countries and ports” has been formed with a large number of strategic infrastructure cooperation projects being built and put into use in the fields of road, railway, port, aviation, power and energy pipeline around the world. These projects have achieved very satisfactory exemplary effects, have been widely acclaimed in the participating countries and have elevated the status of infrastructure construction in many parts of the world. It is safe to say BRI is emerging as a popular platform for global public goods and international collaborations created by China for the benefit of the world.

The fruitful results from the connectivity agenda of BRI are not only a boost to China’s economic transformation and its efforts to shape a new landscape of holistic opening-up, but also a great contributor to global growth, prosperity and governance. They are expected to blaze a new trail for shared modernization of countries while creating new drivers for economic globalization that is losing its momentum. At the same time, however, it is important to note that the

connectivity of BRI is never a smooth journey. Amid the great changes never seen in the past century, increased competition among big powers, sluggish world economy, heightened geopolitical volatility and escalated global challenges have come together to expose quite a few connectivity projects to a higher level of complicated risks and external uncertainties in the fields of international politics, economy, society and security. In October 2023, the Third Belt and Road Forum for International Cooperation was convened to witness the tremendous progress the participating countries have achieved in terms of connectivity in the past decade. Looking ahead, the BRI connectivity is expected to enter a new phase of high-quality, sustainable development.

## 1. Latest Progress in Connectivity

### 1.1 *The Key to BRI: Connectivity*

From the policy trajectory, connectivity has been the primary goal since the proposal of the Belt and Road Initiative. When speaking at Kazakhstan’s Nazarbayev University in September 2013, Chinese President Xi Jinping proposed to join hands building a Silk Road Economic Belt, which gave birth to the idea of “improving road connectivity” by opening up the transportation channel from the Pacific to the Baltic Sea and gradually forming a transportation network that connects East Asia, West Asia and South Asia. In October 2013, President Xi Jinping proposed on his Indonesian trip to launch the Asian Infrastructure

Investment Bank (AIIB) and join efforts with countries in the region to build a new “Maritime Silk Road” in the 21st century to enhance connectivity with ASEAN countries.

In the subsequent key policy documents and meetings to drive forward the initiative, connectivity has remained one of the focal areas. In December 2014, the Strategic Planning on Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road was introduced to unveil implementation measures at provincial and municipal levels to connect with the initiative. The construction of cross-border transportation routes became a priority for many provinces. In March 2015, the National Development and Reform Commission, Ministry of Foreign Affairs and Ministry of Commerce jointly released the Vision and Actions on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road, which specifies infrastructure connectivity as one of the priorities in advancing the BRI and aims to promote the construction of international transport routes and create an extensive infrastructure network that covers a wide range of areas of roads, railways, ports, aviation, oil and gas pipelines, regional power grids and cross-border optical cables, links sub-regions in Asia and connects Asia, Europe and Africa.

In May 2017, the inaugural Belt and Road Forum for International Cooperation was held in Beijing. In his keynote speech at the opening ceremony, President Xi Jinping made it clear that “infrastructure connectivity is the foundation of development through cooperation. We should promote land, maritime, air and cyberspace connectivity, concentrate our efforts on key passageways, cities and projects and connect networks of highways, railways and sea ports. The goal of building six major economic corridors under the Belt and Road Initiative has been set, and we should endeavor to meet it. We need to seize opportunities presented by the new round of change in energy mix and the revolution in energy technologies to develop global energy interconnection and improve trans-regional logistics network”. The Joint Communiqué mentioned “connectivity” for 12 times and made a list of 14 major deliverables in the field of connectivity. In June 2017, the National Development and Reform

Commission and the State Oceanic Administration jointly released the Vision for Maritime Cooperation under the Belt and Road Initiative, which lists enhancing international cooperation in shipping and ports and promoting maritime connectivity as one of the key targets.

In April 2019, the Second Belt and Road Forum for International Cooperation took place in Beijing. In addressing the opening ceremony, President Xi Jinping stressed connectivity as the key to jointly building the Belt and Road. There were 20 mentions of “connectivity” in the Joint Communiqué and a number of bilateral and multilateral documents were signed on connectivity cooperation. At the third symposium on the development of the Belt and Road Initiative in Beijing in 2021, President Xi Jinping delivered an important speech, emphasizing infrastructure connectivity as an important direction, connectivity of rules and standards as a vital support, and people-to-people bonds across the participating countries as a key basis. He called for deepened connectivity by improving the four-in-one connectivity network that covers land, maritime, aviation and cyberspace transport, enhancing cooperation on traditional infrastructure projects, advancing partnerships on new infrastructure projects and optimizing the connectivity of rules and standards, thus contributing to global connectivity.

### ***1.2 A Highly Productive Decade for Connectivity***

“Six corridors and six channels serving multiple countries and ports” is the main framework for connectivity cooperation under the Belt and Road Initiative. During the past decade, a large number of connectivity projects have been effectively implemented under the framework. This is a remarkable achievement.

**Northeast Asia. The China-Mongolia-Russia Economic Corridor** has been smoothly advanced in coordination with Russia’s Eurasian Economic Union framework and Mongolia’s Steppe Road plan. Successively, the three countries have adopted the Outline of the Development Plan on Establishing the China-Mongolia-Russia Economic Corridor, the Intergovernmental Agreement on International Road Transport along the Asian Highway Network and a

Memorandum of Understanding on Establishing a Joint Mechanism to Push forward the Implementation of the China-Mongolia-Russia Economic Corridor. These agreements have been signed to support the development of cross-border infrastructure connectivity network dominated by railways, highways and border ports. In Russia, signature collaborative projects of one pipeline and two bridges have been completed: in December 2019, the China-Russia eastern natural gas pipeline became fully operational, with annual transmission capacity up to 38 billion cubic meters. It is the world's largest natural gas pipeline by measure of single-pipeline transmission; connecting China and Russia, the Tongjiang-Nizhnelenskoye Railway Bridge and the Heihe-Blagoveshchensk Highway Bridge opened to traffic respectively in April and June 2022, as the first bridges of their kinds to run through the city of Harbin. The Harbin-Suifenhe-Vladivostok and the Changchun-Hunchun-Zarubino sea-land multimodal transportation routes have witnessed a dramatic increase of traffic. In Mongolia, the expressway linking Ulaanbaatar to the Chinggis Khaan International Airport, contracted by Chinese enterprises, opened to traffic ahead of the schedule in July 2019 as the first operational expressway in the country. The Ulan Bator-Mandalgovi Power Transmission and Distribution Project, Mongolia's first cross-regional high voltage power transmission and distribution line, was completed in October 2019.

**Southeast Asia.** The development of China-Indochina Peninsula Economic Corridor has instilled strong energy into the "Golden Decade" of the relationship between China and ASEAN. **The Trans-Asian Railway has picked up speed of construction.** In December 2021, the China-Laos Railway officially started its operation. It's the first international railway mainly invested and constructed by Chinese enterprises and directly connected with China's railway network after the inception of the BRI. The railway offers an opportunity to transform Laos from a land-locked to a land-linked country. Cross-border cargo transportation has grown fast and its international passenger service became commercially available on April 13, 2023. As the first standard-gauge high speed railway in Thailand, the China-Thailand

Railway Phase I (Bangkok-Nakhon Ratchasima section) is accelerating its pace of development and is expected to be operational in 2026. Yunnan and Guangxi of China are actively advancing their projects linked to Vietnam's railway network, bringing new life to the Yunnan-Vietnam Railway. The construction of Fangchenggang-Dongxing Railway that will allow the first Chinese high-speed railway to reach the China-Vietnam border is coming close to completion and can be extended to Haiphong of Vietnam. The environment impact assessment of the Muse-Mandalay section of the China-Myanmar Railway has been finished, while the feasibility study on the Mandalay-Kyaukphyu section has been launched. After negotiations between China and Malaysia, the Malaysian East Coast Rail Link (ECRL) project has been relaunched and more than 40% of the project construction had been completed as of February 2023. The Jakarta-Bandung High-speed Railway, also the first high-speed railway in Southeast Asia, became operational in Indonesia as the country was celebrating 78 years of independence. In 2015, the China-Singapore (Chongqing) Demonstration Project on Strategic Connectivity was commenced as part of China's efforts to turn the New International Land-Sea Trade Corridor from ambition to reality.

Along with the construction of railways, breakthroughs have been also achieved in the other "five channels". **In Myanmar**, the China-Myanmar Crude Oil and Gas Pipeline, the fourth strategic channel for energy imports of China, completed its construction in May 2013 and started to transport gas and oil into China respectively in July 2013 and April 2017. As of July 2022, the pipeline had pumped over 35 billion cubic meters of natural gas and more than 50 million metric tons of crude oil into China.<sup>1</sup> **In Vietnam**, the China-Vietnam Second Beilun River Bridge opened to traffic in 2017. In May 2023, Guangxi Zhuang Autonomous Region inked an electricity sales deal with Vietnam to transfer electric power via 110kv power lines from Shengou in Dongxing City of Guangxi to Mong Cai in Vietnam. The deal marks resumption of

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1 Chen Jing, "China-Myanmar Crude Oil and Gas Pipeline pumps 50 million tons of crude oil into China", China News Service, July 27, 2022, <https://www.chinanews.com.cn/cj/2022/07-27/9813504.shtml> (accessed September 14, 2023)



cross-border electricity sales from China to Vietnam after a seven-year halt, and is expected to alleviate the severe power shortage in Vietnam. **In Cambodia**, the Chinese-built Phnom Penh-Sihanokville Expressway, the first expressway in the country, was opened to public on October 1, 2022. The new Siem Reap Angkor International Airport, invested and built by Chinese businesses, became operational in October 2023. **In Brunei**, a Chinese engineering firm completed the construction of Pulau Muara Besar Bridge in May 2018, the first cross-sea bridge in the country.

**Central Asia.** With Kazakhstan's Bright Road economic policy, Kyrgyzstan's National Development Program until 2026, National Development Strategy of Tajikistan for the Period up to 2030, Turkmenistan's Strategy of Reviving the Silk Road and the Development Strategy of the New Uzbekistan (2022-2026), the BRI has achieved important consensus and signed intergovernmental cooperation agreements to position Central Asia as a transportation hub in Eurasia. In addition, agreements on international road transport were signed bilaterally between China and the other countries including Kazakhstan and Uzbekistan, and multilaterally among China-Pakistan-Kazakhstan-Kyrgyzstan, China-Kazakhstan-Russia and China-Kyrgyzstan-Uzbekistan.

China has signed an agreement with **Kazakhstan** on establishing the China-Kazakhstan (Lianyungang) Logistics Cooperation Base. The first physical platform incubated from the BRI, the base provides Kazakhstan with an access to the Pacific Ocean. In 2017, the Western China-Western Europe transport corridor completed its construction. Today Kazakhstan is a key link on the network of China-Europe Railway Express. More than 80% of the China-Europe Railway Express trains run through the country via Alashankou Port and Horgos Port before arriving at the rest of Central Asia and Europe. **In Uzbekistan**, the China-Kyrgyzstan-Uzbekistan Highway officially commenced operations in February 2018. In April 2019, Uzbekistan became a member of the China-Kazakhstan-Turkmenistan-Iran railway corridor. The Qamchiq Tunnel, a key project of the Chinese-built Angren-Pap Railway, opened to traffic nearly 100 days ahead of the schedule. It is not

only the first railway tunnel in the country, but also the longest of its kind in Central Asia. **In Tajikistan**, a group of Chinese-built strategic connectivity projects, including the Tajikistan-Uzbekistan Highway, first phase of the China-Tajikistan Highway, the Shar-Shar Tunnel, the South-North power transmission and distribution line, the Regar 500 KV substation, and the tunnels and bridges along the Vakhdat-Yovon Railway, have been widely acclaimed across various communities. **In Kyrgyzstan**, the power grid transformation project in the south of the country and the Datka-Kemin power transmission and transformation project have been successively completed. In 2022, under the strong support of Kyrgyzstan, breakthroughs were made to the China-Kyrgyzstan-Uzbekistan Railway which had been planned for 26 years. **In Turkmenistan**, the China-Central Asia natural gas pipelines have maintained stable operations over the years and had transported over 400 billion cubic meters of natural gas on a cumulative basis as of the end of 2022, providing more than 500 million Chinese residents with clean energy.<sup>2</sup> The pipelines have therefore earned the reputation as a New Silk Road of Energy. What's more, Line D of this project is currently under construction.

**South Asia.** As a flagship and benchmark project of the BRI, the **China-Pakistan Economic Corridor** has put in place a cooperation framework pillared by energy, transport infrastructure, industrial parks and Gwadar Port. The Gwadar Port became formally operational in November 2016, and started its container vessel services in March 2018. Some key projects constructed by Chinese contractors, including the Peshawar-Karachi Motorway (Sukkur-Multan section), the Karakoram Highway Phase II (Havelian-Thakot section), the Lahore Orange Line Metro and the China-Pakistan cross-border optical fiber cable project, have been completed. By the end of 2022, the China-Pakistan Economic Corridor had attracted a direct investment of USD 25.4 billion, created a total of 236, 000 jobs, built 510 kilometers of expressways, generated 8,000 MW power and added 886 kilometers of national core power transmission and distribution

2. Jing Tu, "China-Central Asia natural gas pipelines make the New Silk Road of Energy", China Pictorial, June 5, 2023, [http://www.rmhb.com.cn/zt/ydy/202306/t20230605\\_800333007.html](http://www.rmhb.com.cn/zt/ydy/202306/t20230605_800333007.html) (accessed September 14, 2023)

lines for Pakistan.<sup>3</sup>

In **Bangladesh**, after nearly eight years of construction by Chinese contractors, the Padma Bridge was officially inaugurated in June 2022. This longest bridge spanning the Ganges is expected to increase the annual GDP of Bangladesh by 1.5%, benefiting more than 80 million residents.<sup>4</sup> In **Sri Lanka**, the Hambantota Port has greatly increased its annual throughput after takeover by China Merchants Port Holdings in December 2017. A railway line extension in the southern part of Sri Lanka was opened in 2019, becoming the first newly built railway since the country's independence in 1948. In the **Maldives**, the China-Maldives Friendship Bridge opened to traffic in 2018 as the first cross-sea bridge in the country. In 2021, the first high-voltage power grid of the Maldives, contracted by a Chinese firm, was put into operation to connect various islands in the country. In **Nepal**, the Trans-Himalayan Multi-Dimensional Connectivity Network jointly built by China and Nepal marks a shift of Nepal from a landlocked to a land-linked country. In August 2014, Tibet Airlines Ltd and its counterpart in Nepal jointly set up Himalaya Airlines. In May 2016, the first China-South Asia international freight route linking Lanzhou, the capital of Gansu province and Katmandu in Nepal opened as a train set out from Dongchuan Railway Logistics Center in Lanzhou to transport exports to Nepal via the Port of Gyirong. In March 2022, Chinese Foreign Minister Wang Yi visited Nepal and signed the technical assistance proposal of the feasibility study project of a cross-border railway between China and Nepal.

**West Asia and Middle East.** In recent years, the China-Central Asia-West Asia economic corridor has been extended at an accelerated pace to the Middle East to connect with other local strategies including the "Middle Corridor" Initiative in Turkey and Saudi

Arabia's Vision 2030. In **Turkey**, the Ankara-Istanbul High-Speed Railway, China's first overseas project of its kind, was completed and put into operation in 2014. The China-Europe Railway Express project rapidly advanced its section passing through the Caspian Sea. In November 2019, the Chang'an freight train of the China-Europe Railway Express traveled through Turkey. In December 2020, Turkey sent its first cargo-laden freight train on its maiden journey to China. In **Saudi Arabia**, the Chinese-built Port of Jazan City for Primary and Downstream Industries (JCPDI Port) was inaugurated and put into commercial operation in September 2022. In 2018, a Chinese company completed the construction of the world's first high-speed railway across the desert that links the holy cities of Mecca and Medina. In **the United Arab Emirates**, COSCO Shipping Ports entered into the Concession Agreement with Abu Dhabi Ports in September 2016, in a bid to jointly operate the second container terminal at Khalifa Port. In **Algeria**, Chinese companies were successively involved in the construction of East-West Expressway and North-South Expressway, helping build the longest road tunnel and road bridge ever in the country. In **Egypt**, the State Grid completed the Egyptian EETC 500 kV Backbone Network Upgrading and Transforming project, an unprecedented power infrastructure project in the country. Also, the Chinese-built Light Railway Transit System (LRT) "10th Of Ramadan – The New Administrative Capital" commenced its services in September 2022 as the first electrified light rail in Egypt. In **Israel**, a Beijing-based contracting firm has been chosen to build a new port in Ashdod. September 2021 marked the official start of operations at Haifa Bayport funded and built by a Chinese company.

**Central and Eastern Europe.** China's connectivity with this part of Europe is particularly reflected in two "lines": China-Europe Railway Express and China-Europe Land-Sea Express Line. Renowned as Steel Camel Caravan, the **China-Europe Railway Express** achieved a remarkable growth against the pandemic. In June 2016, the China-Europe Railway Express trains started to be painted with the uniform logo and Chinese President Xi Jinping witnessed in the city of Warsaw the arrival of the first such trains from China when he

3 Jiang Chao, Wang Huan, "An exclusive interview with Zamir Ahmed Awan, founding chair of Islamabad-based think tank the Global Silk Route Research Alliance: High-quality China-Pakistan Economic Corridor Demonstrates BRI Vitality", XINHUANET, July 30, 2023, [http://www.news.cn/world/2023-07/30/c\\_1129776766.htm](http://www.news.cn/world/2023-07/30/c_1129776766.htm) (accessed September 14, 2023)

4 Yuan Jirong, "Chinese-built Padma Bridge opens to traffic in Bangladesh", People's Daily Online, June 26, 2022, <http://world.people.com.cn/n1/2022/0626/c1002-32456836.html> (accessed September 14, 2023)

was visiting Poland. In 2017, railway authorities from 7 countries (China, Belarus, Germany, Kazakhstan, Mongolia, Poland and Russia) signed an Agreement on Deepening Cooperation on China-Europe Freight Rail Services. In 2020, the China-Europe Railway Express officially exceeded 10,000 trains for the first time. By the first half of 2023, China-Europe freight trains had broken the threshold of 73,000, traveling from more than 100 Chinese cities to 216 cities in 25 European countries, and transporting a total of 6.9 million standard containers.<sup>5</sup>

Since 2014, **the China-Europe Land-Sea Express Line** has been expanding rapidly and has opened up a new trade route between China and Europe consisting of four corridors pillared by the Port of Piraeus in Greece and supplemented by the Port of Rijeka in Croatia, Port of Valencia in Spain and Port of Trieste in Italy. Since its launch in December 2014, the Hungary-Serbia Railway has been advanced smoothly and its Belgrade-Novı Sad section within Serbia has commenced operations. In July 2022, the Chinese-built Montenegro South-North Expressway opened its priority section. This first expressway in the history of Montenegro is dubbed the country's "century project".

**Africa.** Infrastructure is one key area of China-Africa cooperation on the BRI. The past decade witnessed a massive flow of development assistance from China to Africa. China has helped African countries construct more than 6,000 kilometers of railways, 6,000 kilometers of highways and 80 large scale power infrastructure projects.<sup>6</sup> **Ethiopia** saw the opening of its first metro system in Addis Ababa, which is also the first light railway in sub-Saharan Africa. Staring its services in 2016, the Addis Ababa-Djibouti Railway is the longest electrified trans-boundary railway on the African continent and the first Chinese-built electrified railway in Africa that holistically combines technical standards, equipment, financing, construction,

5 Wei Yijun, "China-Europe Railway Express exceeds 10,000 trains, a positive signal for foreign trade", XINHUANET, July 30, 2023, [http://www.news.cn/world/2023-07/30/c\\_1129777156.htm](http://www.news.cn/world/2023-07/30/c_1129777156.htm) (accessed September 14, 2023)

6 Xi Jinping, "Hand in Hand Toward a Community of Shared Development", Remarks by Chinese President Xi Jinping at the BRICS-Africa Outreach and BRICS Plus Dialogue, People's Daily Online, August 24, 2023, Johannesburg, <http://cpc.people.com.cn/n1/2023/0824/c64094-40063361.html> (accessed September 14, 2023)

operation and management up to Chinese standards. In **Djibouti**, the Doraleh Multi-Purpose Port, co-funded and operated by China Merchants Group, was opened in 2017 and is expected to contribute to the country's vision of becoming a regional shipping and commercial hub. In **Nigeria**, the Abuja-Kaduna Railway, Abuja Intercity Railway and Lagos-Ibadan Railway were opened respectively in 2014, 2018 and 2021. The projects of Harcourt Port and two terminals of Abuja Airport were delivered in 2018, and the Lekki Deep Sea Port was put in operation in 2023. In **Kenya**, the Mombasa-Nairobi Railway connecting the capital city with East Africa's largest Mombasa Port commenced its transportation services in May 2017. The railway has contributed 1.5% to the country's economic growth, created 46,000 direct and indirect job opportunities and achieved maximal logistical cost savings of 40%.<sup>7</sup> In **Mozambique**, after many years of construction by a Chinese firm, the Maputo Bridge and its extension lines were opened as Africa's longest suspension bridge. In **Angola**, the Chinese-built Benguela Railway started operating in February 2015. It is the second longest railway to be built by a Chinese company for Africa, after the Tanzania-Zambia Line. In 2019, it was for the first time linked with the passenger service of Tanzania-Zambia Line, connecting the Indian Ocean with the Atlantic Ocean and creating an African edition of railway running between two oceans. Thanks to China-South Africa cooperation on information technology, **South Africa** has become the first African country to make 5G network commercially available. In August 2023, the Mtentu Bridge, the highest bridge in Africa, started its construction by a Chinese company.

**South Pacific.** In recent years, China has actively supported island countries in South Pacific in their infrastructure construction through grants and concessional loans. In **Fiji**, the Nabuwalu-Buca Bay Highway upgrading project, Stinson and Vatuwaqa bridges have been completed and opened to traffic. In **Samoa**, the Faleolo International Airport has been renovated. In **Vanuatu**, the road upgrading and reconstruction projects on Tanna Island and

7 Wang Heng, Zhou Xingcan, "International Perspectives: Mombasa-Nairobi Railway sets example for China-Africa cooperation on the Belt and Road, People's Daily Online, August 5, 2022, <http://world.people.com.cn/n1/2022/0805/c1002-32495571.html> (accessed September 14, 2023)

Malekula Island have been completed successively. The highways constructed by Chinese companies are praised by the local community as “roads toward the future”. In August 2017, the Luganville Wharf, the longest wharf in Vanuatu, was completed and delivered by a Chinese company. In **Papua New Guinea**, a highland highway renovation project was completed in the Province of Simbu. Moreover, the **Solomon Islands** Munda Airport runway upgrading project and the Port of Honiara renovation project, Tonga's national roads renovation project and a secondary road project in Pohnpei State of the **Federated States of Micronesia** have been implemented one by one.

**Latin America.** By 2022, China had invested USD 104.2 billion in 228 infrastructure projects in Latin America and the Caribbean, creating more than 721,000 jobs for local residents. The transport sector was the leading recipient of Chinese investment, attracting over half of the amount.<sup>8</sup>In **Brazil**, the Belo Monte ultra-high-voltage transmission project, invested and constructed by a Chinese company, is renowned as a power corridor linking North and South of the country. This ±800KV UHV DC transmission project is also the longest of its kind in the world. In **Argentina**, the Belgrano freight railway renovation project constructed by a Chinese firm completed its first phase in June 2023, reviving the food transportation route opened in 1876. In **Panama**, the 4<sup>th</sup> Bridge over the Panama Canal broke ground in May 2019, which was the largest single bridge project won by Chinese enterprises in the Americas. In **Mexico**, the Mayan Rail Project started the construction of its first section by a Chinese company in June 2020. In **Jamaica**, the Chinese-built South-North Expressway opened in 2016. In **Columbia**, Chinese companies are deeply involved in the construction of a number of key infrastructure projects including the MAR 2 Expressway, BogotáMetro Line 1 and Tram Project in the west of Cundinamarca. In **Bolivia**, the Bolivian San Borja-SanIgnacio highway project was delivered by a Chinese company in June 2023.

8 Enrique Dussel Peters, Monitor of Chinese Infrastructure in Latin America and the Caribbean 2022, Red ALC-China, July 2023, p3, [https://www.redalc-china.org/monitor/images/pdfs/menuprincipal/DusselPeters\\_Monitor\\_Infraestructura\\_2023\\_CHN.pdf](https://www.redalc-china.org/monitor/images/pdfs/menuprincipal/DusselPeters_Monitor_Infraestructura_2023_CHN.pdf) (accessed September 14, 2023)

## 2. Contributions of BRI Connectivity to China, Regions and the World

Since the end of the Cold War, the process of western-dominated economic globalization has been clearly and increasingly ocean-oriented. As a result, those countries and regions adjacent to shipping routes, close to the markets of Europe and the United States and home to superb ports, have enjoyed development advantages because it's easier for them to participate in international division of labor. On the contrast, the landlocked territories have been in a disadvantageous position due to much higher transportation costs and lower appetite for investment. Fundamentally, this describes a dependent development trajectory under the Core and Periphery Model in the international economic system. Comparatively, the Belt and Road Initiative, driven by connectivity among various participating countries and regions, has been designed to cultivate growth potential, drive regional and global cooperation in a wide range of areas, and blaze a new trail toward globalization that is more equitable and sustainable. The initiative has not only created considerable benefits for China, but has also promoted economic growth, people welfare and good governance in those participating countries, producing a profound impact around the world.

### *2.1 Connectivity Has Facilitated China's Efforts to Shape a High-Standard Landscape for Opening Up and to Transform the Economy in a Sound Way*

In the past decade, the BRI has facilitated China's efforts in building a highly open economy. The connected framework of “six corridors and six channels serving multiple countries and ports” has served as a strong boost to China's new pattern of opening up at a larger scale, in broader areas and on a deeper level. Driven by the opportunities brought by the six economic corridors, many provinces, especially those inland provinces in the west and north of China, have shifted their focus to the construction of transportation routes and have deeply engaged in the connectivity projects with China's neighboring countries. They have not only effectively promoted the opening-up of coastal areas, areas along the Yangtze River and inland areas, but have also accelerated the formation of an opening-

up pattern featuring coastal-inland connectivity and east-west complementarity. Xinjiang is striving to develop itself as the core area of the Silk Road Economic Belt and as the country's bridge to Central Asia, the Middle East and Europe. It has proposed to improve its international and domestic connectivity systems by building the cities of Urumqi and Kashgar into international transportation hubs, and constructing four east-west transport corridors and four south-north transportation axes. Heilongjiang is actively building the highland to open up northward. The Harbin International Air Cargo Hub and International Logistics Distribution Center, and the Port Logistics Hub at the Suifenhe-Dongning border, are being created as part of the Harbin-Suifenhe-Russia-Asia sea-land multimodal transportation route, Harbin-Europe Freight Train Service and Harbin-Russia Freight Train Service. Provinces and municipalities like Chongqing and Guangxi are making great efforts to advance the development of the New International Land-Sea Trade Corridor by expanding rail-sea intermodal transportation service and international multimodal transport, improving the coordination between Beibu Gulf Port in Guangxi and Yangpu Port in Hainan, and increasing connectivity with ASEAN.

Through the construction of connectivity projects, China's central and western regions have actively integrated into the grand vision of jointly building the Belt and Road Initiative, reaching a higher level in their opening-up. In 2022, the regions contributed 20.9% to China's national exports, an increase of 8.2 percentage points during a span of ten years.<sup>9</sup> Starting from more than 100 domestic cities, the China-Europe Railway Express has put in place a transport service network covering the entire continent of Eurasia. According to domestic sources, by the end of 2022, these freight trains had carried over 50,000 types of goods in 53 categories worth more than USD 320 billion. In 2022, the imported and exported goods accounted for over 9% of the total trade between China and Europe in terms of value.<sup>10</sup> A total of 16 provinces and regions

9 Calculated based on PRC Ministry of Commerce data

10 Li Guoqiang, "China-Europe Railway Express gains new momentum for high-quality growth", China Economic Times, January 16, 2023, p A03.

in central and western China have joined the New International Land-Sea Trade Corridor which has been linked with the China-Europe Railway Express network in their daily operations, transporting their goods to 319 ports in 107 countries and regions. The association of "Silk Road Maritime" has opened 100 ship routes, reaching 117 harbors in 43 countries. A total of more than 12 million standard containers have been transported by over 10,000 freight vessels on a cumulative basis.<sup>11</sup>

In expanding the network of connectivity, manufacturing capacities have started to move beyond national borders and settle in the participating countries. China's massive infrastructure manufacturing is the first beneficiary in this process. From 2013 to 2022, Chinese contractors had secured more than USD 1.2 trillion of new projects and had generated a turnover of above USD 800 billion in the countries along the Belt and Road, contributing approximately half of the total value of Chinese contracted projects overseas. An increasing number of border economic cooperation zones and overseas economic and trade cooperation zones have been established in the countries along the Belt and Road, becoming key platforms to drive international cooperation in manufacturing capacities.

## ***2.2 Connectivity Has Stimulated Cross-Regional Trade and Investment and Advanced the Sustainable Development Goals***

In 2016, when attending a symposium on advancing the Belt and Road Initiative, President Xi Jinping noted that in the current continued economic downturn, if the cyclical manufacturing capacities and construction capacities are exported to serve the urgent needs for industrialization, modernization and infrastructure improvement in the countries along the Belt and Road routes, they will help to stabilize the international economic situation. The connected framework of "six corridors and six channels serving multiple countries and ports" has played vital roles in facilitating cross-regional trade and investment, increasing growth potential of the world economy and achieving the 2030 Agenda for Sustainable

11 Xue Zhiwei, Yin Sheng, "Silk Road thrives by connecting with the seas", Economic Daily, August 10, 2023, p 9.

Development. As noted in the World Bank's 2019 publication of *Belt and Road Economics: Opportunities and Risks of Transport Corridors*, Belt and Road transport corridors have the potential to substantially improve trade, foreign investment, and living conditions for citizens in the initiative's participating countries. Along economic corridors, the travel times will decline by up to 12 percent once completed. Travel times with the rest of the world are estimated to decrease by an average of 3 percent. Trade will grow between 2.8 and 9.7 percent for corridor economies and between 1.7 and 6.2 percent for the world. Time-sensitive sectors, such as fresh fruits and vegetables and electronics, will be among the biggest winners. Low-income countries are expected to see a significant 7.6 percent increase in foreign direct investment due to the new transport links. Expanded trade and investment will increase growth and incomes in most corridor economies. Real income gains could increase by up to 3.4 percent. BRI transport projects could help lift 7.4 million people from extreme poverty and 32 million people from moderate poverty.<sup>12</sup>

In advancing the connectivity of the BRI, a large number of flagship projects have gradually demonstrated economic and social benefits over the decade. The China-Europe Railway Express is a case in point. During the pandemic, these freight trains became the "life blood" of the international community to jointly fight the disease and served as a key stabilizer of global supply chains and industrial chains. By the end of July 2022, the China-Europe Railway Express had delivered to Europe 109,000 tons of anti-pandemic supplies in 14.2 million pieces.<sup>13</sup> The proportion of loaded containers to all the containers transported has maintained at over 98%, which has driven the growth of foreign trade and relevant industries, increased a large number of new logistical, industrial and commercial centers as well as industrial parks, and created a lot of job opportunities and tangible benefits for local

12 Michele Ruta, Matias Herrera Dappe, Somik Lall, Zhang Chunlin, *Belt and Road Economics: Opportunities and Risks of Transport Corridors*, Website of the World Bank Group, p 5, <https://www.shihang.org/zh/topic/regional-integration/publication/belt-and-road-economics-opportunities-and-risks-of-transport-corridors> (accessed September 14, 2023)

13 Li Jie, "China-Europe Railway Express 'runs' a new record", [www.gov.cn](http://www.gov.cn), August 20, 2022, [https://www.gov.cn/xinwen/2022-08/20/content\\_5706118.htm](https://www.gov.cn/xinwen/2022-08/20/content_5706118.htm) (accessed September 14, 2023)

residents. In the Hungarian border town of Zahony, the Central European Logistics and Industrial Zone has started the construction. In Duisburg, an inland port city of Germany, about 50,000 local residents are engaged in economic activities associated with the China-Europe Railway Express, accounting for 15% of the city's labor force. The China-Kazakhstan (Lianyungang) Logistics Cooperation Base has become an important platform for products from Kazakhstan, the largest landlocked country in the world, and other Central Asian countries to reach seaports. Most of the fertilizer products, agricultural products, auto parts and components and electronics exported from Uzbekistan to Japan, Republic of Korea and Southeast Asia are also transited through this base. As a key facility to build a shared future for China and Laos, the China-Laos Railway has strongly supported Laos in achieving its vision of turning the Indo-China Peninsula into a regional transportation hub, and has opened up an easily accessible logistics route to connect the hinterland of the peninsula with Myanmar, Thailand and Malaysia. Meanwhile, the railway is a contributor to ASEAN-China Free Trade Area and the Greater Mekong Sub-region Economic Cooperation, and an accelerator of regional economic integration. Thanks to the operation of China-Laos Railway, the costs of the logistics between the two countries have been reduced dramatically and the transportation time between Kunming and Vientiane has been shortened from 2-3 days to about 30 hours. As of August 2023, the railway had transported a total of more than 20 million passengers, including 3 million passengers for the section of Laos<sup>14</sup>; and had shipped more than 24 million tons of cargo including 4.5 million tons of cross-border cargo bound for over 10 countries and regions.<sup>15</sup> According to the World Bank, the railway could increase Lao PDR's aggregate income by up to 21 percent and improve the country's attraction for international investors in the long term. The transit trade through Lao PDR along the railway corridor could reach an estimated 3.9 million tonnes per year by 2030. Meanwhile, 4 million local residents of Laos and 10 million tourists from the surrounding countries are

14 Ye Chuanzeng, "China-Laos Railway transports 20 million passengers", *People's Daily*, August 18, 2023, p12.

15 Fan Xi, Ding Yiquan, Zhao Xu, "A 'steel dragon' spans mountains and rivers", *Xinhua Daily Telegraph*, August 15, 2023, p7.

estimated to travel by the railway, bringing opportunities for the development of the tourism industry of Laos.<sup>16</sup>

As a shining star in the 21st Century Maritime Silk Road, the Greek Port of Piraeus has set a perfect example for China-Greece cooperation. Since taking over the operations of the port, China COSCO SHIPPING invested a large amount of money in renovating Piers II and III and expanding new business opportunities of cruise terminal, warehousing and logistics. The transformation has brought back a large number of shipowners and operational profitability, making it the largest ferry terminal in Europe, a key cruise home port, a car terminal and a vessel repair center in the Mediterranean. By measure of container throughput, the Port of Piraeus has climbed from the 93th position in 2010 to the 26th place in 2021 in the world rankings. Moreover, a China-Europe Land-Sea Express Line has been opened from the port to Central and Eastern Europe, covering 1,500 inland points in nine countries in this third trade route connecting China and Europe. The transformed port of Piraeus has added a strong momentum to the Greek economy hit hard by the debt crisis by creating more than 3,000 direct job positions and 10,000 indirect job opportunities for local residents, contributing EUR 1.4 billion-worth direct social benefits and driving the growth of the entire industrial chain of shipping, ports and integrated logistics.<sup>17</sup>

### **2.3 Connectivity Has Increased Global Attention to Infrastructure Construction**

Firstly, a group of successful early-stage and growth-stage projects have produced exemplary impacts, igniting the enthusiasm of more countries to participate in connectivity cooperation. The success and expansion of China-Laos Railway and Jakarta-Bandung High-Speed Railway has greatly encouraged connectivity by railways across ASEAN countries. After the commencement of construction, the China-Thailand Railway was progressing slowly. In October 2022, Deputy Prime Minister Anutin Charnvirakul of Thailand led a delegation to Laos

and spoke highly of the China-Laos Railway, which gave him strong determination to advance the comprehensive construction of the first phase of China-Thailand Railway. In January 2023, a delegation of representatives from Thai railway authorities and customs visited Laos, proposing to reduce the costs of cargo transportation among China, Laos and Thailand by 30-50% in the next 3-5 years by connecting the railways among the three countries at a faster pace. Currently, the Thai government is actively upgrading its domestic transport network by increasing warehousing and distribution capacities in the northeastern region and transforming the Nong Khai railway station at its border with Laos into a cross-border cargo inspection and logistics center. Moreover, Thailand has offered an investment plan on construction projects including a freight bridge between Nong Khai and Vientiane. In February 2023, Cambodia and Laos had a discussion about the possibility of constructing a high-speed railway between the two countries. Malaysia is also actively advancing its connection with Thailand by a high-speed rail. The railway between Kuala Lumpur and Padang Besar, a border town connecting Malaysia and Thailand, has completed its electrification project. A feasibility study is being conducted with Thailand on renovating the Hat Yai-Padang Besar and Bangkok-Hat Yai railways and building a high-speed rail to link Kuala Lumpur and Bangkok. Driven by these trends, some positive signs have been observed with regard to the China-Vietnam Railway that has been suspended for a long time. In May 2023, Vietnamese transport minister paid a visit to China to understand China's experience in advancing high-speed railway projects and prepare for relaunching its South-North High-Speed Railway. During his visit to China, Prime Minister of Vietnam Pham Minh Chinh also expressed his will to collaborate with China on building a trans-boundary high-speed rail.

Fast growth of the China-Europe Railway Express has elevated the status of transit trade on national agendas. It's thanks to the huge facilitation efforts by Kyrgyzstan and Uzbekistan that the China-Kyrgyzstan-Uzbekistan Railway has moved from vision to reality. President of Kyrgyzstan Sadyr Japarov described the railway as "air and water" for the country, hoping the

<sup>16</sup> World Bank, *From Landlocked To Land-linked: Unlocking The Potential Of Lao-China Rail Connectivity*, June 2, 2020, p18.

<sup>17</sup> Qu Junpeng, "Injecting new vitality into China-Greece joint development of the Belt and Road", *Economic Daily*, October 29, 2021, p4.

railway can get Kyrgyzstan out of its development plateau and bring the country new job opportunities and economic takeoff. After the outbreak of the Russia-Ukraine conflict, the Trans-Caspian International Transport Route (TITR) has demonstrated its geographical advantages. In view of new opportunities of expanding transit trade, countries along the route launched their plans to increase trans-Caspian transport capacities. In March 2022, a quadrilateral declaration on the Trans-Caspian East-West Middle Corridor was signed by Georgia, Azerbaijan, Turkey and Kazakhstan. In August 2022, Azerbaijan, Turkey and Georgia signed a trilateral protocol on the facilitation of transit customs procedures within the Baku-Tbilisi-Kars (BTK) railway project, in an effort to increase their attractiveness for goods from China and Central Asia.

Secondly, connectivity expansion has become a key issue on the agenda of global governance as it has filled the gap in global management. Historically, infrastructure deficits and development deficits have become an increasingly serious problem around the world. The shortage of infrastructure availability has been a common challenge for the developing world. According to the estimates of G20 Global Infrastructure Hub in 2018, the global need for infrastructure investment is forecast to reach \$94 trillion by 2040 and there is a \$ 15 trillion funding gap, representing a deficit of 16% in infrastructure investment. The gap will grow to \$ 18.5 trillion to meet the United Nations Sustainable Development Goals. Roads, power, ports, airports and telecommunication network are the areas where investment needs and gaps are the greatest.<sup>18</sup> The Belt and Road Initiative has been proposed to meet this increasingly urgent need. Connectivity is what distinguishes the BRI from other international development initiatives and economic cooperation plans. Since its introduction, the BRI has been focused on expanding connectivity to facilitate the construction of international trade and transport routes and the cooperation in infrastructure projects. The purpose is to promote trade and investment, strengthen international cooperation on manufacturing capacities, and enhance

political trust and cultural exchanges. The initiative has bridged the gap in the field of global development.

Thirdly, the expanded connectivity of BRI has put infrastructure construction higher on national agendas and the standardization of overseas infrastructure has been included in international discussions. Based on its practices in advancing the Belt and Road Initiative, China has contributed “Chinese experience” and “Chinese solutions” to the development of global standards on infrastructure. Building resilient infrastructure is one of the 17 goals identified for the 2030 Agenda for Sustainable Development. At the G20 Summit held in Hangzhou in 2016, China as the host country supported the MDBs’ Joint Declaration of Aspirations on Actions to Support Infrastructure Investment put forward by 11 multilateral development banks, encouraging MDBs to optimize their balance sheet and mobilize more public and private funds into infrastructure. The Global Infrastructure Connectivity Alliance was launched during the summit to strengthen the overall coordination and cooperation on infrastructure connectivity projects. At the G20 Osaka Summit in 2019, some important principles of the Belt and Road Initiative, including “wide consultation, joint contribution and shared benefits”, “infrastructure connectivity” and “fiscal sustainability”, were incorporated into the G20 Principles for Quality Infrastructure Investment which puts sustainable development as the first and foremost principle.

### 3. International Situation, Risks and Challenges for Infrastructure Connectivity

Infrastructure connectivity of the Belt and Road Initiative has achieved fruitful results for various participants in the last ten years. The international environment, however, has changed dramatically. The world is undergoing profound changes never seen before in the past century, with external uncertainty on the rise. “Amid these complex changes, the international political, economic and security environment has shown an evolutionary and discrete trend seldom observed before”<sup>19</sup>. We are facing a

18 Chris Heathcote, Ian Mulheirn: Global Infrastructure Outlook: Infrastructure investment needs 56 countries, 7 sectors to 2040 ,GIH, June 2018, p3.

19 Fu Mengzi, The World in New Turmoils and Transformations and China in the New Era, Journal of Boundary and Ocean Studies, Issue No.1, 2023, p29.



higher level of risks and challenges.

### ***3.1 The BRI Has Been Increasingly Confronted with Hedging Measures, Antagonism and Risks of Demonization as the International Political Situation Becomes More Dangerous Due To Fiercer Strategic Competition among Great Powers***

Currently, geopolitical conflicts and great power competition are coming back to the fore of international politics. Some big power is interpreting the Belt and Road Initiative as a tool used by China to achieve its geopolitical purposes, thus attempting to defame and disrupt some BRI projects, especially those connectivity projects with geopolitical influence. In recent years, the western countries, including the United States, European countries, Japan and Australia, have increased their policy coordination targeting the BRI. In April 2021, the United States Senate Committee on Foreign Relations passed the the Strategic Competition Act of 2021, demanding to enhance transatlantic cooperation and strengthen partnerships with Europe at the level of the United Nations. The Act also proposes to strengthen cooperation with external assistance agencies of allies or international infrastructure initiatives to force BRI contracts to comply with international standards, via organizations like OECD and the Paris Club. Western countries are actively advancing competitive plans including the Build Back Better World initiative (B3W), the Global Gateway strategy and the Partnership for Global Infrastructure and Investment (PGII), in a joint effort to hedge against the Belt and Road Initiative. Meanwhile, the Indo-Pacific Strategy and the QUAD, a diplomatic partnership between the United States, India, Japan and Australia, have been implemented to lobby for the engagement of BRI countries in various partnerships, adding pressure to the third countries when deciding their stance in face of great power competition.

Demonizing the Belt and Road Initiative has become a key component of policies and public opinion warfare against China by some governments, think tanks and media organizations. Some overseas projects of the BRI are overly hyped in their media coverage. After the opening of the Mombasa–Nairobi Standard Gauge Railway, there's a media hype around

the issue of debt and repayment, citing it as another costly and “crazy railway”. They went further to frame China for coveting the Port of Mombasa and employing the port as a collateral of the loan. In Sri Lanka, the Hambantota Port was signed over to China on a 99-year lease because the country cannot repay Chinese loans, but this transaction was described by western media as a “colonialist act”. The hype around the so-called “BRI debt trap” has never stopped. Meanwhile, some countries have labeled the BRI projects as “China exporting authoritarianism”, “threatening the environment”, “infringing on human rights” and “lack of transparency”, attempting to force participating countries to withdraw from their partnerships with China. For example, prior to the Second Belt and Road Forum for International Cooperation, one of the key agendas for senior US officials like then-Vice President Mike Pence and then-Secretary of State Mike Pompeo was to urge their counterparts to boycott the Belt and Road Initiative during their diplomatic visits.

### ***3.2 A Higher Level of Financial Risks in International Economy Has Resulted in a Challenging Environment for Infrastructure Connectivity***

In the post-pandemic era, the world economy is playing out in a sharply different way from what it's like when the BRI was introduced. Intrinsic risks and structural challenges are accelerating to surface, leading to a worsening international economic environment for the expansion of connectivity.

**Firstly, the world is on the cusp of economic stagflation and a gray rhino risk of debt default is fast approaching, exposing connectivity to much higher risks of financial sustainability.** According to statistics of the Institute of International Finance (IIF), the global debt stock has surpassed the benchmark of USD 300 trillion and the debt of emerging markets and developing countries has increased at a particularly high rate over the past decade.<sup>20</sup> The world economy is losing its momentum of growth, and inflationary pressures are persistently at a high level, showing an obvious trend of stagflation. As the aggressive

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<sup>20</sup> IIF: Global Debt Monitor: Cracks in the Foundation, May 17, 2023. <https://www.iif.com/Products/Global-Debt-Monitor> (accessed September 14, 2023)

interest rate hike by the Fed is dealing a heavy blow to economic outlook, a group of emerging markets and developing countries have fallen into trouble of worsened economic fundamentals, constrained financing conditions and escalated debt servicing pressures. In this context, a massive debt crisis is highly likely across these countries. As a result, certain projects having been completed may face a deteriorated revenue scenario, debt servicing capability of some participating countries may be compromised and the rising inflationary pressure and financing cost are likely to drive up the costs of newly built projects and planned projects. Combined together, these factors are likely to diminish the enthusiasm of the participating countries. Moreover, the issue of debt sustainability will make these countries more hesitant toward new projects.

**Secondly, the profound changes in international economic relations have reduced opportunities for cooperation on connectivity projects.** Driven by the COVID-19 pandemic, nationalism and populism are on the rise in certain countries. They are trying to expand the scope of “key industries” and “national security” and place more emphasis on the concept of “key infrastructure”. And they are demanding new adjustments to ensure “safe and controllable” global industrial and supply chains. These new changes will discourage the participating countries from collaborating on connectivity projects. In particular, strategic competition between China and the United States is expected to intensify and last for a long time. As a result, the United States has blacklisted a large number of Chinese businesses and institutions of the Belt and Road Initiative to prevent their exports. The willful practice of long arm jurisdiction has impeded the progress of the projects under construction.

### ***3.3 Country Risks Are Increasingly Pronounced in the Expansion of BRI Connectivity***

The Belt and Road Initiative is a global blueprint calling for open collaborations. A large number of participating countries, however, are widely distributed on large swaths of land with a strong diversity in political systems and cultural traditions, distinct national conditions and complex relationships among each other. In the regions covered by the BRI, cultural,

religious, ethnic and national conflicts abound. This shapes a rather complicated environment for the advancement of connectivity along the Belt and Road. In particular, most of these countries are developing countries in volatile periods of political, economic and social transitions, which is also expected to negatively affect the progress of BRI projects.

**Firstly, political risks are noticeable.** As economic and social doctrines and policies go conservative around the world, protectionism, isolationism and populism are on the rise in some countries. Certain projects have increasingly become the “target” of political in-fight in some countries, resulting in project delays or cancellations. Quite a few countries along the Belt and Road are always fraught with political struggles and regime changes. After taking office, the new governments tend to liquidate the power of their predecessors, thus causing “collateral damage” to some projects.

**Secondly, operational risks are unavoidable.** Some key connectivity projects have made initial progress, but potential risks cannot be underestimated given the large investment, long investment horizon and a high level of uncertainty. McKinsey Insights estimates that large infrastructure, mining, and oil and gas projects, on average, cost 80 percent more than budgeted and run 20 months late<sup>21</sup>. Compared with those economic sectors with a high level of technology content and returns over investment, infrastructure projects like high-speed rails, airports, expressways, power grids and energy pipelines are expected to harvest no immediate gains or are even likely to suffer from operating loss for a long period of time. This is particularly not acceptable in some least developed countries or regions. Take the Gwadar Port for instance. The Port of Singapore Authority had developed the port for several years before Chinese took over the management, but it had to give it up ultimately due to poor operation, lower-than-expected orders and persistent loss. During the construction of the Jakarta-Bandung High-Speed Railway, the land

21 Tim McManus: Managing big projects: The lessons of experience, McKinsey Company, May 18, 2016. <https://www.mckinsey.com/capabilities/operations/our-insights/managing-big-projects-the-lessons-of-experience/> (accessed September 14, 2023)

prices along the route increased four folds within five years, causing difficulties in land acquisition, cost overrun and engineering cost hike.

**Thirdly, security risks are going up.** In some participating countries, the government is not capable of effectively governing the country on a very fragile economic foundation. Persistently high unemployment rate and miserable living conditions would trigger risks of political and social turmoil, or even lead to street revolutions, demonstrations and protests, violent offenses and military coups, thus disrupting the projects of the Belt and Road Initiative. In November 2020, a civil war broke out in Ethiopia and lasted two years. Since August 2020, eight coups have taken place in Africa. BRI projects-targeted terrorist attacks have become more active. Some terrorist organizations like the Balochistan Liberation Army in Pakistan have launched multiple suicide attacks against the China-Pakistan Economic Corridor. In 2021, several Chinese died in a terrorist attack in Pakistan on their way to the China-Pakistan Dasu Hydropower project.

**Fourthly, the damage of geopolitical turmoil to connectivity merits increased attention.** In the wake of the Ukraine crisis in 2022, the Belt and Road Initiative saw its connectivity cooperation seriously impacted in Eurasia and even in Central and Eastern Europe. Amid the cloud of the war, Chinese companies were forced to suspend their cooperation projects in Ukraine because infrastructure was destroyed in many places. From the perspectives of cargo safety and political stance, many shipping giants in the western world refused to use the freight trains running through Russia and suspended their cooperation with the China-Europe Railway Express. In 2022, the number of China-Europe Railway Express freight trains bound for West Europe via Russia and Belarus shrank sharply. The transport volume decreased by more than 90% with Italy, nearly 80% with the Czech Republic, over 60% with the Netherlands, France and Sweden, about 40% with Germany and above 20% with Poland.<sup>22</sup> The

22 Ufficio Economico e Commerciale dell' Ambasciata della Repubblica Popolare Cinese nella Repubblica Italiana, China-Europe freight trains plummets in 2022 and decreases by 91.62% in China-Italy freight services, March 15, 2023, <http://it.mofcom.gov.cn/article/jmxxw/202303/20230303395392.shtml> (accessed September 14, 2023)

Ukraine crisis has even spilled over further into South Caucasus and Central Asia.

### **3.4 Global Challenges Are Pointing to a Graver Situation**

We are living with a variety of global issues. From their impact on BRI connectivity, several challenges merit our attention. The first challenge is potential contagious diseases. The impact of these diseases on connectivity projects has been fully reflected during the COVID-19 pandemic. A succession of lock-downs and social distancing measures across countries to fight the pandemic restricted people mobility and cargo transportation, and increased construction costs, thus disrupting the projects under development. According to statistics by China's Ministry of Foreign Affairs in June 2020, approximately 20% of the BRI projects were severely affected by the pandemic and 30-40% of them were impacted to some extent.<sup>23</sup> A lot of proposed projects had to be postponed. The second challenge is cybersecurity risks. The global security of cyberspace has demonstrated a worrisome trend, with cyberspace attacks occurring more frequently and key infrastructure exposed to more hacker attacks. The National Risk Register 2023 published by the UK Cabinet Office identifies cybersecurity risk as a strategic risk only next to terrorism, noting that in the next two years, key infrastructure faces a 5-25% possibility of devastating cyberattacks.<sup>24</sup> Given the universally inadequate capacity to protect key infrastructure in a number of participating countries, there is a high level of cyber security risks. In January 2022, the railway system of Belarus was attacked by hackers, leading to a disruption of passenger traffic. Climate change is the third challenge. Frequent natural disasters in some BRI participating countries and extreme weather events in the world require stronger climate adaptability and resilience for connectivity projects. According to a World Bank report in 2019, the lack of resilient infrastructure is harming people and firms. Natural disasters cause direct damage to power generation

23 Sun Jinxin, "Brilliant achievements of the BRI overshadows the pandemic", China Pictorial, March 17, 2021, [http://www.rmhb.com.cn/zt/ydy/202103/t20210317\\_800240593.html](http://www.rmhb.com.cn/zt/ydy/202103/t20210317_800240593.html) (accessed September 14, 2023)

24 UK Cabinet Office: National Risk Register 2023 edition, August 3 2023, P11. <https://www.gov.uk/government/publications/national-risk-register-2023> (accessed September 14, 2023)

and transport infrastructure, costing about \$18 billion a year in low- and middle-income countries. However, the indirect losses to residents and businesses could reach at least \$ 390 billion.<sup>25</sup>

#### 4. Looking Ahead

No green hill can stop anything from running; what flows eastward will continue its flowing. In the past decade, the Belt and Road Initiative has achieved remarkable progress in advancing its connectivity in spite of some risks and challenges. It keeps up with the fast pace of change and serves the development needs of various countries. It is fully motivated to overcome the ideological bias and geopolitical myopia in humanity. It strikes a chord with the international community, attracts participants from around the world and enjoys a bright future.

The strong vitality and adaptability of BRI connectivity projects can be attributed to three factors.

**A high level of political mutual trust is the precondition of connectivity.** The long-term investment horizon and financial complexity of infrastructure projects determines the importance of policy coordination. Without good political relationships, it is impossible to turn the projects from vision into reality. Up to date, China has signed over 200 cooperation agreements on jointly building the Belt and Road with more than 152 countries and 32 international organizations, driving forward the cooperation on connectivity projects. These documents reflect political mutual trust between China and the participating countries, and highlight their well-aligned development needs and strategies. As China strives to promote the great rejuvenation of the Chinese nation, it is more necessary for us to balance domestic and international imperatives, advance opening-up in an all-round manner, and connect with the world, integrate into the world and change the world in a more proactive way. At critical stages of industrialization and modernization, most of the participating countries have a strong call for further development. Practically, in face

25 World Bank, “\$4.2 Trillion Can Be Saved by Investing in More Resilient Infrastructure, New World Bank Report Finds” , Website of the World Bank Group, June 20, 2019, <https://www.shihang.org/zh/news/press-release/2019/06/19/42-trillion-can-be-saved-by-investing-in-more-resilient-infrastructure-new-world-bank-report-finds> (accessed September 14, 2023)

of challenges and setbacks, some connectivity projects were re-negotiated instead of being canceled, largely thanks to the strong demand of participating countries for strategically important bridges, expressways and railways. Through connectivity projects, these countries hope to increase their internal capacity to “generate blood” for economic growth rather than solely rely on “blood transfusion” from external assistance. Therefore, they are willing to participate in these projects despite the fact that their debt will go up as a result. It turns out that the successful operations of many connectivity projects have improved economic growth and people’s wellbeing, and increased public support and approval of their governments. That is why the Belt and Road Initiative has been widely applauded.

**People-to-people bonds are an important guarantee for advancing connectivity.** Connectivity projects tend to require massive infrastructure construction that involves a series of complicated procedures of land acquisition, housing demolition and relocation, environment impact assessment, construction and supportive facility development. Without support and cooperation by local residents and groups, it will be challenging to advance these projects. From those success stories, the key to people-to-people bonds lies in increasing localization of project construction and operation, employing local workforce to create new job opportunities, distributing benefits equitably between the local governments and residents, and delivering on social responsibilities to make people have a sense of gain and recognition toward the projects.

**Mutual benefit and win-win outcomes provide a continuous source of sustainable connectivity.** Without economic viability, the projects will not be able to move on because they cannot recover their construction cost or can benefit only one single party. Some projects are highly controversial because the Chinese companies have not fully understood their foreign counterparts, done enough in initial feasibility study or adequately considered the host country’s distinctive business environment and cultural traditions. It is due to the bad profitability expectations that some projects have been labeled by others as a “geopolitical tool”. To address this situation, Chinese

companies need to improve their managerial capability for compliant, informed decision-making, and the participating countries need to take a rational attitude toward the connectivity projects and realize that the projects are not a form of gratuitous development assistance but a kind of commercial partnership based on equality and reciprocity.

**Connectivity represents the flow of economic activities and the bond of civilizations.** Throughout the world history, from camel bells and sails along the Ancient Silk Road, to the Great Geographical Discoveries in the Age of Exploration, and from the invention of steam engines in the first industrial revolution to the advent of the Internet in modern information revolution, human's endless pursuit of connectivity has driven the current wave of economic globalization and made the entire world a closely connected "global village". Sven Hedin describes a very hopeful vision in his book *Series of Western Regions' Exploration*, "I see a brand new road running through the grassland and the desert. Along the road, I can see countless bridges built across rivers and ravines.....Following the steps and tracks left by the trade caravans on the Ancient Silk Road, the road is stretching out ahead.....The past splendor is like framed pictures falling down the western horizon. And the new spectacular views are ascending from the eastern horizon together with the morning sun." Today, this vision is turning into reality.

The third Belt and Road Forum for International Cooperation was held in Beijing in October 2023. The forum is the highest-level event to celebrate the 10<sup>th</sup> anniversary of the Belt and Road Initiative, summarize the best practices and showcase the achievements of this initiative. It is also an important platform for various stakeholders to explore how to jointly promote the high-quality construction of the BRI. The forum is expected to build political trust between China and those participating countries, increase people's understanding about each other and facilitate the implementation of more mutually beneficial projects on the ground. Moreover, the event promises to offer new opportunities for strengthening cooperation on connectivity.

**Firstly, moving from "hard connectivity" to "soft connectivity".** In the past ten years, a series of key flagship projects have been launched and operated successfully, demonstrating the great achievements in improving connectivity. However, as the Belt and Road Initiative goes beyond overall planning to detail-attentive implementation and embarks on a new journey of high-quality development, traditional massive infrastructure construction projects represented by "the projects of the century" will be replaced by "small yet smart" livelihood programs with higher economic and social benefits. Future connectivity endeavors should focus more on the alignment of standards, systems and rules. Instead of only providing "Chinese capital" or "Chinese construction" for participating countries, the projects should place more emphasis on exporting "Chinese technologies" and "Chinese standards" to these countries to strengthen "soft connectivity" of rules and standards. Since they involve various industries and sectors, the connectivity of standards and rules requires stronger, deeper and broader coordination of policies between China and participating countries. Coordination efforts need to move beyond development strategies and macro policies, toward meso and micro levels such as industries, regions and even businesses.

**Secondly, going from "connecting the infrastructure" to "connecting the hearts".** The BRI connectivity projects have profoundly changed the development landscape of many participating countries, and have been widely acclaimed by these countries and their people. This is a pride for both China and these participating countries. However, it is undeniable that due to willful negative publicity by some media, some projects have been misunderstood, questioned or even boycotted through protests, resulting in project delays. This reveals that infrastructure connectivity alone is far from enough to make connectivity sustainable. Together with the construction of roads and ports, it is also necessary to open up an avenue to facilitate mutual understanding and frank communication among people along the Belt and Road. To this end, the Chinese companies tasked with the construction of connectivity projects are required to honor their social responsibilities to localize the distribution of benefits and the employment of

talent. Meanwhile, media organizations and think tanks are also expected to be good storytellers of the Belt and Road Initiative.

**Thirdly, shifting from “connecting the routes” to “connecting the networks”.** From the perspective of planning, most of the six economic corridors have been constructed in a linear manner, focusing on building two-way connected international routes. So far, considerable progress has been achieved. In the next step, based on the previous work of “connecting the dots”, the BRI connectivity projects should focus on “weaving the lines into a network” so that the connectivity projects currently scattered in different countries can be connected through various mechanisms and protocols, producing maximum network effect to realize economies of scale. For this purpose, the BRI can expand its network of friends while integrating and mobilizing resources within the network. It needs to not only value bilateral value statements, but also listen to voices representing regional and multilateral interests, before putting forward more regional and plurilateral cooperation initiatives on connectivity to increase their international attractiveness and competitiveness.

**Fourthly, focusing on connectivity in new areas of digital economy, green development, space and innovation.** Digital, low-carbon transformation of the world economy has become the norm. The new round of technological and industrial revolution is already unleashing its exceptional power. It is strategically important for China and other participating countries to coordinate and cooperate in the fields of digital economy, technological innovation, carbon reduction and environmental protection, and to connect standards and share technologies with each other. Moreover, it determines the positions and development advantages of China and other participating countries in the new wave of global economic restructuring and industrial transformation.

**Fifthly, balancing development and security and following the bottom-line mentality to adapt to the ever-changing international environment.** The profound changes never seen in the past century are continuing to unfold. American best-selling author

Thomas Friedman described the COVID-19 pandemic as “our new historical divide”. As Kristalina Georgieva, Managing Director of the International Monetary Fund, once said, we are experiencing a fundamental shift in the world economy from relative predictability and stability to greater uncertainty, volatility and vulnerability in the midst of heightened geopolitical confrontation and more frequent natural disasters.<sup>26</sup> According to the Report to the 20<sup>th</sup> National Congress of CPC, the once-in-a-century pandemic has had far-reaching effects; a backlash against globalization is rising; and unilateralism and protectionism are mounting. The global economic recovery is sluggish, regional conflicts and disturbances are frequent, and global issues are becoming more acute. The world has entered a new period of turbulence and change. On September 20, 2022, UN Secretary General Antonio Guterres gave a warning in his opening remarks at the general debate of the 77<sup>th</sup> session of the General Assembly, that “our world is in peril and geopolitical divides are undermining all forms of international cooperation”. The strategic competition among great powers has intensified. Protectionism and isolationism have resulted in the emergence of exclusivity, cliques and camps. Globalization is suffering setbacks and the world economy is slowing down, while populism is picking up in many countries. The Belt and Road Initiative is now being advanced in a different environment. To promote the high-quality development of the BRI, it is advised to navigate future uncertainty in global development, make preparations including risk assessments, alerts, precautions and responses, and strike a balance between development and security to ensure long-term stability and development of the BRI.

To sum up, with the expansion of connectivity projects, the Silk Road spirit of peace and cooperation, openness and inclusiveness, mutual learning, and mutual benefit will reach every corner of the world, the joint efforts for the Belt and Road connectivity will evolve into an unstoppable trend, and humanity will embark on a greater and smoother journey towards shared modernization.

<sup>26</sup> Xiong Maoling, “IMF Managing Director says we are experiencing a fundamental shift in the world economy”, XINHUANET, October 7, 2022, [http://www.news.cn/fortune/2022-10/07/c\\_1129054258.htm](http://www.news.cn/fortune/2022-10/07/c_1129054258.htm) (accessed September 14, 2023)

# China's Belt and Road Initiative 2.0—A Recipe for Development – A Case Study of the CPEC

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## **Abstract:**

As the world emerges from the aftermath of COVID-19, governments everywhere are eager to provide jobs for their people, rejuvenate economic activity, spur trade, and build new climate-resilient infrastructure. Emerging economies, in particular, encounter difficult obstacles when making investments for expansion, such as in infrastructure. Many countries like Pakistan are attempting to maintain the growth catch-up process while managing new economic transitional upheavals, protectionist trade and technological trends, and other challenges. The Belt and Road Initiative (BRI) has sparked global interest in this regard. It is an ambitious program that involves more than 150 nations working together through infrastructure expenditures in order to increase connectivity for cross-border trade and investment and produce economic benefits for the participating nations. It aims to close significant infrastructure gaps and create growth-capable infrastructure. Six economic corridors form BRI, with the China-Pakistan Economic Corridor (CPEC) as one of the centerpiece projects. This study examines the possibility of using the China-Pakistan Economic Corridor (CPEC) to support development of Pakistan's Climate resilient infrastructure development. Additionally, it looks at the distinct opportunity that CPEC offers for economic development and suggests ways to maximize the advantages while minimizing the negative effects on

the environment. The research methodology includes a comprehensive review of literature, and case studies to gain insights into the challenges and opportunities associated with CPEC and sustainable growth.. Based on the analysis of opportunities and challenges, this study proposes a set of sustainable strategies for leveraging CPEC. The findings of this research contribute to the ongoing discourse on sustainable development and provide actionable insights for policymakers and practitioners working in the context of CPEC.

## **Keywords:**

China-Pakistan Economic Corridor (CPEC), Belt & Road Initiative (BRI), Global Development Initiative (GDI), Economy, Sustainable Development, SDGs, Environmental Impact, Chinese foreign direct investment

## **1. Introduction:**

China's successful economic reform has provided invaluable experiences and lessons for other developing economies to solve the issues in their economic development and reforms. Although market liberalization is essential to its success, additional guiding principles include justice, equity, cross-border inclusion, mutually beneficial collaborations, and sustainable growth. In 2009, China held a 4% share of global Foreign Direct Investment (FDI). Remarkably, despite the economic slowdown caused by the

COVID-19 pandemic, China's share surged in 2020. This significant increase has propelled China to surpass all other nations, establishing itself as the largest direct investor in history.

### Top Destinations for Chinese Construction Projects In Asia (2005-2019),

Country	Total Contracts (US\$ billions)	Global Ranking
Pakistan	42	1
South Africa	32.3	2
Malaysia	25.8	3
Indonesia	25.7	4

Source: MOCOM, China

Today, China is the world's top producer and consumer of goods including steel, cement, coal, machinery, electronics, clothing, footwear, and home appliances. It is the biggest manufacturer and exporter of more than 200 industrial goods worldwide. It manufactures 70% of computers, 70% of mobile phones, and 60% of the world's power generation equipment. The list of its trading partners include:

Partner	Export USD Millions	Import USD Millions
Pakistan	16183	1808
India	74924	17970
Vietnam	98004	64078
Bangladesh	17335	1036
Malaysia	52482	71630
Philippines	40759	20170
United States	418584	123236

Source: <https://wits.worldbank.org/CountryProfile/en/Country/CHN/Year/2019/TradeFlow/EXPIMP/Partner/by-country>

To improve and diversify its export channels by opening up new markets and trade routes for Chinese goods and services and for connecting China to Asia, Europe, and Africa, China introduced the Belt and Road Initiative in 2013, which is meant to connect the Asian market to Europe and Africa by land and sea as part of China's growth initiative (State Council of the PRC, 2015b). The initiative covers half of the world's population, and a third of the world's GDP and has been called the largest infrastructure program in human

history (Kirchherr et al., 2018; Williams et al., 2020). President Xi Jinping emphasized that the BRI is not a one-sided endeavor but a mutually beneficial initiative (2019). He emphasized the need for equal participation, respect for sovereignty, and respect for the development priorities and cultural diversity of participating countries. The aim is to create an open, inclusive, and balanced regional cooperation framework that benefits all participants (Butt, H. D., Aijaz, U., Saif, O. B., & Athar, A., 2023). This enhanced connectivity is seen as a catalyst for economic growth, regional integration, and improved living standards. President Xi underscored the importance of sustainable development in the BRI, emphasizing the need to promote green development, ecological conservation, and clean energy. He stressed the integration of environmental protection, social responsibility, and economic development to achieve long-term and sustainable growth..

At the core of the BRI is connectivity, building strong transport, communications, and energy connections between countries through policy cooperation, infrastructural investment, project implementation, and operational management to promote inclusive, equitable, and mutual economic growth through collaborative sustainable development. China has quickly become the largest single creditor in the world and Chinese lending to developing countries is bigger than all other bilateral lenders combined. Infrastructure projects are often a really great investment for developing countries, and successful BRI projects include a new hydropower dam in Uganda, a new network of gas and oil pipelines in Central Asia, and a 750-kilometer railway from Addis Ababa to Djibouti and host of projects in Pakistan. Now it's more like a global initiative rather than just a Chinese initiative and the same is vital for addressing the infrastructural gaps. As the Asian Development Bank (ADB) estimates, climate-adjusted infrastructure investment needs would amount to 5.7% of GDP per annum for Southeast Asia and 5.2% per annum for East Asia over the period 2015–2030. These projects were unusually difficult to finance because of their lengthy gestation periods, and higher levels of uncertainty regarding their economic viability and cash flows than other types of investments (Khor, H. E., Poonpatpibul, C., & Yong Foo, S. U. A. N. (2021).



While the focus is on transport, energy, and communications infrastructure, the BRI's activities are now much broader and embrace aspects of collaboration ranging from agriculture, environment, taxation, security, global health, and humanitarian response to cultural exchanges. The significance includes not just accelerating economic transition, but also inclusive development to overcome the middle-income trap.. In 2019, the highest number of projects was introduced i-e, 433 but the Covid-19 pandemic slowed the progress as the volume of projects in 2021 shrank to USD 13.6 billion BRI has demonstrated that the challenges preventing growth in various regions of the world can be addressed by regional integration and collaboration among emerging nations. The project has help stimulate the creation of new supply chains and the deployment of funding tools for trade and infrastructure development connecting markets across regions (UNCTAD, 2022).. It is now obvious that the vast number of actors participating with the BRI are also sponsoring SDGs including the “partnerships for the goals” mentioned in SDG 17..

The BRI aims to bring various benefits to developing countries. While the specific advantages can vary depending on the country and project involved. One of the primary focuses of the BRI is infrastructure development. Developing countries often face challenges in building and improving their infrastructure, such as transportation networks, ports, and energy facilities. The BRI offers opportunities for these countries to receive investments and technical expertise from China, which can help enhance their infrastructure and connectivity. Improved infrastructure and connectivity can stimulate economic growth in developing countries.

## 2. China-Pakistan Economic Corridor (CPEC)

The year 2023 marks the commemoration of the tenth anniversary of the inception of the CPEC. Serving as a flagship endeavor of China's BRI, CPEC works as a pivotal link connecting Kashgar in Western China to Pakistan's Gwadar Port on the Arabian Sea. This strategic corridor acts as a crucial gateway to regions from Africa, the Middle East, and Central Asia. CPEC has made substantial contributions by bolstering Pakistan's economy, catering to China's

energy requirements, and holding the potential to promote stability in the Western region through economic integration. It is a transformative initiative of immense significance in the bilateral relations between Pakistan and China. The project's core objectives encompass the development of railways, roads, energy infrastructure, and ports, and it has made noteworthy strides by 2023, reshaping the landscape of infrastructure development, regional trade dynamics, and economic integration.

A network of infrastructure projects within CPEC, including roads, rail, special economic zones, and energy projects, make up the about 3,000 km-long connectivity corridor (Ismail et al., 2023). In order to promote economic growth and development, it seeks to enhance Pakistan's transport system, increase energy output, and draw Chinese and international investment (Rehman et al., 2021). Infrastructure development is one of CPEC's main pillars. (Naurin & Gul, 2023). In 2014, Anatol Lieven , Professor at Georgetown University stated:

“Over the decades during which I have worked in and written about Pakistan, there have been so many supposed national “turning points” at which the country failed to turn that I have almost ceased to notice them.

But when earlier this year the Pakistani Government described China's planned energy and transport corridor through Pakistan to the Arabian Sea as a “fate changer”, it may - perhaps - have been telling the truth.”

The development of energy projects is a crucial component of CPEC (N. Shahzad et al., 2023). Through the development of diverse energy sources, CPEC seeks to alleviate Pakistan's chronic energy situation. These consist of installations for renewable energy sources, hydropower schemes, and coal-fired power stations. The CPEC project seeks to reduce power shortages, encourage industrial development, and enhance Pakistani citizens' quality of life in general by enhancing the country's energy infrastructure (N. Shahzad et al., 2023). Overall, the CPEC is a sizable project meant to modernize Pakistan's infrastructure and advance its economy (McCartney, 2022a).

Despite opposition and difficulties, the project has demonstrated that it has the potential to be address infrastructure and energy scarcity issues of Pakistan and be beneficial for Pakistan and China, enhancing their economic connectivity and promoting regional cooperation (Aijaz, U., & Hassan Daud Butt, D. S. P. G, 2021). Thanks to concerted efforts and unwavering support from the leadership from both sides, a remarkable feat was achieved within a short timeframe of just 36 months: the completion of most projects and significant progress on those nearing completion. Additionally, the accomplishment of CPEC projects demonstrates the tenacity of the cooperation between these two countries. The phrase “Iron Brotherhood” refers to a durable and unbreakable bond that is comparable to the strength of iron. The success of CPEC, despite its many difficulties and challenges, demonstrates the strength of this collaboration, with both countries cooperating to overcome problems and accomplish shared objectives. Additionally, the influence of CPEC includes strategic and geopolitical aspects in addition to economic development. The strategic coordination and cooperative actions within CPEC demonstrate the depth of cooperation that goes beyond economic ties and encompasses shared objectives in regional development.

The CPEC represents a growth and development corridor characterized by complementary advantages, cooperation, shared benefits, and mutual prosperity. Comprehensive transportation infrastructure and industrial collaboration between China and Pakistan serve as the primary axis, while concrete economic and trade partnerships, as well as people-to-people exchanges and cultural interactions increase the deeper cooperation. The essence of CPEC lies in its significant joint endeavors, including infrastructure development, industrial growth, and enhancing the quality of life, all aimed at promoting socioeconomic progress, prosperity, and security in the regions it traverses.

In the past 10 years, besides the successful execution of the mega CPEC, the identification and mitigation of risks of the project became of paramount importance. This encompassed not only recognizing technical risks associated with project execution but

also external factors such as shifts in regulations, economic fluctuations, and unforeseen events like the pandemic. Continuously developing contingency strategies and robust risk mitigation plans became an ongoing imperative due to the unprecedented scale of CPEC, which was a government-to-government initiative with an estimated value of around \$60 billion.

One of the most significant opportunities that emerged from this experience was the cultivation of cross-cultural understanding with stakeholders from both China and Pakistan. This involved engaging with government entities, investors, contractors, and the local community, fostering a rich tapestry of relationships. This project was marked by intricate challenges and exhilarating achievements, adding to the legacy of collaborative efforts. Effectively steering such projects required a unique blend of technical expertise, strong leadership skills, and adaptability to navigate the ever-evolving landscape. The experience was demanding, yet it was ultimately immensely rewarding as it contributed significantly to the advancement of our shared goals and mutual prosperity. Since the commencement of the initiative, the realm of commercial and trade cooperation between China and Pakistan has experienced substantial growth since its inception in 2013. Remarkably, China has consistently held the position of Pakistan’s primary trading partner for a decade, concurrently ranking as the leading source of foreign direct investment in Pakistan for nine consecutive years. The spectrum of collaborative domains between these two nations has evolved steadily, transcending the traditional focus on energy, connectivity, and infrastructure, and expanding into new frontiers. The fundamental components outlined in the Long-Term Plan of the China-Pakistan Economic Corridor (CPEC) encompass the following:

**Connectivity:** The establishment of robust transport infrastructure serves as a foundational and indispensable element for CPEC. This infrastructure not only guides and propels the economic and social development of regions along the CPEC but also fosters interconnectivity and comprehensive cooperation between China and Pakistan, culminating in mutual prosperity.

**Energy:** China and Pakistan are poised to bolster their collaboration in areas spanning oil and gas, electricity, and power grids. A focal point lies in advancing major projects in thermal power, hydropower, coal gasification, and renewable energy generation. Additionally, attention will be given to enhancing power transmission networks to ensure reliability and stability in power transmission and supply.

**Industries & Industrial Parks:** CPEC envisions strengthening cooperation in trade and industry, expanding bilateral economic and trade ties, and elevating the level of mutual trade liberalization. The goal is to cultivate key areas of cooperation, enhance the effectiveness of collaboration, and align economic development efforts through synchronization, coordination, and and developing SEZs.

**Agricultural Development and Poverty Alleviation:** Leveraging their respective competitive advantages, China and Pakistan are committed to reinforcing agricultural infrastructure development within the CPEC region. This includes active participation in agriculture personnel training, technical exchanges, and cooperative endeavors. An Memorandum of Understanding (MoU) is also set to be signed, focusing on socio-economic development, agriculture, and poverty alleviation. The shared objective is to fortify cooperation between local governments, foster communication among non-governmental organizations, and embark on extensive project collaborations centered on public opinion communication, people-to-people friendship, and the betterment of livelihoods.

China and Pakistan aspire to explore the establishment of multi-level cooperation mechanisms and intensify policy coordination. They also aim to enhance their respective financial reform and opening-up efforts, introduce innovations in financial products and services, and manage financial risks effectively to create a conducive financial environment for the development of CPEC.

The CPEC initiative encompasses a diverse array of projects, also spanning communication, fiber optics, maritime sector (including industrial hubs, seaports, and

road networks), and energy/power sectors ranging from production to transmission. This initiative, an extension of China's BRI, not only generates significant economic opportunities for Pakistan but also establishes vital connections between mainland China and South Asia, with future links to Europe and beyond. From China's perspective, CPEC promises to streamline trade and oil transportation through Gwadar deep-sea port. For Pakistan, CPEC is expected to contribute to an additional 2-2.5% annual economic growth and create both direct and indirect job opportunities between 2015 and 2030.

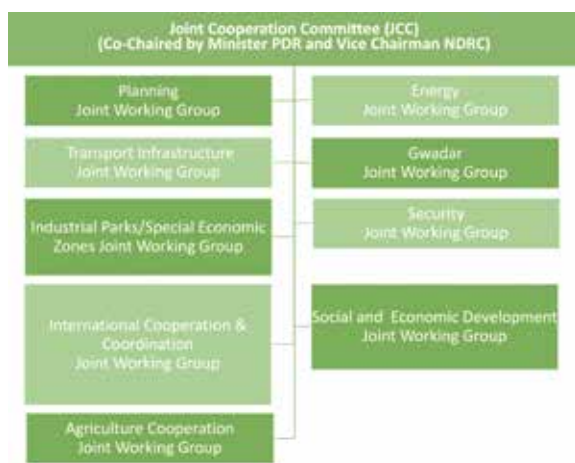


In 2015, Pakistan and China formalized their commitment to CPEC by signing 51 Memorandums of Understanding (MoUs), marking the commencement of CPEC's implementation. During President Xi Jinping's visit to Pakistan in April 2015, the two nations established a "1+4" cooperation mode, with CPEC at its core, and prioritized Gwadar, Energy, Transport Infrastructure, and Industrial Cooperation. China's investment in CPEC is approximately \$46 billion over 15 years, roughly equivalent to 20% of Pakistan's annual GDP. The majority of these funds, approximately \$43 billion, will be directed toward the energy sector to add 17,000MW of electricity to the national grid. The remaining \$12 billion will be allocated for transportation, communication, infrastructure, and railway projects, fostering economic development across Pakistan.

CPEC's goals encompass diversifying energy sources, enhancing connectivity, and spurring overall economic growth. The project's completion is divided into four distinct phases:

- a. Early projects with an anticipated completion timeline by 2018.
- b. Short-term projects targeted for completion by 2020.
- c. Medium-term projects aimed for completion by 2025.
- d. Long-term projects scheduled for completion by 2030.

The Corridor projects operate with the objective of fostering multi-sectoral growth, as facilitated by the following Joint Working Groups (JWGs):



Under China Pakistan Economic Corridor numerous road networks have been established creating rural-urban synergy and the SEZs on these road links are finding new means to attract investments, especially in the post-COVID-19 scenario. In Pakistan, the CPEC initiative has created over 200,000 opportunities for employment, 6000 MW of electricity with over 800 Kms of transmission lines, and over 510 KMs roads creating rural-urban synergy and regional connectivity. It has helped Pakistan develop its Blue economy through Gwadar port and its connectivity with the hinterland through the western route and the rest of the world through the upcoming Gwadar airport which is being constructed with a Chinese grant of \$230 million and will be completed this year. The connectivity through optical fiber and through transmission lines is also helping Pakistan achieve the development targets for having an endogenous mechanism for sustainable

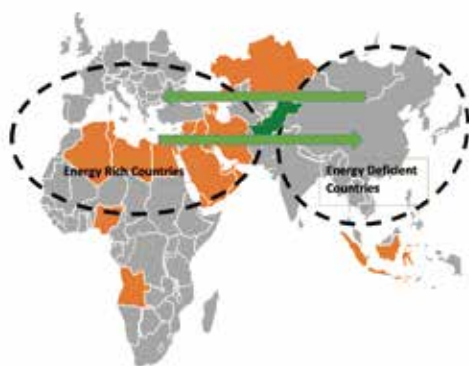
economic growth. The CPEC projects are helping create favorable conditions for development, and broadening extensive consultation for the harmonizing policy with the view of “seeking a common ground”. Utilizing the human interaction aspect of the CPEC, more than 20,000 individuals have undergone Chinese language training, while over 500 educational conferences have been organized. Particularly noteworthy is the initiation of more than 1,000 faculty and faculty exchange programs. Since the launch of this initiative in 2013, the landscape of trade and commercial collaboration between China and Pakistan has experienced substantial growth. The range of cooperative effort between these two countries has consistently evolved, extending beyond the traditional domains of energy, connectivity, and infrastructure and venturing into new and diverse arenas.

Overall, The CPEC is the true manifestation of regional connectivity with the vision of improving people’s lives by facilitating inclusive development and enabling mutual prosperity; thereby creating new markets, scaling up supply chains, removing bottlenecks for holistic development, ensuring energy security and creating millions of jobs for people in the region. Moving forward, Pakistan is trying to further improve the economic connections between the two nations and looks to Chinese FDI and industrial help for a road toward stability. The potentials of CPEC includes

- ◆ Most active Economic Corridor within BRI
- ◆ Emerging large consumer market
- ◆ High growth potential
- ◆ Close regional trade and economic integration prospects
- ◆ Gwadar port and maritime connectivity

As per the CPEC long term plan by the year 2020, the CPEC has taken its initial form, effectively addressing significant impediments to Pakistan’s economic and social development. Now , at this stage, the CPEC is expected to commence its role in enhancing economic growth for both countries. By 2025, the construction of CPEC strives to reach an

advanced stage, with the industrial system nearing completion and major economic functions fully operational in a comprehensive manner. The quality of life for the populations living along the CPEC route should show significant improvement, contributing to more balanced regional economic development. So far the project has been able to achieve its targets despite the impact that COVID 19 had on the movement of work force and resources. The impact and the details of the total portfolio is as under:



### Pakistan – A Vital Link between Energy-Rich and Energy deficient regions

PROJECTS	Status	COST (US\$ M)
Energy (IPP financing mode)	Completed	4,979
Cross Border Optical Fiber Project (GCL)	Completed	37.4
DTMB (Grant)	Completed	4
Eastbay Expressway Gwadar (Interest-free Loan)	Completed	166
Gwadar City Master Plan and Airport (Grant)	Completed	257
Energy (IPP financing mode)	Under Implementation	18,258
Transport and Infrastructure (GCL) 3 projects	Under Implementation	5,830
Energy (IPP financing mode)	Under Implementation	11,523
Main-Line-1 (ML-1) (GCL)	In pipe line	8,250
Gwadar Projects (Grant) 6 projects	Under Implementation	357
<b>Grand Total</b>		<b>49,661.4</b>

## 2.1 Energy Projects

Through the development of diverse energy sources, CPEC seeks to alleviate Pakistan’s chronic energy situation. These consist of installations for renewable energy sources, hydropower schemes, and coal-fired power stations. The CPEC project seeks to reduce power shortages, encourage industrial development, and enhance Pakistani citizens’ quality of life in general by enhancing the country’s energy infrastructure (N. Shahzad et al., 2023).

CPEC has made remarkable progress at present. It has completed a total of 14 energy projects, which collectively will generate 12,520 megawatts of energy as of 2023. Additionally, there are currently two energy projects under construction, and five more energy projects are being considered for future development. Significant CPEC energy projects include:

#	Project Name	MW
Completed Projects		
1	1320MW Sahiwal Coal-fired Power Plant	1320
2	1320MW Coal-fired Power Plant at Port Qasim Karachi	1320
3	1320MW China Hub Coal Power Project, Hub Balochistan	1320
4	660MW Engro Thar Coal Power Project	660
5	1000MW Quaid-e-Azam Solar Park (Bahawalpur)	400 / 600
6	50 MW Hydro China Dawood Wind Farm, Gharo, Thatta	50
7	100MW UEP Wind Farm, Jhimpir, Thatta	100
8	50MW Sachal Wind Farm ,Jhimpir, Thatta	50
9	100MW Three Gorges Second and Third Wind Power Project	100
10	Matiari to Lahore ±660 KV HVDC Transmission Line Project	4,000 MW Evacuation Capacity
11	720MW Karot Hydropower Project, AJK/ Punjab	720
12	330MW HUBCO Thar Coal Power Project (Thar Energy)	330
13	1320MW SSRL Thar Coal Block-I 7.8 mtpa & Power Plant (2×660MW) (Shanghai Electric)	1320

#	Project Name	MW
14	330MW HUBCO ThalNova Thar Coal Power Project	330
Under Construction Projects		
15	884MW Suki Kinari Hydropower Project, KP	870
16	300MW Coal-Fired Power Project at Gwadar	300
Under Consideration Projects		
17	1124MW Kohala Hydropower Project, AJK	1124
18	700.7MW Azad Pattan Hydropower Project, AJK/Punjab	700.7
19	1320 MW Thar Mine Mouth Oracle Power Plant & surface mine	1320
20	50MW Cacho Wind Power Project	50
21	50MW Western Energy (Pvt.) Ltd. Wind Power Project	50

The Renewable energy projects, such as wind and solar power in CPEC, have contributed to clean and sustainable energy generation, reducing Pakistan's dependence on fossil fuels and lowering greenhouse gas emissions. They helped Pakistan in exploring its wind corridor in Sindh and providing cheaper and cleaner form of energy. They also enhanced energy security by diversifying the energy mix, reducing vulnerability to energy supply disruptions, and promoting self-sufficiency in electricity generation. One of the other significant project is the Thar Block-I Integrated Coal Mine Power Project which is a key energy project in the CPEC, located in the desert region of south-eastern Sindh province of Pakistan, including an open-pit coal mine with an annual output of 7.8 million tons and a 2x660MW lignite coal-fired power plant. The project developed by Shanghai Electric has transformed the lives of the people in the area and has contributed significantly toward socio-economic development (Ali, Y., Rasheed, Z., Muhammad, N., & Yousaf, S.,2018). Similarly, Thar Block-II Coal Mine and Power Project as part of its green, sustainable development strategy. More than 2 million local families in Pakistan have their electricity needs guaranteed by the Project's steady operation, which also advances the international balance of payments, lowers the cost of producing electricity, eases the conflict between supply

and demand, and serves as a model for the integration of coal mines and power plants in Pakistan.

The Matiari-Lahore 660kV HVDC Transmission Project is another gain of our cooperation. It was conceived and built on a BOOT basis by the State Grid Corporation of China (SGCC) as the only transmission project of the CPEC. The project's voltage level is 660kV, its transmission capacity is 4000MW, and its maximum DC current is 3030A. The transmission line is 886 km long, running through Sindh and Punjab provinces from the southwest to the northeast. On 1 September 2021, the project achieved commercial operation, and it will continue to run for 25 years.

The third example is Suki Kinari Hydropower Project, located on the Kunhar River in the Manshera District of KPK Province, northern Pakistan, with an altitude between 1300m and 2400m. The hydropower station is equipped with 4 Pelton turbine generator units with a total installed capacity of 884MW. After the completion of the project, it can provide Pakistan with 3.2 billion kilowatt-hours of clean energy each year.

## 2.2 Industrial Cooperation

The promotion of industrial development is seen to be one of the effective methods for fostering an economy's long-term expansion. To boost their economic growth, numerous countries have adopted industrial development planning during the past few decades. But in order to achieve this aim, one tactic is to develop SEZs at designate places for industrial growth, as we have witnessed numerous nations with business parks, industrial estates, export processing zones, , etc. The best example in this regard is China. For instance, by 2009, China has developed almost many SEZs at the province and state levels. As per estimation, SEZs contributed almost 22% in the national GDP of China, 46% in FDI and 60% of total exports accompanied with job creation for 30 million people (Khan, K., Khan, K., & Anwar, S. (2016). Establishing and operationalizing Industrial Zones and Special Economic Zones (SEZs) is a multifaceted endeavor, encompassing intricate challenges such as land acquisition, infrastructure development, regulatory frameworks, and investor engagement. The ultimate aim is to ensure the effectiveness and success of these

zones in bolstering Pakistan’s economic growth and overall development.

Within the framework of the CPEC, a substantial effort is directed towards creating industrial zones and nine SEZs in various regions of Pakistan. These zones are strategically designed to attract foreign investments, stimulate manufacturing, generate employment opportunities, and catalyze economic expansion (Hassan Daud Butt, m. u. a., & Majeed, s. 2022). Leveraging the China-Pakistan Free Trade Agreement (CPFTA) through CPEC is also of paramount importance for national economic growth.

The numerous trade and market access projects embedded within CPEC will unfurl a diverse array of opportunities across various facets of life. In this context, Pakistan’s collaborative partnership with China serves as a valuable asset for enhancing trade, streamlining market access, elevating living standards, and achieving sustainable and inclusive growth. Additionally, CPEC is poised to empower Pakistan to extend its commercial and transportation linkages while enhancing its economic influence across Central Asia, South Asia, the Middle East, Africa, and Europe. In recent years, a significant portion of Pakistan’s trade deficit has stemmed from its trade with China. Therefore, the development of Special Economic Zones (SEZs) and Export Processing Zones (EPZs) under CPEC should be meticulously planned to align with the objectives of expeditious industrial growth and the promotion of exports through diversified product offerings. Furthermore, while developing these zones, careful consideration should be given to the potential for enhancing exports through value addition via manufacturing processes. China, as the world’s second-largest economy and leading global exporter with \$2.2 trillion in exports and the second-largest importer with \$1.8 trillion in imports, presents substantial opportunities for Pakistan. The current export volume of goods and services from Pakistan to China, totaling \$1.5 billion, has the potential to increase manifold through enhanced cooperation between the two nations and increased access to Chinese markets and linking the Pakistani businesses with Chinese supply Chain.

To optimize the utilization of SEZs and EPZs, it is essential to implement appropriate investment strategies, ensure the optimal mix of industries and zones, enhance management practices, and promote incentive structures. The Government of Pakistan through the Ease of Doing Business initiative is working on these as the introduction of SEZs under CPEC marks the inception of a new era of rapid industrial development. In this endeavor, Pakistan aspires to establish robust and potentially productive industries, either in collaboration with Chinese enterprises or alongside them within SEZs.

#	Project Name
Under Construction Projects	
1	Rashakai Special Economic Zone
2	Dhabeji Special Economic Zone
3	Allama Iqbal Industrial City
4	Bostan Special Economic Zone
In-Pipeline Projects	
5	ICT Model Industrial Zone
6	Industrial Park on Pakistan Steel Mill Land
7	Mirpur Industrial Zone
8	Mohmand Marble City
9	Moqpondass Special Economic Zone

While embarking on this industrialization phase, Pakistan will encounter a spectrum of opportunities to harness and challenges that must be effectively managed for the success of SEZs. These challenges encompass low investment levels, the dispersal of industries across the country, institutional weaknesses, suboptimal human resources, limited expertise in vocational skills, elevated business costs, and inadequate infrastructure. Among the myriad advantages of CPEC, the prominence of specialized economic zones stands out. These zones specialized economic zones will be outfitted with cutting-edge facilities, with a primary focus on industries such as food, pharmaceuticals, engineering, automotive, and food packaging (Aijaz, U., Hassan Daud Butt, D. S. B., Hayat, & Mazhar, M., 2022). They serve as catalysts for new entrepreneurial ventures and foster the emergence of new enterprises within designated geographical areas.



Source: <https://www.ppmela.com/wp-content/uploads/2020/07/Special-Economic-Zones-of-Pakistan-1-copy.jpg>

Rashakai Special Economic Zone (RSEZ), a flagship project of industrial cooperation under CPEC and listed as the prioritized CPEC SEZ by China-Pakistan Joint Cooperation Committee, has been seen as a model for industrial production and cooperation under CPEC RSEZ, covering a total area of 1,000 acres, is planned to be implemented in three phases with an estimated total investment of 128 million USD. Currently, the Phase-I construction is in effective progress. As the first industrial cooperation project implemented under CPEC Framework, Chinese and Pakistani Governments attaches great importance to the progress of Rashakai SEZ.. In May 2021, the construction of Rashakai SEZ Phase I was officially launched. Rashakai SEZ is jointly developed by CRBC and KPEZDMC, which is in KP Province and adjacent to M1 and Swat Expressway. It covers an area of 4 square km and is developed in three phases with a total investment of US\$ 130 million. It is committed to developing the comprehensive industry cluster, international commercial & trade center, high-tech center and logistic center in Pakistan. In line with its endowments, and the urgent requirements by the local market, it dedicates to introduce home appliance, food processing, machinery & equipment manufacturing, furniture & building materials and other supporting industries.

### 2.3 Infrastructure Projects

The infrastructure projects are geared towards the enhancement and establishment of new railway and road networks, encompassing the construction of 1,200 kilometers of fresh tracks and the modernization of 3,100 kilometers of existing ones. The pre-existing 585 kilometers of highways and the ongoing rail project will play a pivotal role in fostering regional integration. This enhancement in connectivity not only promotes economic cooperation and interconnectivity between China and Pakistan but also extends these benefits to neighboring nations within the region. The overarching vision of the corridor entails the development of infrastructure and energy projects that serve as conduits for trade, investment, and collaborative ventures involving multiple countries. This improved physical connectivity is poised to facilitate the seamless movement of goods, people, and ideas across borders, thereby stimulating regional trade and cooperation. By providing efficient transportation routes, CPEC has the potential to reduce transportation costs and eliminate trade barriers among participating nations. This, in turn, can stimulate greater trade volumes and diversified trade pathways, ultimately benefiting all participating nations (Aijaz, U., & Butt, H. D. (2021).



#	Project Name	Length (KM)
Completed Projects		
1	KKH Phase II (Havelian - Thakot Section)	120
2	Peshawar-Karachi Motorway (Multan-Sukkur Section)	392
3	Orange Line Metro Train - Lahore	27
4	Cross Border Optical Fiber Cable (Khunjab - Rawalpindi)	820
5	Pilot Project of Digital Terrestrial Multimedia Broadcast (DTMB)	
6	Hakla - D.I Khan Motorway	297
Under Construction Projects		
7	Zhob - Quetta (Kuchlak) (N-50)	305
8	Khuzdar-Basima Road (N-30)	106
9	Hoshab - Awaran Road Section (M-8)	146
10	KKH Alternate Route Shandur - Chitral Road	153
11	Nokundi-Mashkhel Road	103
In-Pipeline Projects		
12	Up-gradation and Dualization of ML-1 and establishment of Dry Port near Havelian	1733
13	Up-gradation of D.I.Khan (Yarik) - Zhob, N-50 Phase-I	235
14	KKH Alternative Route Gilgit-Shandur Road	213
15	Realignment of KKH Phase-I Thakot - Raikot Section	250
16	Peshawar - D.I.Khan Motorway	360
17	Awaran - Khuzdar Road Section (M-8)	168
18	Dir Expressway	29.6
19	DTMB-A (Digitalize the existing three sites of PTV)	
Long Term Projects		
20	Mirpur-Muzaffarabad-Mansehra Road	200
21	Karachi Circular Railway	43
22	Mashkhel - Pangur Road	200
23	Quetta Mass Transit	
24	Greater Peshawar Region Mass Transit	

CPEC's augmented infrastructure has the capability to connect regions beyond the borders of China and

Pakistan, including Central Asia, the Middle East, and even Europe. This prospect has the potential to unlock novel trade routes and strengthen economic bonds between regions. It is imperative to acknowledge that while CPEC holds substantial promise for regional integration, it also presents various challenges and intricacies. Factors such as geopolitical considerations, local community apprehensions, environmental impacts, and infrastructure quality must be diligently addressed to ensure the successful realization of integration objectives (Butt, H. D. CPEC—Corridor to Lasting Progress) The CPEC comprises three major routes:

**Western Route:** This route spans from KPK and Balochistan, passing through Panjur, Turbat, Quetta, Qalat, Dera Ismail Khan, Zhob, and concluding at Havelian. It offers the possibility of connecting with Iran and Afghanistan through Taftan and Chaman.

**Eastern Route:** The route begins at Gwadar and passes through Sindh and Punjab, covering major cities such as Karachi, Sukkur, Hyderabad, Multan, Rahimyar Khan, and Havelian through the motorway. The central route spans from Gwadar to Havelian, encompassing the capitals of Sindh, Punjab, and Balochistan, including Sukkur, Khuzdar, Mianwali, Taxila, and D.G. An extension from Taxila through Torkham and Peshawar will establish a link to Jalalabad in Afghanistan.

**Northern Route:** Karakoram Highway Phase-II (Havelian-Thakot section) project is an important component of the North-South trunk road network of Pakistan. The project facilitates the transportation and commutation of 7 million people in the project area and reduces the travel time between Havelian and Thakot from 5.5 hours to less than 2 hours, saving an average of about Rs 38 crore in transportation costs per year. This shared route connects Kashgar through the Karakoram Highway, commencing in China and entering Pakistan via the Khunjerab Pass in Gilgit-Baltistan. It then proceeds through Hasanabdal, Abbottabad, and Burhan, linking to the Islamabad-Peshawar Motorway. From there, it branches out into the Central, Western, and Eastern Routes to ultimately reach Gwadar.

◆ **ML-1 Railway Project**

One of the major infrastructure project of the CPEC is the ML-1 (Main Line 1) project, which centers on the enhancement and modernization of Pakistan's railway network. The ML-1 initiative encompasses the revitalization and refurbishment of the existing railway infrastructure in Pakistan, with a specific focus on the railway line that connects Karachi in the south to Peshawar in the north. The primary objective of this project is to transform the existing railway track into a dual-track system while electrifying the entire line. This transformation will facilitate swifter and more efficient train operations. Additionally, the project encompasses the installation of contemporary signaling and telecommunication systems to enhance the safety and reliability of train services. By elevating the quality of the railway tracks and modernizing the associated systems, the ML-1 project seeks to augment the speed and capacity of trains. This, in turn, will lead to reduced travel durations and the ability to accommodate larger volumes of freight and passengers. The upgraded railway system is anticipated to serve as a conduit for both freight and passenger transportation, streamlining the movement of goods and people throughout the country.

The Potential Benefits of the game changer ML-1 project are:



**Enhanced Trade and Connectivity:** The modernized railway system is expected to enhance trade connectivity between China and Pakistan by providing a more efficient and reliable transportation route for goods

**Economic Growth:** The improved transportation infrastructure can lead to economic growth by reducing transportation costs, facilitating the movement of goods to and from ports, and boosting trade-related activities

**Regional Development:** The project could contribute to the development of underdeveloped regions along the railway route by providing better access to markets and resources.

**Technology Transfer:** Collaboration between China and Pakistan on the project could lead to technology and knowledge transfer, allowing Pakistan to develop expertise in railway construction and modernization

**Reduced Congestion:** By increasing the capacity of the railway system, the project could help alleviate congestion on roads and highways by shifting some of the freight and passenger traffic to rail.

**Improved Connectivity within Pakistan:** The upgraded railway network could improve connectivity within Pakistan, making it easier for people to travel and businesses to operate across different regions of the country.

**The Lahore Orange Line Rail Transit Project** under CPEC is a collaborative effort between Norinco International Corporation, China Railway International Corporation, and local engineering companies. This project represents one of the most cutting-edge urban rail transit initiatives in the entire South Asian region. The operationalization of the Orange Line Metro has ushered in a new era for the city of Lahore. This level of modernization brings contemporary, efficient, environmentally friendly, and secure transportation services to the residents of Lahore.

◆ **Gwadar port**

The Gwadar smart port city is located in Baluchistan province. Gwadar is the gateway linking the Persian Gulf and the Arabian Sea. The city is the southern starting point of the CPEC. In order to promote the cooperation between China and Pakistan, and to ensure that the master plan of Gwadar meets the aim of building a varied, prosperous, dynamic, and

green industrial city will be the development aim in terms of growth and industrial advancement in order to achieve rapid economic growth and generate a new engine for the regional economy (Khetran, M. S, 2014).

#	Project Name
Completed Projects	
1	Development of Port and Free Zone
2	Gwadar Smart Port City Master Plan
3	Pak-China Technical and Vocational Institute at Gwadar
4	Gwadar Eastbay Expressway
Under Construction Projects	
5	New Gwadar International Airport
6	Necessary facilities of fresh water treatment, water supply and distribution
7	Pak-China Friendship Hospital
8	300MW Coal-Fired Power Project at Gwadar
9	1.2 MGD Desalination Plant
10	5 MGD Water Desalination Plant Gwadar
In-Pipeline Projects	
11	Construction of Breakwaters
12	Dredging of berthing areas & channels
13	Fish Landing Jetty and Fishermen Boat-Making Industry on West bay
14	Gwadar Smart Environment Sanitation System and Landfill Project

In the near future, Gwadar will make full use of its geographic location and fishing advantages while

concentrating on its competitive industries. The industrial chain will gradually be expanded and the industrial level will rise in the medium to long term. The duration for this project is 12 months, within which the preparation and submission of final reports should be completed. In terms of transport infrastructure, construction projects planned for the CPEC, such as the new airport and railways, rebeing launched so as to add more gateways to connect the city with the outside (Hussain, F. ,2020).

An urban transport network featuring 5 horizontals and 15 vertical arteries will be constructed so as to enhance connectivity among the city center, sub-centers and functional clusters. This project is important for the social-economic and infrastructure development of Gwadar. As Gwadar is an important sector of CPEC, scientific planning on the basis of the top-level design will help Gwadar to become a benchmark city in CPEC projects. The project will promote the sustainable development of Gwadar, even the entire Pakistan. The project will be a guide to the construction and development of Gwadar (Aijaz, U., & Hassan Daud Butt, D.S.P.G., 2021). The development of the Gwadar port promotes the district economic development and transform Gwadar into a prosperous city to take full advantage of Gwadar’s geographical location as a major gateway to the sea in southwest Pakistan and its port conditions, and leveraging the CPEC to accelerate the construction of transport infrastructure and develop functions for a comprehensive gateway so as to build Gwadar into a national gateway in southwest Pakistan.

Zone	Development Goals	Transportation Needs
Gwadar	The central point of economic growth in the western region of Pakistan	Urban Construction Mineral materials, etc. Industrial Development: Transportation of Raw Materials and Finished Goods
Balochistan Province	The pivotal point for economic advancement. in western Pakistan	Industrial Development: Mineral Resources Outbound Shipping, etc. Daily life: Imports of Daily Necessities
Indus region in Pakistan	The main port of western Pakistan	Transfer of large bulk cargoes such as coal.
Western China	A passageway to the sea of Western China	Import and Export Trade of Consumer Goods
Five Central Asian Countries and Afghanistan	An access point to the maritime routes for the five nations in Central Asia and Afghanistan	Import and Export Trade of the Landlocked Countries
South Asian Region	commercial hub in South Asia, situated near the Middle East.	International transshipment

Source: (Gwadar smart port city master plan, 2017)

The East Bay Expressway in Gwadar Port, Pakistan, is a pivotal component of the CPEC. Situated in Gwadar, Balochistan, this expressway commences from the Pak-China Friendship Avenue within Gwadar Port and extends to connect with the existing Makran Coastal Highway N10. Spanning a total distance of 19.49 kilometers, it is designed to facilitate speeds of up to 100 km/h. The construction of this project is being undertaken by the China Communications Construction Company Limited. The East Bay Expressway project was officially transferred and inaugurated on July 31st, 2022. Its primary objective is to establish essential connectivity between Gwadar Port and its Free Zone with the core national highway network. This seamless linkage is set to enhance the efficiency of logistical transportation for imports, exports, and transit goods. Such connectivity is poised to serve as the cornerstone for the economic development of the Gwadar region.

#### **2.4 Agricultural Collaboration:**

Within the framework of the CPEC, several initiatives are underway to revamp Pakistan's agricultural sector. These endeavors encompass the adoption of modern farming techniques, the prudent management of water resources, and the transfer of cutting-edge technology to elevate both productivity and food security.

In the forthcoming phase, China and Pakistan are committed to harnessing their respective strengths to fortify agricultural endeavors. They are poised to actively engage in agricultural exchanges and cooperation, facilitating the systematic, large-scale, standardized, and intensified progression of the agricultural domain. To catalyze growth in the local agricultural industry effectively, both nations are resolute in encouraging the transition from traditional to contemporary farming practices in areas along the CPEC route (Kamran, A., Syed, N. A., Rizvi, S. A., Ameen, B., & Ali, S. N., 2021). In addition to bolstering physical infrastructure resilience, the forthcoming phase of development will encompass enhancements in water supply, sanitation, and the irrigation sector. Agricultural development represents a pivotal facet of the CPEC, with an emphasis on promoting corporate farming and augmenting Pakistan's agricultural productivity.

The infrastructure projects within CPEC are poised to curtail both transportation time and costs associated with agricultural produce. Furthermore, CPEC fosters a Government-to-Government (G2G) cooperation mechanism for collaborative research and development in the realm of crop varieties. The blueprint for long-term agricultural collaboration under CPEC, originally outlined in 2015, was designed to achieve the following objectives:

a. The establishment of an agricultural demonstration centers and advancements in seed technology and farm mechanization.

b. The understanding of the Chinese expertise and technology to amplify irrigation efficiency and agricultural output, while also fostering innovative technologies and the cultivation of high-value crops. The augmentation of China-Pakistan cooperation in research and development across the food, fisheries, livestock, and agriculture sectors.

c. The establishment of agro-processing zones along the CPEC dedicated to various agricultural commodities, complete with farms, packaging facilities, and storage units.

#### **2.5 Financial Cooperation**

Chinese financial institutions, including the China Development Bank, the Export-Import Bank of China, and Bank of China, as well as Pakistani financial institutions such as Habib Bank have collaborated extensively to provide financing for projects along the China-Pakistan Economic Corridor (CPEC). In 2022, China's central bank has signed a memorandum of cooperation with the State Bank of Pakistan to establish renminbi (RMB) clearing arrangements in Pakistan. The establishment of the RMB clearing arrangement in Pakistan supports the use of RMB by enterprises and financial institutions in both China and Pakistan for cross-border transactions, which promotes bilateral trade liberalization and investment facilitation between the two countries significantly.

#### **2.6 Leveraging CPEC for Blue Growth**

The CPEC offers significant opportunities for Pakistan to improve its blue economy and harness the potential of its coastal resources. Here are some ways

CPEC can contribute to the development of Pakistan's blue economy:

**Maritime Infrastructure Development:** CPEC includes the development of port infrastructure and coastal connectivity, which can enhance Pakistan's capacity for maritime trade and transportation. Upgrading ports, building container terminals, and improving coastal infrastructure will facilitate efficient logistics, attract shipping lines, and promote maritime activities.

**Fisheries and Aquaculture:** CPEC can support the growth of Pakistan's fisheries and aquaculture sectors. Chinese investment and expertise can help modernize fishing practices, promote sustainable aquaculture techniques, and facilitate value addition in seafood processing. This can enhance productivity, export potential, and the overall contribution of the fisheries sector to the blue economy.

**Coastal Tourism Development:** CPEC projects can contribute to the development of coastal tourism in Pakistan. Improved infrastructure, such as resorts, hotels, recreational facilities, and transportation networks, can attract domestic and international tourists to the country's scenic coastal areas. This can generate employment, foreign exchange earnings, and promote sustainable tourism practices.

**Blue Technology and Research Collaboration:** CPEC can facilitate collaboration between Pakistani and Chinese institutions in the field of blue technology and research. This can involve knowledge sharing, joint research projects, and technology transfer in areas such as marine biotechnology, oceanography, marine resource management, and coastal ecosystem conservation. Such collaborations can lead to innovation, capacity building, and sustainable practices in the blue economy.

**Maritime Training and Skill Development:** CPEC offers opportunities for maritime training and skill development programs. Cooperation with Chinese institutions and companies can provide training opportunities for Pakistani professionals in areas like port management, maritime logistics, maritime law, and

marine engineering. This can enhance the capabilities of the local workforce and ensure the availability of skilled personnel for the growing maritime industry through the Gwadar University and vocational center being developed under CPEC.

By leveraging the opportunities provided by CPEC, Pakistan can unlock the potential of its coastal resources, promote sustainable practices, and enhance the contribution of the blue economy to economic growth and development. Close collaboration with Chinese partners, effective policy frameworks, and investment in human capital will be crucial for realizing the benefits of CPEC for Pakistan's blue economy.

## **2.7 Social & Economic Development**

Regarding socio-economic cooperation within the CPEC region, concerted efforts are being made made to implement vocational training programs, support healthcare, agriculture and higher education in Pakistan. Leveraging Pakistan's higher education resources, activities related to design and research and development (R&D) should be carried out, fostering exchanges and collaboration among educational and research institutions. This will facilitate technology transfer and strengthen the construction, operation, and management of transportation and power infrastructure. Expanding medical assistance services to more areas within the CPEC coverage and upgrading existing medical facilities based on actual needs is imperative. Furthermore, this people-to-people connectivity will help consolidate experiences and innovate models for public social welfare cooperation mechanisms in the Gwadar areas between China and Pakistan. This will contribute to the advancement of social welfare cooperation throughout the CPEC region, ultimately garnering greater public support for CPEC initiatives. These Collaborative efforts are also being directed towards comprehensive planning of water resources, encompassing water resource management, river basin planning, and the enhancement of Pakistan's capacity to coordinate the development, conservation, and protection of water resources. This includes initiatives related to flood and drought prevention, as well as disaster relief. The project list under this JWG is :

#	Project Name
Completed Projects	
1	Vaccine storage and transportation equipment
2	Poverty Alleviation Training
3	Emergency relief supplies for enhancing NDMA, disaster preparedness capacity
4	Pakistan Vocational and Technical Education Capacity build-up project
5	Pakistan Vocational Schools equipment Upgrading and Renovation Project
Under Construction Projects	
6	China-Pakistan Joint Agricultural Technology Laboratory
7	Provision of Agricultural equipment and tools
8	Smart Classroom for Higher education
9	Maintenance and renovation for 50 schools in newly merged districts
10	Solar-powered lighting equipment
11	Overseas student scholarship
12	Medical equipment and materials
13	Gwadar hospital project
14	Brightness journey in Pakistan
15	Drinking water equipment
16	Gwadar Desalination Plant
17	Gwadar Vocational and Technical Project
In-Pipeline Projects	
18	China-Pakistan Joint Agricultural demonstrations
19	Bacterial grass (JunCao) Technology Training and promotion project
20	Pakistan Agricultural Vocational Training
21	Provision of teaching equipment for primary and secondary schools
22	Burn Centres
23	China-Pak joint telemedicine network
24	Medical emergency center in Balochistan
25	Rural poverty reduction joint research project
26	Cooperative Project with Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology
27	Punjab-Tianjin University of Technology Project

Pakistan has a lot to gain by utilizing the CPEC for a sustainable growth. In a broader context, the CPEC stands as a testament to the strengths of the BRI

and the concept of regional integration. This corridor has effectively established a global connection to the western regions of Pakistan, areas previously plagued by terrorism, with the added promise of curbing Islamic extremism and fostering improved regional relations. To realize these objectives, it is imperative to foster increased transparency, facilitate information sharing, and promote two-way communication and dialogue on a larger scale. It is evident that Chinese enterprises operating within Pakistan have not only fulfilled their Corporate Social Responsibility (CSR) commitments but have exceeded expectations in their support of social welfare and sustainable development initiatives. An exemplary instance of their commitment was witnessed in 2022 when significant floods struck; Chinese companies and individuals, in a swift response, contributed over US \$90 million in essential products and materials. They generously undertook the reconstruction of bridges and roads ravaged by the floods, aiding victims in rebuilding their homes. In response to the pressing global climate crisis, Chinese businesses have actively embraced the concept of green development and accorded high priority to energy conservation in their operations and production processes.

### 3. FUTURE DIRECTIONS CPEC (2.0):

CPEC remains the most significant cross-border and cross-cultural project undertaken by both countries since 1947. The benefits of CPEC will extend to both China and Pakistan, as well as the people living in the surrounding regions. China is actively expanding its trade relationships with the rest of the world, including the Western regions, and CPEC is poised to play a pivotal role in this endeavor. This initiative offers an opportunity for underdeveloped regions in China to contribute significantly. Simultaneously, Pakistan stands to gain access to new technology, knowledge transfer, and the establishment of industrial zones and parks, all of which will greatly enhance its economy and trade prospects (Hassan, 2018).

Going forward, the expectations from CPEC are high, however, rising terrorist incidents continue to threaten the development agenda, especially at a time when the economic and political situation is

unpredictable. However, despite these issues, China's focus and plans to encourage regional prosperity through investment and technology remain firm and during the recently concluded 14th NPC sessions, China has set new development and investment targets with an improved mechanism through BRI, GDI and the new initiative of Global Security Initiative. The GDP growth target along with other economic development goals set by the Chinese Government promises enough economic activity and stability through the continuity of policies of which BRI is a major component. The fast-changing global environment led by the Chinese of which the recent agreement between Iran and Saudi is a sign of China's growing importance.

Moving ahead, Pakistan must continue to seek technology transfer and capacity support from both China and the global community. This should be done by actively contributing in line with our national circumstances and capabilities. This approach is crucial, especially in light of the ambitious targets set by the Government of Pakistan in the Indicative Generation Capacity Expansion Plan (IGCEP) aimed at achieving greater indigenization of the energy mix. The government's aggressive goals include reaching a renewable energy generation mix of 20% by 2025 and 30% by 2030. To align with international best practices in the realm of renewable energy and the transition towards the approved multi-buyer and multi-seller market reforms under the Pakistan-competitive trading bilateral contract market (CTBCM), it is imperative to lay out future plans. This endeavor necessitates the strengthening of institutions and enhancing their capacity to foster an environment conducive to ease of doing business, grounded in the principles of good governance and seamless cooperation. These steps are essential for achieving a fair and equitable transition towards a green, low-carbon, and prosperous Pakistan.

Looking ahead, Pakistan will prioritize the promotion of complementary policies that foster regional cooperation. Additionally, there will be a strong emphasis on strengthening business-to-business (B2B) connections with relevant trade organizations and creating a conducive environment necessary for high-quality development projects. Collaboration in research

and development will play a pivotal role in facilitating these endeavors. In a global environment characterized by strained deglobalization and rapid growth, there is a substantial demand for energy and transportation, leading to increased investments. The forthcoming phase will encompass a wider array of initiatives, with a strong emphasis on fostering robust industrial cooperation, enhancing the local business environment, and creating substantial growth opportunities for Pakistan. Looking forward, CPEC's focus is expected to shift towards leveraging indigenous energy sources, potentially witnessing a significant uptick in investments in high-tech sectors. This transformation aims to propel the region towards becoming a 'technology-driven economy.' Furthermore, alongside infrastructure and technology, agriculture is emerging as a third frontier within CPEC's development agenda. This agricultural focus primarily revolves around the adoption of technological advancements to address climate-resilient changes, including initiatives such as flood control. Sustainability is also expected to feature prominently on the agenda, aligning with commitments like the Paris Agreement on carbon neutrality and aligning with the Sustainable Development Goals (SDGs). We are mobilizing all available resources for connectivity through an assertive strategy and a strong commitment. Technology will continue to play a pivotal role in showcasing our strengths, and institutions like the Special Investment Facilitation Council (SIFC) will be utilized to craft tailored regulations that promote competition and regional integration. In these challenging times, developing countries in the region must adapt their project management and investment structures to include cross-cultural integration and improve productivity across various sectors.

To take advantage of all this and advance with CPEC 2.0, Pakistan needs to be well-prepared because traditional thinking may not apply and cutting-edge solutions driven by technology may help handle these difficulties and draw in investment flow. Importantly, Pakistan must also speed up the development of SEZs and draw investments in agriculture, the blue economy, and technology, as well as implement targeted reforms based on economic justification rather than political agendas to enhance the business climate through

ongoing regulatory reform and to increase awareness of available investment opportunities, eliminate bottlenecks, dispel misconceptions, and close information gaps while also concentrating on existing industrial zones. Additionally, strengthen the processes for collaboration between the many government agencies, businesses, and other parties involved. We also need to explore the opportunities in the CPEC long-term plan for supporting Pakistan's economic stability for which understanding the preconditions for investment is imperative including a strong rule of law to address major systemic disparities more effectively, as the absence of any of these critical aspects can hinder investment and enhancing the capacity of all stakeholders to provide Ease of doing business based on principles of good governance and absolute harmony are critical.

An active government role will also be vital for closely monitoring potential risks, implementing stimulus packages, and enhancing productivity within the realms of connectivity and trade. It is imperative that our vocational training centers and educational institutions can produce a skilled and capable workforce, well-equipped to lead Pakistan's transformation into the future industrial and transshipment hub of the region—an increasingly prominent role where the significance of CPEC is undeniable. Additionally, Pakistan may utilize its coastal resources for sustainable economic growth by incorporating the blue economy's tenets into CPEC projects.

For all these developments to materialize, it is imperative to establish numerous intergovernmental processes that facilitate coordination and information exchange. This includes the establishment of High-level Political forums dedicated to CPEC development including energy transition, which will enhance coordination and cooperation among various stakeholders, particularly in the realm of data and statistics. These forums are crucial for creating a conducive environment that supports the energy transition. Additionally, there is a need to align economic growth objectives with the green and low-carbon transition agenda, all while considering the unique circumstances of the country. This alignment

necessitates the implementation of domestic policies that enable such a transition. Cooperation among nations should be based on the principle of common goals and shared interests. For developing and emerging economies within BRI like Pakistan, the home-country measures to investments can be especially important, as they can contribute to the economic development of these countries and assist in the realization of the economic and Sustainable Development Goals (Perea and Stephenson 2018, UNESCAP 2020). This supports policymakers in deciding upon focus areas for FDI policy and provides researchers with the tools to advance further research in this area. Despite this, there is insufficient academic and policy analysis on the types of efforts towards creating enabling environment available to investors and to target at particular companies or investment activities. It's essential to note that while attracting foreign investment can have numerous benefits, it is also crucial to strike a balance between economic development and safeguarding national interests. Governments should conduct thorough risk assessments and negotiate investment terms that are mutually beneficial. The measures include:

- a. Home-country investment and Business environment
- b. Home-country regulations
- c. Targeting sectors and market intelligence
- d. Potential risk factors

To attract Chinese investment and forging partnership within the BRI platform under both G2G and B2B mechanism, Pakistan needs to consider implementing the following measures:

**Stable and Predictable Business Environment:** Chinese investors prefer stable and predictable business environments to ensure the safety of their investments. Countries should work to establish transparent and consistent legal and regulatory frameworks. This includes enforcing contracts, protecting intellectual property rights, and ensuring fair treatment of foreign investors.



**Investment Incentives:** Offering investment incentives such as tax breaks, duty exemptions, and reduced bureaucracy for Chinese investors can make the country more attractive. Special economic zones with preferential policies for foreign investors can also be created.

**Infrastructure Development:** Improving infrastructure, such as transportation, energy, and communication networks, enhances the overall investment climate. Modern, climate resilient and efficient infrastructure not only reduces business costs but also signals the government's commitment to development.

**Skilled Workforce:** A skilled and trainable workforce is attractive to investors. Countries should invest in education and training programs to ensure the availability of skilled labor for various industries.

**Focused approach by the FDI Promotion Agencies:** Establishing Foreign Direct Investment (FDI) promotion agencies can help facilitate investment and provide a one-stop-shop for potential Chinese investors, offering information, assistance, and guidance through the investment process. Identify sectors that align with China's investment priorities and focus on promoting investments in those sectors. This may include infrastructure, energy, manufacturing, agriculture, and technology.

**Strengthening Bilateral Investment Treaties:** Signing bilateral investment treaties (BITs) with China can provide legal protection for Chinese investors and encourage greater confidence in investing in the host country.

**Economic and Political Stability:** Ensuring economic and political stability is crucial for attracting long-term investment. Countries should demonstrate their commitment to stability through sound economic policies and political reforms.

**Cultural Understanding and Communication:** Building strong cultural ties and communication channels can foster mutual understanding and trust between the host country and Chinese investors.

**Narrative building by Showcasing Success Stories:** Highlight successful Chinese investments in the country to showcase the potential benefits and success that other investors could achieve.

#### 4. Conclusion

The CPEC project has not only facilitated Pakistan's achievement of regional integration but has also catalyzed economic growth and energized the energy sector, acting as a catalyst for industrial development within the CPEC framework. Looking ahead, the industrial collaboration between the two nations will deepen, presenting a multitude of investment and commercial opportunities within the market. Undoubtedly, challenges such as terrorist threats, evolving government policies, and various adverse conditions will continue to impact business operations. Nevertheless, Chinese enterprises remain steadfast in their commitment to sustainable development, further integration into the regional economy, and the fulfillment of their social responsibilities. To unlock the full potential of the CPEC for high-quality and inclusive growth, it's essential for participating countries to ensure transparency, adhere to sustainable development principles, and adopt Pragmatic planning, financial prudence, effective governance, anti-corruption measures, and the inclusion of local communities in project planning and implementation are vital to ensure the benefits of the great initiative of CPEC through BRI are widely distributed and sustainable in the long term.

The following recommendations are proffered for a comprehensive development strategy under the concept of shared prosperity for a win-win outcome:

(1) China should help developing countries like Pakistan to increase their capabilities of independently making industrial policies according to national conditions and the laws of the market economy in line with their comparative advantages based on resource endowments and industrial foundations.

(2) China should increase technology transfer to developing countries, deepen manufacturing collaboration, and help developing countries improve their manufacturing capabilities.

(3) Digital technologies should be fully harnessed to promote connectivity in international products, supply chains, and value chains.

(4) Collaboration may be promoted towards of advanced energy-saving and carbon emission reduction technologies, encourage green consumption, and promote green and low- carbon ways of production and life.

(5) BRI forums may promote the launching of marketing and promotional campaigns to raise awareness of investment opportunities within the BRI framework, targeting potential investors and key stakeholders and build true narrative.

(6) Joint investment in human capital development, ensuring a skilled and adaptable workforce that meets the needs of BRI projects.

(7) Pakistan should objectively evaluate the roles of domestic industries regional industrial networks and global industrial chains

(8) Pakistan needs to ensure technology-led security mechanisms and create one window facility for CPEC projects. It must work on enabling the environment and promote pragmatic policy measures to attract investment and establish BRI /CPEC-specific facilitation centers to assist foreign investors with administrative procedures, permitting, and any challenges they may face during their investment journey.

(9) Government of Pakistan may involve local communities, and business bodies in project planning and decision-making. Address their concerns and ensure they benefit from project outcomes.

(10) Focus on building local capacity by providing training to Pakistani workers and professionals. Develop skills relevant to project needs.

(11) Ensure that Pakistan's legal framework supports foreign investments and protects the rights of all stakeholders. Address legal and regulatory barriers that may hinder project success.

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# Economic Perspectives on the Belt and Road Initiative

## A speech by BFA Vice Chairman Zhou Xiaochuan at Fudan University<sup>1</sup>

It has been 10 years since the Belt and Road Initiative (BRI) was proposed by Chinese President Xi Jinping. BRI-related issues have attracted serious attention worldwide and quite a few of them warrant economic and financial research and analysis to help improve future design. My discussion of this subject will focus on three areas—The first is the so-called “debt trap” and the misunderstandings caused by such defamation, the implications of which on BRI implementation could not be ignored. The second is the characteristics of China’s investment and financing for BRI and its economic rationale. The third covers several issues that need to be addressed to facilitate future BRI investment and financing and to advance BRI’s progress.

### 1. The “debt trap” narrative and debt restructuring

**First, let’s see how the debt trap narrative affects BRI investment and financing.** It must be noted that this narrative is highly misleading. It’s a widely known fact that some countries and individuals are never hesitant about smearing China and distorting the truth. In various BRI projects, China provides a relatively high share of funding mainly through two major institutions, the China Development Bank (CDB) and the Export-Import Bank of China (EXIM Bank), along with some commercial banks. Most of the funding is provided as conventional loans, mainly

project loans. These project loans have long terms and, in case of insolvency, will be subject to need of restructuring. Other financing methods, such as trade finance, usually will not run into such serious situations.

**We cannot underestimate the negative impacts of the “debt trap” narrative on BRI and its associated investment and financing.** Under this influence, some African developing countries have developed concerns about Chinese projects and funding. There has been a significant decline in the number of new projects financed by CDB and EXIM Bank, although it is possible that many projects have been delayed because of the inability to have in-person meetings and on-site visits due to the COVID-19 pandemic. Furthermore, Chinese creditor institutions are also affected by the debt trap allegation. The inability of certain countries to pay back their debts may result in debt restructuring and reduction. This in turn will affect the balance sheets of creditors, requiring write-offs, provisions, and recapitalization to meet adequacy ratio requirements. Their credit ratings and funding sources will also be affected. Moreover, such negative effects will spill over to these creditors’ future financing capacity and conditions if their losses are not covered by the government. Therefore, when it comes to the debt trap allegation, it is not enough to only assess its political motivation and condemn it; its detrimental impacts ought to be addressed.

**The background and challenges of debt restructuring.** The COVID-19 pandemic has provided a major pretext for debt restructuring. Due to the

<sup>1</sup> This is an excerpt from the keynote speech delivered by Zhou Xiaochuan, Vice Chairman of BFA at the 16th “Big Topics in China” at Fudan University, 7th June 2023.



pandemic, many projects may have experienced delays and failed to achieve expected results. As a result, the international community began to explore debt relief measures, with the G20 taking the lead by introducing the Debt Service Suspension Initiative (DSSI) in 2020. This was followed by the proposal of the Common Framework for Debt Treatment (hereinafter the “G20 Common Framework”). They are both official documents ratified by the G20. However, the pandemic is not the sole culprit for debt issues. Even without the pandemic, some countries would still face debt problems that call for restructuring. In fact, since World War II, debt crises have been a recurring challenge internationally. Examples include the Tequila Crisis in Mexico, the Brady Plan in the 1990s, the Argentine crisis, as well as more recent cases of debt restructuring in Greece, Cyprus, and several other countries.

In terms of debt restructuring, countries that have attracted more attention include Zambia, Chad, and Ethiopia in Africa, Laos and Sri Lanka in Asia, and Latin American countries such as Ecuador. Some of these countries have already initiated debt restructuring processes, but the number of countries formally applying for debt restructuring under the G20 Common Framework remains very small. Therefore, the practicality of the G20 Common Framework is limited. Some scholars believe that China certainly would support the G20 Common Framework as a multilateral principle in view of China’s advocacy of multilateralism. However, there are still many unresolved issues in implementing the framework. The G20 Common Framework targets heavily indebted low-income countries and not yet covered middle-income countries. Should debt restructuring also apply to middle-income countries if they experience a similar situation? It may be necessary, as evidenced by the example of Sri Lanka’s request for debt restructuring. In fact, during the European sovereign debt crisis, Greece and Cyprus had been bailed out. The debt distress Argentina has been struggling with is another example.

**The challenges of debt restructuring include whether to divide the debt into different layers for treatment, how to define the attributes of each**

**layer, and which organizations should be grouped together in the same layer.** Numerous issues concerning international debt restructuring are worth studying and may attract many debates. Situations have been compounded by certain organizations and individuals being politically motivated to defame China, leading to contentious debates and disagreements among various parties over the best approach to debt restructuring and giving rise to issues that warrant further research. However, the most challenging issues can be summarized as follows: Should creditors be divided into layers and treated differently? How should we define the attributes of each layer? Which entities should be grouped together in the same layer? “Collective action, fair burden-sharing” is the principle laid down by G20 for debt restructuring, but implementing this principle necessitates coordination and concerted action across different layers and fair treatment within each layer.

From an institutional perspective, international creditors could be roughly classified into three layers. The first layer consists of multilateral creditors, including the World Bank and regional and sub-regional development banks such as the Inter-American Development Bank, European Bank for Reconstruction and Development, African Development Bank, Asian Development Bank, Asian Infrastructure Investment Bank, as well as smaller banks like the West African Development Bank, Eastern and Southern African Trade and Development Bank, and Caribbean Development Bank. The second layer comprises bilateral official creditors, mainly government loan providers. The third layer includes commercial creditors, such as a multitude of small and diverse private institutions. Recent years have seen a significant shift in the third layer of international financing, with a decline in loans and an increase in bonds. Bond issuance has become more transparent, involving a wider range of creditors, mainly private institutions, which makes debt resolution more complicated. Therefore, the third layer can be further divided into two sub-layers: loans provided by private institutions and bonds issued through market-based mechanisms.

Within this three-layer hierarchy, it is crucial to

accurately identify which creditors should be placed into which layer and which creditors should be grouped together into the same layer, and ensure equal creditor rights within each layer. If debt restructuring is necessary, it is important to handle the process in a participatory and fair approach at each level. The questions above must be properly addressed to have a meaningful discussion about which layer Chinese creditors ought to be put into and how the Chinese debt be treated during restructuring.

**Experiences and lessons of debt restructuring within a nation can be learned for international debt restructuring.**

Despite limited public information and insufficient debate on international debt restructurings, a closer examination reveals their many similarities with domestic cases of debt restructuring, bankruptcy, and reorganization. Therefore, it is possible to study domestic experiences for international debt treatment. In case of a domestic delinquent debt, **the first step** is to assess the severity of the problem and determine whether assistance is needed. If assistance is deemed necessary, moral hazards will be factored in. If assistance is not provided, the debtor will enter bankruptcy proceedings, which might involve reorganization. After the declaration of bankruptcy, there will be issues such as liquidating assets and determining the order of priority for repayment. Typically, creditors are prioritized over equity holders, and creditors' claims may be classified into different levels, such as senior debt, ordinary debt, subordinated debt, or other specific forms of debt. **The second step** is to find out how the hierarchy of creditors is defined. Some hierarchies are determined by the law, while others are established through contractual agreements. In March of this year when Credit Suisse experienced debt problems, the AT1 bonds were thrust into the spotlight. The AT1 bonds, which were contingent convertible (CoCo) bonds, were originally supposed to be converted into common shares and carry corresponding risks. However, they were fully written down, sparking a huge outcry in the market. Switzerland argued that the bond contract not only included provisions for conversion to equity in emergency conditions but also allowed for write-downs. Therefore, it is crucial to establish a clear

understanding of the ranking of different types of debt in the restructuring process of commercial debt. **The third step** is to establish a clear principle and process for debt restructuring. This involves determining the key criteria for restructuring decisions, identifying negotiable elements and the lead creditor, and assessing the sustainability of the existing assets. Moreover, debt restructuring often requires the infusion of new funds, and it is crucial to specify the source and arrangement of these funds. Such knowledge and methods used in treating domestic debt can also be applied to address international debt issues.

**First, an analysis of debt sustainability is essential** for assessing the necessity of debt restructuring. It involves examining the magnitude of a debtor country's debt problems and the likelihood of default. It also involves what techniques, parameters, and evaluation frameworks will be used and who has the final say. In other words, who has the authority to decide in which country the debt will be restructured and in what scope? Should such authority be given to the creditor or to the future provider of financial assistance? Another question is who can assume the role of providing such assistance. Currently, this role is mainly assumed by the International Monetary Fund (IMF).

The IMF and the World Bank have expressed intention to provide financial assistance to bail these countries out of their debt crises, and hence argue that it is justifiable for them to provide most of the parameters and technical analysis. At the same time, however, creditors or creditors' committees may also demand a sufficient level of decision-making authority. China is one of the largest lenders or even the largest creditor. Therefore, it is not appropriate if China does not have enough say in debt sustainability analysis. Furthermore, debt restructuring also involves debt transparency, the sharing of information regarding sustainability analysis, and other related matters.

**Second, a comparability analysis of the debt is needed.** In a debt restructuring, the nature of the debt is often a subject of debate. Some debts may not have been clearly defined in legal documents or contracts, thus resulting in the issue of debt comparability.

We believe that the classification of a debt as either commercial or governmental is not a simple binary choice but rather lies on a continuum between 0 and 1. The specific position of the debt can be represented and analyzed using a two-dimensional coordinate system. On one hand, at the debt axis, there are various types of debt. Some are sovereign loans issued by governments, some are backed by sovereign guarantees, and others are secured by quasi-sovereign guarantees, such as by important national institutions or using resources as collaterals. For example, debt repayment may be tied to the revenue generated from oil or natural gas production. On the other hand, at the creditor axis, creditors also vary by nature. For instance, some countries initially had a mistaken perception that Industrial and Commercial Bank of China (ICBC), Agricultural Bank of China (ABC), Bank of China (BOC), and China Construction Bank (CCB) are all state-owned banks, so the debts owed to them are sovereign by nature. However, China has consistently clarified that these banks are joint-stock commercial banks and their loans are commercial in nature, and that CDB as a development financial institution is not a government lending institution and therefore does not constitute a sovereign creditor. Logically, these banks should not be included in bilateral sovereign debt restructuring. The only bank defined by China as a policy bank is EXIM Bank—a government export credit institution as stated on its external documents. This resulted in it being classified as a sovereign lending institution. However, most of restructuring cases involving loans from EXIM Bank are project loans rather than typical export credits. The latter primarily serve to satisfy the working capital needs of exporters, facilitating the flow of funds between production, delivery, and receipt of payment.

**Third, principles and mechanisms for debt restructuring need zooming in.** The G20's principle for debt restructuring is "collective action and fair burden-sharing." While this principle sounds noble, the World Bank and regional/sub-regional development banks insist on not participating in debt haircut. They argue that they have provided substantial concessional funding to developing countries and that debt reduction would erode their future financing capacity. It must be noted here that most of multilateral development banks

now primarily rely on issuing bonds in the international market for financing, which contradicts our previous belief that most of them are funded by governments to provide concessional loans to the developing world. To reduce financing costs, they must maintain good credit ratings, a situation that is similarly faced by CDB and EXIM Bank domestically. If they have a AAA rating, their financing costs will be lower, but if the rating is downgraded, their financing costs will rise. If they participate in debt restructuring and reduce debt obligations, they will have to write off losses, which will surely lead to a downgrade in their credit rating and weaken their ability to access low-cost financing in the future.

When the debt situation of developing and middle-income countries is examined, out of the three layers of creditors, that of the bilateral sovereign debt does not constitute a significant share. As a matter of fact, the creditors of these countries can be characterized as "concentration at both ends", with one end being multilateral development institutions and the other being private institutions. This situation will spell trouble for the ranking of creditors. Theoretically, government-backed institutions that serve public interest should assume a larger responsibility in debt reduction, followed by bilateral sovereign creditors, and finally private creditors. However, multilateral development institutions have said that they would not participate in debt reduction, and coordination among highly diverse private creditors is a daunting challenge. As a result, bilateral sovereign creditors could end up bearing the brunt of debt reduction, with China taking the biggest share.

Moreover, some individuals are politically motivated to discredit China and BRI. Their rhetoric has evolved into an argument that everything else can be treated well if China offers debt relief first. Meanwhile, the World Bank has expressed willingness to provide funding to debt-ridden countries to address poverty and challenges caused by the COVID-19 pandemic, but the funding provided by multilateral institutions must not be used to repay Chinese loans. Therefore, China must first agree to debt reduction. This has focused the spotlight on China and made the so-called Chinese

debt trap attract more attention and debt relief more complicated.

China is a staunch supporter of multilateralism, and the G20 Common Framework is a consensus reached among G20 members. However, having a debt restructuring framework in place does not guarantee smooth sailing. There are practical difficulties in implementing the debt restructuring process, and further research, fine-tuning, and attention are needed to address these issues.

**First, it is necessary to involve creditors in debt assessment.** China has consistently advocated for the active involvement of creditors in evaluating debt sustainability, and this necessity is also validated by some events that have taken place in this process. During the COVID-19 pandemic, primary commodities experienced a price decline in the international market, so some analysts argued that those debtor countries which heavily relied on the export of these commodities to pay back their debts would find their debts unsustainable and would be unable to repay them. However, some creditors adopted a wait-and-see approach in anticipation of price changes. After the outbreak of the Russia-Ukraine conflict, prices of certain primary commodities rebounded. As a result, moderate support, such as short-term credit financing, was enough to bail out the countries that had been previously considered in need of significant debt restructuring or reduction.

**Second, the costs of debt restructuring for creditors need to be evaluated.** A key factor in debt sustainability analysis is determining the debt service gap, which has a direct bearing on the costs of debt reduction for creditors. This includes evaluating the costs that creditors will bear under a debt restructuring scenario and estimating the present value of their net losses. Some countries, including China, favor extending loan terms, reducing interest rates, and prolonging grace periods as a solution, rather than cutting the total amount of money owed. This means that they support a reprofiling of the debt rather than a simple haircut. The IMF argues that such measures do not mean creditors can avoid losses; in reality, they will still incur losses and certain measures may result in

equivalent costs for creditors.

In other words, even if creditors in the same layer have differing opinions, with some supporting debt reprofiling and others favoring a haircut, their costs may be close or even equivalent. However, without a unified analytical framework, it becomes impossible to determine who contributes more and who contributes less. It may even lead to a blame game or hinder any possibility of reaching an agreement, thus bringing debt restructuring to a deadlock. A useful assessment technique is the net present value method, which can work out the debt reduction costs for creditors by converting future post-restructuring benefits into their net present value. In conclusion, regardless of the method, the debt reduction costs borne by the same category of creditors should be comparable and fair.

**Third, it is crucial to assess the impact of restructuring on the balance of capital flows of debtor countries.** Multilateral institutions emphasize that their support to developing countries is manifested by their provision of new funds. We have also consistently emphasized the importance of new funding for the debtor country's balance of payments and capital flows. For many developing and middle-income countries struggling with debt problems, access to new funds will enhance their ability to repay old loans. However, to sustain their domestic economic growth, they also need a continuous inflow of capital. If debtor countries, without careful consideration, opt for debt restructuring under the G20 Common Framework and proceed with this process, they may succeed in securing a debt reduction, but their reputation will be tarnished and their chances of bond issuance in the international market would be significantly diminished. Some economists recommend that major international rating agencies do not downgrade the ratings of countries undergoing debt restructuring, as this will impede their future access to financing, but rating agencies will not act on this suggestion. Furthermore, each creditor institution has its own internal rating, accounting, auditing, and asset-liability analysis teams. Generally, when assets are written down as a result of debt restructuring, financial institutions will surely give an internal downgrade to the debtor country's rating

and will substantially reduce its lending to that country in the future. This is inevitable and cannot be prevented simply by making some appeals. Therefore, debtor countries are advised to be serious and prudent about their choice and make a comprehensive assessment.

**Fourth, it is critical to resolve disagreements and disputes among creditors regarding their hierarchical treatment.** As mentioned earlier, a hierarchy will be established for creditors, but many disputes will arise along the way, and it will be practically difficult to reach consensus over which creditors should be grouped together within the same layer.

If bilateral official creditors were grouped into the same layer, China would first dispute that ICBC, ABC, BOC, and CCB, together with CDB, should not be included. Only some debts owed to EXIM Bank can be treated in this manner. Even in the case of EXIM Bank, a significant proportion of its project loans are not government-mandated, and some of the highly solvent projects should not be included in the restructuring. Therefore, it is imperative to clarify who should be grouped with who. On this issue, it is inevitable to have disagreements in the beginning. From China's domestic perspective, this issue may involve multiple departments, primarily the financial, fiscal, development and reform, and commerce departments. It will also involve environmental agencies if the debt is intended to promote green development and mitigate climate change. Therefore, internal research, discussion, and coordination are essential.

In this situation, some argue that multilateral development institutions should not evade their responsibility and should join other creditors in debt reduction in proportion to their shares. Otherwise, the "big chunk" of the debt will remain untouched. Others believe that private creditors, alongside bilateral sovereign creditors, should also bear the restructuring costs on a pro rata basis. This means that, if necessary, private creditors should also have their share of the reduction. However, multilateral development banks have expressed their stance, while private creditors are widely scattered and are subject to different laws, which makes coordination a herculean challenge. This

implies that without a valid legal or contractual basis, creditors will find it hard to develop consensus on how they should be ranked.

The World Bank has realized that if all creditors talk past each other, it will be impossible to reach an agreement. Therefore, it has proposed a new solution. The World Bank is prepared to provide new funding on concessional terms as an alternative to its relief obligations and costs from a possible debt restructuring. This will raise the issue of cost comparability. If the World Bank indeed implemented this solution, it is a kind of joint action, deserving applause. However, multilateral institutions may also give unequal treatment. Given the current governance situation of multilateral institutions and their track record, such concerns are not entirely unfounded.

Next, bilateral sovereign debt arrangements can be studied, which are used by western countries less and less frequently. The small amount of bilateral sovereign debts seems to be a special privilege accorded by some European countries to their former colonies, where they used to rule and may still wield some influence today. However, China has never had any colony, so even in the case of sovereign debt, its situation is different from that of Western countries. In the past, the Paris Club served as the coordinating mechanism for official creditors internationally. It has been years since China was invited to attend Paris Club meetings, but China is not a member of the club. In 2016, when China chaired the G20, some Western countries called for China to join the Paris Club but divided domestic opinions stopped further consideration of China's membership. The Paris Club is still deliberating and formulating restructuring frameworks and measures. Without substantive engagement, the initial debt restructuring proposal may be unfavorable for China. Therefore, it is necessary for China to seriously consider its role in the future restructuring of international sovereign debt, particularly in the design and formulation of international multilateral rules.

Moreover, it's no easy task to handle the relationship with commercial lenders and bondholders. You can hardly convince them by simply saying that

creditors will bear comparable costs. As a matter of fact, there's little you can do if commercial creditors are not cooperative, as exemplified by what vulture funds did to Argentina during the latter's debt crisis. As a heavily indebted country, Argentina had repeatedly sought substantial financial assistance from the IMF. At the same time, it also wanted to issue bonds in the international market and succeeded in 2016, after it had admitted the ransom demanded by vulture funds. After Argentina was mired in debt problems, vulture funds bought many of its bonds at a huge discount and exploited the provision in the bond contract that granted jurisdiction to US courts. They threatened Argentina with legal action in US courts unless compensation was provided. Argentina then decided to yield to their demands and paid the ransom to secure the successful issuance of USD15 billion in sovereign bonds in the international market. This example illustrates that dealing with private creditors is not a walk in the park. It is not something that several ministers can decide at a G20 meeting. Private creditors will argue that they are under no obligation to comply. Furthermore, many debt restructurings are masterminded or influenced by international organizations from the private sector, as particularly represented by the International Institute of Finance (IIF).

The above-mentioned issues can help us understand why little progress has been made over the years since the G20 Common Framework was proposed, as there are still significant disagreements and disputes among creditors regarding debt treatment. Recently, multilateral institutions such as the IMF and World Bank have presented a range of suggestions and concepts, including automatic debt relief, enhancing the urgency of debt resolution, and establishing clear procedures and timelines for debt restructuring. However, a definitive consensus has yet to be reached. There are still quite a few controversial issues that necessitate further research and discussion.

## 2. The characteristics of Chinese BRI investment and financing

To understand the appropriate position of Chinese creditors in the hierarchy, it is necessary to examine the characteristics and economic logic of China's BRI

investment and financing. There are two issues that warrant further analysis.

**The first issue is why China has such massive amounts of investment and financing in BRI countries.** Some statistics show that CDB and EXIM Bank have each provided approximately USD 300 billion in financing for BRI. When combined with private sector investment and financing, China's BRI investment and financing may potentially reach USD 2 to 3 trillion. These figures may not be accurate, and the criteria used may vary, but they point to the huge scale of China's BRI investment and financing. This has raised questions across the West—Why is China so generous in view of its relatively low per capita GDP and limited fiscal resources? Is the government the main driving force behind this?

In fact, China's investment and financing has been growing along the Silk Road since 2000 and at a faster pace in BRI countries since the initiative was advanced by President Xi Jinping in 2013. This is mainly because China has developed economic strengths in foreign investment and financing, which allows it to leverage its comparative advantages in BRI. These comparative advantages are sometimes painted as overcapacities, but an overcapacity is correlated with a comparative advantage—A manufacturing capacity with a comparative advantage will be able to produce more and export, but should it be considered excessive if its supply exceeds domestic demand? The answer is that you can either perceive it as excessive from the perspective of the domestic market or see it as a positive development from the perspective of the global market, or you can exploit it to slander China.

**First, China has an advantageous capacity in the field of infrastructure construction.** This important achievement can be traced back to 1998, when the State Council added tens of billions of RMB to strengthen infrastructure construction in response to the impacts of the Asian financial crisis. The second wave of infrastructure investment happened in the wake of the 2008 financial crisis, when China unveiled a RMB 4 trillion economic stimulus package that included many infrastructure projects. The infrastructure boom in China

has led to substantial improvements in its capabilities in design, construction, operation, maintenance, and equipment manufacturing. Today, China possesses advanced capabilities in the building of infrastructure such as highways, railways, ports, airports, communication networks, and power grids. China also excels as a low-cost, competitive manufacturer of complete sets of equipment such as power generation systems. Many private enterprises also possess similar expertise and advantages in the sectors of infrastructure construction and manufacturing. Such advantages are not only felt in the broader sector of infrastructure construction, but have also extended to urbanization-related fields such as public facilities, commercial and residential properties. As investment opportunities decrease in China, companies have started to explore opportunities overseas. It is true that there are risks in foreign markets, such as unfamiliarity with local laws, regulations, and languages, but this is a learning journey for Chinese companies. Many of them may eventually realize that expanding their business operations into foreign markets offers more favorable and profitable prospects than in the domestic market. In summary, most companies venturing abroad are motivated by promising markets and financial gains.

**Second, another significant feature of the Chinese economy is its high savings rate.** While a high savings rate has its pros and cons, it does offer benefits that are as important as China's comparative advantages in engineering, construction, and equipment manufacturing in view of investment and financing overseas. In 2022, China's savings rate was around 45% of its GDP, and this phenomenon seems unlikely to change in the foreseeable future. There were a few years that saw a decline in China's national savings rate, which neared 43%. However, it slightly increased again after the outbreak of the COVID-19 pandemic and has remained within the range of 40%-50%. China's savings rate is among the highest in the world and that translates into a massive amount of funds given China's large population. When seeking outlets, these funds will compare the prospects and yields of foreign and domestic markets. One concrete manifestation of this is that China's policy banks, such as CDB and EXIM Bank, can issue considerable

amounts of bonds domestically to provide funding for BRI projects. This would be impossible in a country with a low savings rate, even if they have policy banks like CDB and EXIM Bank.

Many Chinese companies, including central state-owned enterprises (SOEs), local SOEs, and private enterprises, are also motivated by lucrative prospects to expand into foreign markets. It is not fair to say that they are all required or organized by the government to do so. However, some of them may not possess ample cash flows and therefore need to seek funding from outside after they have secured profitable projects abroad that require financing. For instance, construction companies such as CSCEC, CCECC and CRCC are globally competitive players in the design and construction of bridges and railways, but they lack enough financial resources and will have to rely on financial institutions for funding. Moreover, they lack knowledge of foreign financial institutions and may not be necessarily able to secure funding from the international market, so they will naturally turn to and try to convince domestic counterparts to provide such funding, including CDB and EXIM Bank, as well as ICBC, ABC, BOC and CCB. Owing to the easiness to raise funds by issuing bonds domestically and their responsibility to globalize business operations, CDB and EXIM Bank usually show interests in these projects. However, financial institutions are quite aware that these construction companies generate revenues during the construction stage. Most materials and equipment are sourced domestically. Once the project is completed or even before it is completed, they can recoup their costs and make profits. If there is a default risk after project operation, such risk is mainly borne by financial institutions themselves. In this vein, financial institutions charge a certain risk premium, which may be higher for certain countries. When the risk premium reaches a certain level, the borrowing country may complain that the financing cost is too high, and for some countries, they may look for China, a respected brother, to consider their poverty and provide more favorable terms. In response, financial institutions may propose that the loan be directly given to the borrowing country's government, or be backed by a government or quasi-government guarantee, or be

secured by future income from resources. This is why some government guarantees have been provided. For some developing countries without a robust financial governance, they may accept this proposal because now they can secure cheaper loans from Chinese banks, which is a political achievement that will please their electorate. Consequently, even some debts that did not necessarily require sovereign guarantees from the borrowing country's government may end up with such guarantees. However, should loans offered this way be classified as bilateral government loans or sovereign debts, and therefore be restructured in the corresponding layer? The answer is debatable.

If an event associated with the preparation, groundbreaking, and construction of such projects coincides with a visit by a high-level leader from either country, a signing ceremony may be held to announce agreements that have been reached between the two countries to show their rapport and mutual support. On such an occasion, relevant departments will gather a list of projects or agreements available for signing. A few of them may be charitable projects from the China International Development Cooperation Agency (CIDCA), such as government buildings, sports facilities, hospitals, and the like. As for specific corporate projects, the relevant government departments may not necessarily have the prior knowledge of their backgrounds and details, and the signatories of project agreements are often companies or banks, rather than government agencies. For such projects, can we deem them as bilateral government cooperation projects? In fact, these projects signed in the name of companies at the ceremony are more of a symbol of friendship, cooperation, and mutual support between the two countries. They neither constitute government projects nor represent government decisions. A thorough statistical analysis would reveal that most of these projects witnessed by national leaders are not decided by the government. However, when certain individual in the West attempt to tarnish China's reputation, they will seize upon the fact that leaders from both sides were present and are adamant that they are government projects, whose debts are bilateral sovereign debts. Therefore, when debt restructuring becomes necessary, they will argue that China should move first to take

haircut and bear associated costs.

If we examine the structure of projects funded by such debt, one category of projects are infrastructure projects involving Chinese advantageous capacities, such as highways, railways, airports, power plants, and other similar projects. Another category of projects are commonly seen processing, mining, urban development, industrial park construction, and local market expansion projects. The latter category consists of a considerable number of projects that are widely distributed and involve investment and financing at a scale that is comparable to that of infrastructure projects. However, the number of projects under this category that are truly decided by the government or financed through government arrangements is very low.

In summary, Chinese BRI investment and financing activities are highly diverse in terms of providers, motivations, driving forces, and investment terms. Their distribution can be effectively represented through statistical diagrams from different perspectives. The available information reveals that most of financing for infrastructure and industrial projects are market-driven, decided by corporates themselves and funded on commercial terms. When certain countries encounter debts crises, the creditors must be properly ranked and categorized based on the actual attributes of projects and their financing arrangements. No attempts should be made to smear the creditors.

**The second issue is the nature of financing and debt reduction by development and policy banks.**

Chinese policy banks were established in the wake of the 14th National Congress of the Communist Party of China (CPC) and the Third Plenary Session of the 14th CPC Central Committee. Their establishment was originally intended to separate policy banks from commercial ones. In 1994, CDB and EXIM Bank were created as policy banks, followed by the establishment of the Agricultural Development Bank of China (ADBC) in response to demands by the agricultural sector. In 2001, China established Sinosure, which is perceived as a provider of export credit insurance. After China successfully completed the ownership reform of ICBC, BOC and CCB in 2007, some argued that the mission of policy banks had been accomplished and



that CDB and EXIM Bank ought to be transformed into commercial banks. However, this argument was not prevalent, and CDB and EXIM Bank were retained. The initial definition of development banks at that time clearly stated that they should be financially independent and not reliant on subsidies. Policy banks should also comply with financial and audit requirements that applied to commercial banks, normally without any exception. They were also required to have sufficient capital (with the capital adequacy ratio being the major constraint on the expansion and soundness of their balance sheets). Therefore, CDB and EXIM Bank were both recapitalized later. In 2015, the Chinese government officially designated CDB as a development bank, and EXIM Bank and ADB still as policy banks. In the event of an international restructuring involving government creditors, there will be a divergence in understanding between China and foreign countries. Initially, foreign countries grouped CDB and EXIM Bank together, considering them both as government credit institutions. After repeated explanations, CDB was separated and project financing by CDB has since been not considered government debt.

Recently, actions have been taken domestically to classify the loans of CDB and EXIM Bank into policy loans and commercial loans. In theory, policy loans should have the last-resort support of the government that is expected to bear the ultimate losses in case of a debt default, while commercial loans are not backed by the government. However, it must be noted that the government may not be financially strong enough to provide such support. If this classification is made retrospectively, there will be intense competition—between the government which seeks to have a lower share of policy loans and the financial institution which wants to expand the share. It is conceivable that if a loan officer and a loan review mechanism approved loans that have caused losses, they are very likely to evade responsibility by insisting that they were following the instructions or intentions of the government and thus classifying such loans as policy ones. As a result, CDB and EXIM Bank are prone to exaggeration if they have the autonomy to make this classification, whereas a third party tends to minimize policy loans in view of

the government as the ultimate loss sufferer and will demand written justification from CDB and EXIM Bank. Therefore, it must be clarified whether the government will reimburse the financial institution for losses resulting from loans that are deemed as policy-based and are provided on instructions from the government. If the government clearly defines its role as the ultimate risk taker in this case, then write-offs can be made without affecting the performance measurement, credit rating, and capital of the bank. Otherwise, the concept of policy loans would be greatly misleading. During the reform of commercial banks in the past, similar issues were also encountered. For example, one bank incurred losses because they had been assigned special projects before the reform. During financial restructuring, the bank needed to prove whether those projects were required by the government. Finally, the bank provided telephone records, IOUs, and other materials, but without any official documents. In this case, the loans involved were finally accepted as policy-based given their small amount. Therefore, it must be realized that retrospective classification is a competitive game. A good solution would be to separate policy banks from commercial ones in advance to prevent blame game, moral hazards, and post-event competition. This solution can also be easily understood by foreign countries. Chinese financial institutions may also model themselves on international peers by establishing a separate policy or commercial arm. In addition, it is also necessary to promote international and Chinese practices in the field of development finance.

Similar evolutions can also be observed from international trends. First, multilateral development institutions such as the World Bank initially relied heavily on public appropriations from member countries (particularly developed countries). Later they have increasingly leveraged their high credit ratings to raise capital in the market, and their main funding sources are no longer the governments of member states, whose share of liabilities is shrinking continuously. A similar story has also happened to CDB, and such institutions highly value their credit ratings. Second, multilateral development banks have made an internal division of responsibilities, specifying which entity

deals with concessional finance and which entity functions as a private-sector arm (still committed to promoting development). They differentiate between entities engaged in concessional assistance and those involved in private-sector business (which still serves developmental objectives). For example, as a member of the World Bank Group, the International Finance Corporation (IFC) provides funding for the private sector and invests in for-profit and commercial projects. Similar entities have also been created within banks such as the Inter-American Development Bank and European Bank for Reconstruction and Development. At similar Chinese institutions like EXIM Bank, these commercial projects are simply treated by separate management and accounting practices, rather than managed by a separate entity. Domestic regulatory, financial, and reform and development departments may understand their differences, but outsiders may find it confusing because they belong to the same institution. This will make them an easy target.

In conclusion, as mentioned earlier, efforts have been made to separate the project loans of CDB from the government business. However, in the case of EXIM Bank, which is nominally a government-backed export credit institution, only a portion of its project loans fall under the government category, but they are still not treated separately. This will lead to controversy and disputes when EXIM Bank is involved in a debt restructuring or reduction. In a word, it is critical to recognize that the weaknesses in policy design in the past may cause certain consequences in the future. It will be very hard to find a satisfactory solution by solely focusing on the present situation and disregarding the past.

### 3. Several issues that merit attention and research in the future

**The first is the ratio of debt financing to equity financing in developing countries.** Some developing countries have problematic fiscal governance, as they have issued excessive sovereign bonds, provided too many sovereign guarantees, or made too many quasi-sovereign commitments, resulting in high leverage and debt levels. These countries are advised to constantly improve their fiscal governance and

refrain from creating excessive moral hazards. China also experienced similar problems in its early stage of development, when it was difficult to obtain enough equity capital from domestic sources. It is common for an entity to be burdened with higher debt when it has less equity capital. In this situation, equity financing should be encouraged. From the outset, China started to encourage foreign investment and the establishment of Sino-foreign joint ventures, Sino-foreign cooperative enterprises, and wholly foreign-owned enterprises to facilitate the entry of equity capital.

Another benefit of raising equity financing is that it can reduce arbitrary government interventions and other irregular practices throughout the entire construction and financing process. For example, when a railway is to be built in a country, the project may enjoy smooth progress in nearly all areas, including design, planning, and budgeting, but problems may arise during the construction stage. During land acquisition, for example, local residents may demand extra compensation, which may be backed by local officials on the pretext that they are their electorate. This would push up costs and impair solvency. In terms of labor, local officials may insist on hiring more local workers, which could undermine project efficiency, increase costs, and result in a protracted project if these workers lack the necessary skills or face language barriers. Furthermore, after the railway is completed, ticket pricing may become a more sensitive issue. When faced with populist pressure, the local pricing authority may end up setting a distorted and low price. This can turn a project that was originally well-justified with reasonable returns into a low-return or even chronically loss-making project. If equity investment is involved, usually there are applicable regulations and laws that provide a certain degree of decision-making autonomy and operational conditions for foreign investors and external shareholders. This includes pricing rights, exemption from arbitrary demands, and protection against haphazard changes. These are some of the benefits we can derive from equity investment.

Equity investment can be further divided into pre-event and post-event models. Under the pre-event

model, a certain percentage of equity capital is decided upon from the outset to achieve a reasonable equity-debt ratio. Under the post-event model, the project first raises capital through debt instruments and later opts for a debt/equity swap to address its fragile solvency and potential default risk when the project remains financially viable. This arrangement involves transferring a certain degree of ownership and management rights to the creditor, thus resulting in the formation of a foreign-invested or joint-venture company. The profitability of an infrastructure project highly relies on the level of development in its surrounding areas. For instance, if a seaport is financed by debt for its construction and later becomes insolvent due to inefficient cost management, building an export processing zone (EPZ) in the vicinity can enhance the port's utilization rate and solvency. Nonetheless, this will require additional funding, but the dilemma is who will join the port owner to build this EPZ when the previous debt is not cleared. In this case, having a debt/equity swap plan acceptable to both parties will help convert part of the debt into a direct equity investment. The equity investor will then consider improving management and securing additional financing to revitalize the project. However, in view of the defamatory narrative against China, such debt/equity swaps are often portrayed as a premeditated "debt trap" designed to lure the borrower into an insolvent situation where they will be forced to transfer control. In response, some debt-to-equity conversions have been designed to be interim with time limits, with an emphasis that the project will only be owned and managed within the specified period and will be redeemed after the end of that period. Therefore, such arrangements should not be viewed and criticized through the lens of western colonialism.

A similar approach is the BOT (build-operate-transfer) model, where the contractor operates the project for a set period of time (usually several decades) to ensure efficiency and cost control, and then transfers control back at the end of the period. This model is roughly similar to the above-mentioned arrangement and is therefore less vulnerable to defamation.

#### **The second is about multilateral mechanisms**

**for debt treatment.** China is in strong support of multilateralism, but for the debt-related matters, one important question needs to be raised is whether the multilateral rules for debt treatment are mature enough. The answer is that the reality is far from maturity. Actual cases tell us that circumstances are continually changing, and rules are constantly evolving, that there are still many unresolved issues in the operation of multilateral debt treatment mechanisms, and that these mechanisms remain a hot topic of debate, with stakeholders voicing varied criticisms, suggestions, and opinions. China needs to proactively participate in the deliberation and construction of rules in line with the spirit of multilateralism, so it will not become passive later. Of course, this requires deeper research on the subject.

**The third is the expanded use of bonds.** It is advisable for China to adapt to new changes in global financing. Instead of providing loans through banking institutions, China may capitalize on bond markets and bond subscriptions, while also expanding its involvement in regional and sub-regional development banks for investment and financing. If a project has good prospects, it can be financed by Chinese financial institutions, multilateral institutions, or by the issuance of project bonds or panda bonds. In terms of project construction, China possesses a comparative advantage that enables it to compete on lower cost and better quality. Therefore, it is highly likely that the design, construction, equipment, and other contracts associated with the project will be awarded to Chinese companies. Multilateral mechanisms are not simply about complying with rules; they also provide opportunities to use multilateral rules. In this regard, further research, discussion, and progress are still needed.

**The fourth is that it is unfair to paint resource-backed loans as a bad thing.** In fact, the uneven distribution of natural resources, such as minerals and water resources, is a global reality. It is normal and necessary for regions with abundant resources to engage in trade with regions that have fewer resources. China, with its high population density, exports a significant amount of rare earth resources, but it also

imports many other resources. Therefore, China will naturally invest heavily in certain resource industries across the globe. This is a normal phenomenon in the process of globalization, and the development and utilization of resources should not be deemed as something negative.

**The last is green and climate investment and financing.** As a megatrend, one area that warrants close attention by investors and financiers in the future is investment and financing intended for green development and climate change mitigation. With extensive expertise in this field, China has become a global leader in equipment manufacturing and construction in sectors such as solar power, wind power, and even nuclear power. It has also made considerable strides in the development of electric vehicles and electrochemical energy storage. In 2021, President Xi Jinping pledged that “China will step up support for other developing countries in developing green and low-carbon energy, and will not build new coal-fired power projects abroad.” Therefore, it is crucial to promote green financing in BRI countries. To convince the international community, preparations can be made in advance to ensure better, greener, and more efficient BRI investment and financing through

enhanced design, research, and analysis. This will help prevent China’s efforts from being frustrated by various kinds of misunderstanding and vilification. I believe this will be an important topic to be addressed at the upcoming third Belt and Road Forum for International Cooperation.

Currently, there is ample and low-cost liquidity in China. While seeking juicy investment and financing opportunities domestically, Chinese financial firms will surely tap into foreign markets, particularly markets along the Belt and Road. Today, some Western politicians are trumpeting “decoupling” from China, which has been recently rephrased as “de-risking” from China. Faced with increasingly unfavorable western markets, China needs to give higher priority to BRI countries. If China can seize opportunities that are available in abundance in BRI markets and make full use of its superior capacities and investment and financing capabilities, it will not only create jobs domestically, but will also generate more employment opportunities and expand talent pools in project-hosting communities. Therefore, how to properly address debt problems in BRI countries is a subject that deserves serious attention and consideration.

(The actual cases are shortened due to space constraints)

# Promoting the Development and Cooperation of Climate Finance along the Belt and Road

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Addressing climate change and realizing a green and low-carbon transition is an urgent task for countries around the world to achieve sustainable development. Building a Green Silk Road has become an important pillar for the implementation of the Belt and Road Initiative. Synergizing climate strategies of the countries along the Belt and Road and promoting development and cooperation of climate finance will strongly benefit the countries and regions along the Belt and Road to cope with climate change, to seize opportunities for green development, and to realize the goals of the Paris Agreement and the global Sustainable Development Goals (SDGs).

## 1. The significant challenges of climate action and huge financing gap along the Belt and Road

In recent years, the frequent occurrence of extreme weather events, the energy crisis triggered by the Russia-Ukraine conflicts, and the tremendous energy demand for economic and social development, have made climate adaptation and mitigation actions urgent and challenging in countries and regions along the Belt and Road.

### 1.1 Large total carbon emissions and daunting decarbonization challenges along the Belt and Road

Composition and trends of national carbon emissions differ across development stages. The Industrial Revolution has brought about technological innovation, but also increased consumption of fossil fuel-based energy sources such as coal and oil,

aggravating total carbon emissions. Addressing climate change has become a global consensus since the twenty-first century. The total global carbon emissions have deaccelerated since 2010, with diverging pace between developed and developing countries. The former have entered the post-industrialization period, most of which have achieved carbon peaking and seen their carbon emissions decreasing in recent years. For the emerging economies and developing countries (EMDCs), they have only started industrialization in recent decades, and their carbon emissions have been continuously climbing, accounting for an increasingly larger share of total global carbon emissions.

Most of the countries and regions along the Belt and Road are EMDCs, with large carbon emissions and considerable difficulties in carbon reduction. Based on the EU Emissions Database<sup>2</sup>, the total carbon emissions of 65 countries along the Belt and

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2 Countries along the “Belt and Road” route (based on 65 countries): China, Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar, Cambodia, Timor-Leste, Nepal, Bhutan, India, Pakistan, Bangladesh, Sri Lanka, Maldives, Kazakhstan, Turkmenistan, Afghanistan, Iran, Iraq, Georgia, Armenia, Azerbaijan, Turkey, Syria, Jordan, Israel, Palestine, Saudi Arabia, Bahrain, Qatar, Yemen, Oman, United Arab Emirates, Kuwait, Lebanon, Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Montenegro, Romania, Poland, Serbia, Slovakia, Slovenia, Russia, Belarus, Ukraine, Moldova, Mongolia, Egypt.

Road reached 23.7 billion tons in 2021, accounting for 62.5% of the global emissions. Among them, countries with carbon emissions exceeding 2% of the global total included China (33%), India (7%), Russia (5%), Iran (2%), Indonesia (2%), and Saudi Arabia (2%). Turkey, Vietnam, Poland, Thailand, Egypt, Malaysia, Pakistan, Kazakhstan, and the United Arab Emirates accounted for about 1%. Meanwhile, according to the International Energy Agency's (IEA) "Carbon Report 2022", global coal production and coal power generation hit record levels in 2022 amid the energy crisis. The agency estimated 10% of the world's new electricity demand will have to be met by coal and natural gas generation between 2022 and 2025, with Southeast Asia, India, and China increasing their coal consumption by 14%, 7%, and 5%, respectively.

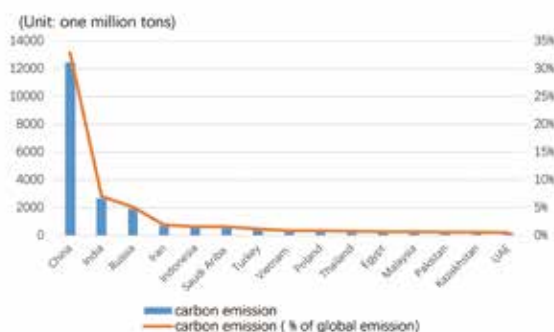


Figure 1 Overview of carbon emissions in countries along the “Belt and Road” route

Source: Compiled by Boao Forum for Asia Academy based on data from the European Union Carbon Emissions Database

Confronted with substantial challenges of addressing climate change and achieving low-carbon transition, most countries along the Belt and Road have actively assumed their international responsibilities to decarbonize while industrializing their economies, and submitted, as parties to the Paris Agreement, Nationally Determined Contribution (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC). They have formulated or are in the process of formulating long-term climate strategies. Among them, nearly 40 countries have put forward carbon neutrality timelines. Vietnam, Thailand, Malaysia, and the UAE have set the carbon neutrality target for 2050; Turkey for 2053; China, Russia, Indonesia,

Saudi Arabia, and Kazakhstan for 2060; and India for 2070. Among the top 10 countries along the Belt and Road in terms of carbon emissions, China released China's Mid-Century Long-Term Low Greenhouse Gas Emission Development Strategy in 2021 and National Climate Change Adaptation Strategy 2035 in 2022. In 2022, Indonesia launched its Long-Term Strategy for Low Carbon and Climate Resilience in 2050; Russia released its Low Greenhouse Gas Emission Socio-Economic Development Strategy 2050; India released its Long-term low-Carbon Development Strategy; and Saudi Arabia put forward the Green Saudi Initiative and the Green Middle East Initiative.

Generally speaking, in consideration of large carbon emissions, low level of economic and infrastructure development, as well as high debt vulnerability, many countries along the Belt and Road are likely to face more difficult and complex situations than the developed counterparts on their net-zero pathways towards 2050-2070 that are compatible with the Paris Agreement objectives.

**1.2 Mounting financing difficulties and large funding gap in the regions along the Belt and Road**

Countries along the Belt and Road are mainly EMDCs. For them, funding gap is substantial for climate adaptation, energy saving and emission reduction. An estimation made by a research team of Tsinghua University shows that, under the “3060” scenario, aiming at the 2 °C temperature target, about 127 trillion yuan (about US\$18 trillion) of investment are required in China during 2020-2050, and the amount would be 174 trillion yuan (about US\$15 trillion) for achieving the 1.5 °C temperature goal. The Price Monitoring Centre of the National Development and Reform Commission of China has predicted that annual funding needs may reach 3.1-3.6 trillion yuan (US\$440 billion-514 billion) to achieve carbon peaking in 2030, resulting in a funding gap of more than 2.5 trillion yuan (about US\$370 billion) taking into account the current actual investment of only 526.5 billion yuan (US\$75 billion) per year.

According to a study released in 2021 by an Indian think tank Council on Energy, Environment, and Water, Center for Energy and Finance (CEEW-CEF), India would need a cumulative investment of US\$10.1 trillion

in order to achieve its carbon neutrality goal by 2070, facing an investment shortfall of US\$3.5 trillion and needing US\$1.4 trillion concessional financing from developed economies. Indonesia's Ministry of National Development Planning estimates that the annual investment cost of carbon reduction in Indonesia from 2021-2030 would be around US\$15-20 billion, equivalent to 3.4-4.5% of GDP, but the investment from the central government on decarbonization has been lower than 2% of GDP in recent years. According to the World Bank, during 2022-2040, Vietnam needs to invest US\$254 billion for climate adaptation and US\$114 billion for climate mitigation. The two combined would share 6.8% of annual GDP, out of which 1% depends on external financing.

At the same time, the dividends of rapid development of global climate finance have not benefited all economies equally. Climate finance to developing countries along the Belt and Road remains limited and costly. Global climate finance has been fast growing in the first half of 2023, and corporate green bonds and green loan issuance surpassed fossil fuel-related debt issuance for the first time. However, Bloomberg data shows that as of June 2023, more than 70% of the outstanding portion of sustainable finance was in mature markets, in contrast to less than 15% in emerging markets. This proportion for developing countries along the Belt and Road was even smaller.

The Climate Policy Initiative estimates that global climate finance would reach US\$ 850-940 billion in 2021, an average increase of 28%-42% from that of 2019-2020. In 2020, East Asia and the Pacific accounted for nearly half (with China accounting for 81% of this) of global climate finance, with North America and Western Europe sharing about a quarter and other countries for less than a quarter. Moreover, 76% of climate finance was mobilized domestically, with 93% of climate finance in East Asia and the Pacific mobilized domestically, while South Asia, the Middle East and North Africa (MENA) receiving 57%-58% of climate finance from external sources. In addition, the public and private sectors contributed roughly equally to climate finance; grants accounted for less than 5 percent and concessional loans for 16 percent. In addition, a 2018 report by the United Nations Development Program (UNDP) found that the costs of green power projects in developing countries were 80 percent higher for equity financing and 100 percent higher for debt financing compared to those in the developed countries. Under current circumstances, the cost of climate finance in hard currencies is likely to rise further in many developing countries along the Belt and Road, against the backdrop of a sharp rise in the global dollar borrowing rates.

Large financing gaps and huge financing costs have become another major obstacle that limits sustainable development and constrains climate actions along the Belt and Road.

### **Box 1 Definition of Climate Finance, Green Finance, Transition Finance and Sustainable Finance**

Climate Finance originates from the negotiations of the financing mechanisms at the UNFCCC. According to the UNFCCC, climate finance refers to local, national or transnational financing from public, private or other sources to support climate mitigation and adaptation actions.<sup>3</sup> Climate mitigation refers to actions to reduce emissions and stabilize the levels of heat-trapping greenhouse gases (GHGs) in the atmosphere, including a range of activities such as improving energy efficiency, using renewable energy, applying Carbon Capture and Storage (CCS) technologies, cleaning up the transport system, recycling waste and rubbish, and increasing carbon sinks in agriculture and forestry and other land uses. Adaptation covers actions to increase adaptive

3 UNFCCC. Introduction to Climate Finance [EB/OL]. <https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance>

capacity and resilience to climate change in order to minimise its impacts and risks, including water resources management, sanitation, agriculture and forestry, fisheries, health, and protection against climate hazards<sup>4</sup>. All investments in the above two areas can be categorized as climate finance.

Green Finance was first put forward in the G20 Green Finance Synthesis Report. It can be understood as investment and finance that provide environmental benefits in the context of environmentally sustainable development through reductions in air, water and land pollution, reductions in GHG emissions, improved energy efficiency while utilizing existing natural resources, as well as mitigation of and adaptation to climate change and their co-benefits.<sup>5</sup> It calls for the internalization of environmental externalities, enhancing understanding of financial institutions about environmental risks, boosting environmentally friendly investments and reducing harmful ones. According to the Organization for Economic Cooperation and Development (OECD), green finance refers to financial services to achieve economic growth while reducing pollution and greenhouse gas emissions, minimising waste and increasing efficiency in the use of natural resources. The “Guidelines for Establishing the Green Financial System” issued by Chinese government officially defines green finance as “financial services provided for economic activities that are supportive of environment improvement, climate change mitigation and more efficient resource utilization. These economic activities include the financing, operation and risk management for projects in areas such as environmental protection, energy savings, clean energy, green transportation, and green buildings.”<sup>6</sup> It also draws up a top-level architecture for the green financial system in China.

Transition Finance was introduced by the OECD in 2019 and refers to financial activities that help economic agents transit towards sustainable development.<sup>7</sup> In the 2022 G20 Sustainable Finance Report, transition finance is clearly defined as financial services supporting the whole-of-economy transition, in the context of the SDGs, towards lower and net-zero emissions and climate resilience, in a way aligned with the goals of the Paris Agreement and it includes five pillars and 22 principles.<sup>8</sup> Broadly speaking, transition finance covers the full range of financial activities for the transition towards the 17SDGs. Narrowly speaking, it refers to financial support for the low-carbon transition of “Brown Industries” and carbon-intensive industries.

Sustainable Finance is a concept broader in content. A G20 document suggests that sustainable finance can be understood as strong, sustainable, balanced and inclusive financing activities, related institutional settings and market arrangements, supporting, directly or indirectly, the SDGs framework. The International Monetary Fund (IMF) defines sustainable finance as the integration of Environmental, Social and Governance (ESG) principles into business decisions, economic development and investment strategies. All in all, sustainable finance encompasses all financing activities and institutional arrangements to achieve the SDGs, while transition finance focuses on financial services that support transition towards low-emission and climate resilient development pathways. Green finance is more targeted at financing activities and arrangements for climate change mitigation and environmental protection, whereas climate finance includes investment and financing activities that assist climate change mitigation and adaptation.

4 Reference: IPCC. Climate Change 2014 Synthesis Report [R]. [https://www.ipcc.ch/site/assets/uploads/2018/02/SYR\\_AR5\\_FINAL\\_full.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf)

5 G20 Green Finance Working Group:G20 Green Finance Synthesis Report. [https://g20sfwg.org/wp-content/uploads/2021/07/20T6\\_Synthesis\\_Report\\_Full\\_EN.pdf](https://g20sfwg.org/wp-content/uploads/2021/07/20T6_Synthesis_Report_Full_EN.pdf)

6 Seven state ministries: Guidelines for Establishing the Green Financial System. [https://www.mee.gov.cn/gkml/hbb/gwy/201611/t20161124\\_368163.htm](https://www.mee.gov.cn/gkml/hbb/gwy/201611/t20161124_368163.htm)

7 OECD. Transition Finance 2019. [Transition-Finance-Main-Findings-2019.pdf](https://www.oecd.org/transition-finance/2019/) (oecd.org)

8 G20. 2022 G20 Sustainable Finance Report. <https://g20sfwg.org/wp-content/uploads/2022/10/2022-G20-Sustainable-Finance-Report-2.pdf>



The G20 Sustainable Finance Working Group co-led by China and the U.S has developed the G20 Sustainable Finance Roadmap, which proposes important actions and directions to enhance the comparability and consistency of global sustainable finance standards, to establish globally consistent sustainability disclosure standards, and to draw a framework for transition finance etc.. In November 2021, the International Platform on Sustainable Finance (IPSF), co-chaired by the People's Bank of China (PBOC) and the relevant departments of the European Commission, released the Common Ground Taxonomy: Climate Change Mitigation during COP26, and an updated version of the catalogue was released in June 2022. This Taxonomy further enhances the comparability and compatibility of international sustainable finance classifications by introducing “near net-zero” emission concepts rather than the traditional “green”, thus directing more capital into green transformation of hard-to-abate industries such as construction and manufacturing. In addition, in June 2023, the International Sustainability Standards Boards (ISSB) issued two guidelines on sustainability and climate-related disclosures, which has further contributed to the comparability and credibility of sustainable and climate finance activities globally. .

## 2. Progress in climate investment and finance along the Belt and Road

The above evidence shows that governments of countries along the Belt and Road are in urgent need of external funding in light of the huge gap in climate finance and complexities to curb carbon emissions, and they have been encouraging all kinds of institutions to undertake relevant actions. In addition, climate strategies have been launched, and renewable energy technologies such as photovoltaic and wind power are being developed at scale in many countries along the Belt and Road, holding great investment potential. Therefore, climate finance has maintained its momentum as one of the hotly discussed topics, even amidst the occurrence of the COVID-19 pandemic and primary geopolitical conflicts.

### 2.1 Climate investment and finance in countries along the route

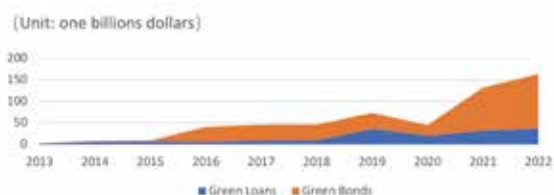
From the perspective of investors, in 2019, China promoted the establishment of the Belt and Road International Green Development Coalition and released the Belt and Road Green Investment Principles. Year 2020 saw China's investment in renewable energy along the Belt and Road exceeding that in fossil energy for the first time. On September 21, 2021, President Xi Jinping announced at the United Nations General Assembly that China will no longer build new overseas coal power projects, signalling that renewable

energy, mainly wind and photovoltaic, will become the focus of China's “Belt and Road” energy investment. Greenpeace predicted in 2021 that China's investment potential in solar and wind energy in countries along the Belt and Road would be US\$1.911-5.733 trillion by 2030. At the same time, China and nearly 20 countries including Australia, Singapore, France, and Italy, either through signing Memorandum of Understandings (MoUs) or issuing statements on third-party market cooperation, had made co-investments in renewable energy a major field for collaboration. For example, in April 2023 China Electric Construction signed an MoU with Schneider Electric Group of France. The two sides will continue to zoom in on low-carbon energy, intelligent transportation, infrastructure and other key industries for the construction of the Belt and Road.

From the perspective of investees, countries along the Belt and Road are making efforts to diversify and scale up climate finance, through establishing Public-Private Partnerships (PPP) policy frameworks and fostering financial markets, in particular the capital markets. For example, Vietnam's PPP legislation and Uzbekistan's PPP amendment bill both came into effect in early 2021. In the same year, IPSF co-sponsored by economies from China, Europe and the others, released the Common Classification and Inventory of Sustainable Finance (CCSF) Report. The Association of Southeast Asian Nations (ASEAN) also released

the ASEAN Sustainable Finance Catalog in 2021. Moreover, China, Kazakhstan and Indonesia have established or will soon establish carbon emissions trading markets, while Thailand, Saudi Arabia and Singapore have successively established voluntary carbon credit markets.

From 2013 to 2022, the issuance of green bonds and green loans by countries along the Belt and Road has surged year by year, exhibiting explosive growth from less than US\$ 3 billion in 2013 to US\$ 164.5 billion in 2022 in total. Except for 2020, when the issuance decreased due to the COVID-19 pandemic, the issuance of green bonds and green loans have maintained a high growth rate. The average annual growth rate recorded 194% and 24% in 2021 and 2022, respectively.



**Figure 2 Cumulative year-on-year accumulation of green bonds and green loans of countries along the Belt and Road**

Source: Institute of International Finance (IIF), Sustainable Debt Monitor, July 31, 2023

In terms of financing modes, before 2015, countries along the Belt and Road mostly relied on green loans. After 2015, governments have paid greater attention to green finance by establishing a green financial system and encouraging the securitization of green credits. Influenced by China, Singapore, Hong Kong SAR and other economies, the issuance of green bonds in countries and regions along the Belt and Road has risen sharply after 2015 and become the main method of green finance in recent years.

In 2015, the Chinese government successively issued the Overall Program for the Reform of the Ecological Civilization System, the Catalogue of Projects Supported by Green Bonds (2015 Edition) and the Guidelines for the Issuance of Green Bonds, which put forward the concept of green bonds and for the first time clearly defined the scope, classification, issuance

methods, ratings, and disclosure of information, etc. In 2016, China issued the Circular on the Pilot Project of Green Corporate Bonds, and corporate green bonds were officially publicly issued on the Shanghai Stock Exchange. In the following years, China has continuously issued regulations related to green bonds, refined the projects and areas supported by the use of green bonds proceeds, and made more detailed provisions on the use of funds raised, as well as the assessment and supervision of green bonds, all of which have greatly facilitated the development of green bonds market. For instance, the Project Catalogue supported by Green Bonds was released in 2021, and no longer includes clean use of coal and other fossil fuel energy sources as eligible activities.

In recent years, the ASEAN countries have proactively formulated green finance policies. For instance, in 2017, the Monetary Authority of Singapore (MAS) released a Sustainable Bond Grant Scheme valid until May 31, 2023 to bolster green bond issuance in Singapore. In November 2019, the MAS launched its Green Finance Action Plan (GFAP), out of which the Green Investment Program (GIP) totalling \$2 billion was established, and the Green and Sustainability-Linked Loan Subsidy Scheme (GSLs) was put into place to support environmentally sustainable projects and mitigate climate change risks in Singapore and other countries and regions including those along the Belt and Road. The GFAP was expanded into Finance for Net Zero Action Plan in 2023, incorporating transition finance. In addition, countries and regions such as India, China Hong Kong SAR, and Taiwan Province of China have also supported green finance, using a combination of green loans and green bonds to encourage the development of clean and sustainable development projects and enterprises.

In addition, looking at commitments of financial institutions along the Belt and Road in assisting net zero actions, among the Green Investment Principles<sup>9</sup>

<sup>9</sup> The Green Investment Principles (GIP) for BRI was launched in 2019 as a sustainable finance international initiative. By the end of June 2022, it had 43 signatory institutions from 16 countries and regions and 14 partner agencies, whose assets owned or under management exceeded 41 trillion US dollars.

signatory institutions, 68% are formulating finance withdrawal plans on all forms of coal/fossil fuel projects, fortifying resolves on all round phasing-out of coal and other fossil fuel; 49% have made first environmental risk disclosure in line with the framework developed by the Task Force on Climate-Related Financial Disclosures (TCFD); 54% have quantified and disclosed their positions on carbon-intensive industries; and 70% are setting their quantitative green investment goals.

Overall, in recent years, many Belt and Road countries have shifted from relying mainly on fiscal resources to blended finance, such as development loans, project financing, and debt and equity financing in capital markets. According to Bloomberg database, from 2010 to 2022, countries and regions along the Belt and Road issued a total of US\$ 400 billion in green bonds, accounting for 20% of all green bonds issued. During the same period, green loans from these countries and regions totalled more than US\$193 billion<sup>10</sup>, accounting for 27% of all green loans. China, Hong Kong SAR of China, Singapore and India ranked the top four countries and regions along the Belt and Road in terms of green bond issuance, and the total amount of green loans issued by them also had top rankings in the world. Furthermore, the Taiwan Province of China, Turkey, UAE, Indonesia and Saudi Arabia have outstanding performance in green loans. Moreover, well capitalized Asian sovereign wealth funds (such as China Investment Corporation, Temasek, and Mubaddai) and diversified medium- and long-term investment funds (such as the Silk Road Fund and the China-Central and Eastern Europe Fund) have become important participants in green equity investments along the Belt and Road.

<sup>10</sup> Inconsistent with the caliber of China's green bond and green loan statistics. According to China's domestic caliber, in 2022, the scale of China's labeled green bond issuance will be 913,028,000,000,000 yuan; and new green loans will be 6.13 trillion yuan.



Figure 3 Overview of green loans and green bond financing in selected countries along the Belt and Road Initiative

Source: Institute of International Finance (IIF), Sustainable Debt Monitor, July 31, 2023

## 2.2 Participation of multilateral development banks in climate finance in countries along the route

Multilateral development banks (MDBs), as well as multilateral and bilateral climate funds have been playing a proactive role in mobilizing climate finance. MDBs act as pioneering investors and practitioners of green and sustainable development projects. They also serve to convene crucial stakeholders. Generally speaking, MDBs undertake independent country analyses, including its political, financial and monetary risks, as well as its overall development progress in social-economic and environmental facets. As such, MDBs hold great potentials to help countries build green capital markets, particularly the issuance of green and sustainability bonds in local currencies. Moreover, they could help promote Public-Private-Partnerships, through their advantages in information, technology, environmental and social standards etc., and further blended finance and anchored investment, so as to fill green investment gaps of Belt and Road countries without imposing extra fiscal burden.

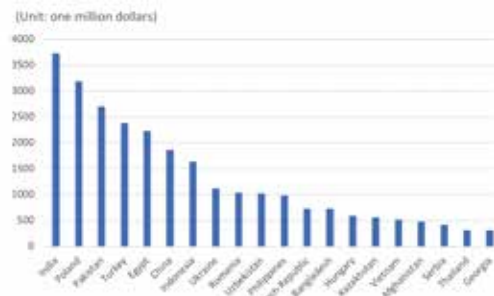


Figure 4 The ranks of countries along the Belt and Road in terms of access to MDB climate finance, 2021

According to the 2021 Joint Report on Multilateral Development Banks' Climate Finance, in 2021, MDBs provided around USD \$81.8 billion in climate finance globally, of which about USD \$63 billion was for climate change mitigation and \$19 billion was for climate change adaptation. The amount of mobilized finance stood at \$90 billion, 46% of which was from the private sector. During the same year, the Belt and Road countries received a total of USD 30 billion in climate finance from MDBs, with India (USD 3.7 billion), Poland (USD 3.2 billion), Pakistan (USD 2.7 billion), Turkey (USD 2.4 billion) and Egypt (USD 2.2 billion) ranking the top of the list.

The same report also presents a list of MDBs' post-2020 climate finance plan. As is shown in the

table below, the Asian Infrastructure Investment Bank, for instance, has set a minimum 50% target of climate finance out of its actual total financing approvals by 2025, while the European Investment Bank intends to gradually increase its share of financing for climate and environmentally sustainable operations to more than 50% in 2025. To give another example, the European Bank for Reconstruction and Development aims for more than 50% of annual investment to green projects by 2025. The New Development Bank aims at directing 40% of its total approvals to climate mitigation and adaptation projects between 2022 and 2026. The World Bank has committed, in its Climate Change Action Plan in 2021, to lift the share of climate finance during 2021-2025 in the whole bank group to 35%.

**Table1 Post-2020 targets related to the joint MDB climate finance programs**

MDB	Post-2020 targets related to the joint MDB climate finance tracking methodology
AfDB	Doubling of climate finance to \$25 billion for the period 2020-25, giving priority to adaptation finance. Source: The African Development Bank pledges \$25 billion to climate finance for 2020-2025, doubling its commitments.
ADB	By 2030, at least 75% of the number of its committed operations (on a three-year rolling average, including sovereign and non-sovereign operations) will be supporting climate change mitigation and adaptation. Climate finance from the ADB's own resources will reach \$80 billion for the period 2019-30. In 2021, ADB elevated its climate finance ambition to reach \$100 billion, up by \$20 billion by 2030. Source: Strategy 2030: Achieving a Prosperous, Inclusive, Resilient and Sustainable Asia and the Pacific News Release: ADB Raises 2019-2030 Climate Finance Ambition to \$100 Billion Medium-term targets: 65% of the number of operations (on a three-year rolling average) and \$35 billion for the period 2019-24. Source: ADB Corporate Results Framework, 2019–2024: Policy Paper
AIIB	Reflecting its commitment to support the Paris Agreement, AIIB will aim to reach or surpass by 2025 a 50% share of climate finance in its actual financing approvals. The Bank currently estimates its cumulative climate finance approvals to be \$50 billion by 2030. Source: AIIB Corporates Strategy: Financing Infrastructure for Tomorrow, AIIB to Fully Align with Paris Agreement Goals by Mid-2023, Currently projects \$50 billion investment for climate finance by 2030.
EBRD	Green finance is to account for more than 50% of total annual EBRD investment by 2025. The EBRD's Green Economy Transition (GET) approach for the period 2021-25 is helping economies where EBRD operates build green, low-carbon and resilient economies. The new approach sets a green finance target of 50% of all EBRD's Annual Bank Investment by 2025. This green finance is composed of climate finance for both mitigation and adaptation as well as finance addressing other environmental objectives. The EBRD does not have separate targets for climate action. Nevertheless, it expects that the bulk of the finance will be classified as climate finance under the joint MDB approach, in line with the EBRD's current investment focus. For the previous period, 2016-20, cumulative climate finance accounted for approximately 95% of the reported green finance. Source: <a href="https://www.ebrd.com/what-we-do/get.html">https://www.ebrd.com/what-we-do/get.html</a>

MDB	Post-2020 targets related to the joint MDB climate finance tracking methodology
EIB	<p>The EIB will gradually increase the share of its financing dedicated to climate action and environmental sustainability to more than 50% of its operations in 2025.</p> <p>From 2021, the EIB will deliver against a target that comprises both climate finance and environmental sustainability finance. Although the EIB does not use any separate climate finance target, the joint target has been approved by the EIB's Management Committee on the basis of modelling the climate finance as a percentage of total financing. This modelling has shown that climate finance comprises approximately 85% of the volume reported against the target. Additionally, adaptation finance should increase to 15% of climate finance by 2025.</p> <p>Source: The EIB Group Climate Bank Roadmap 2021-2025; The EIB Climate Adaptation Plan: Supporting the EU Adaptation Strategy to build resilience to climate change.</p>
IDBG	<p>Climate finance in IDB Group operations (of climate finance approvals as a percentage of all financing commitments for 2020-23) is ≥30% (annual floor). Note: IDB Invest reports at the level of closing (not approvals).</p> <p>Source: <a href="https://crf.iadb.org/en">https://crf.iadb.org/en</a></p>
IsDB	<p>The IsDB is committed to a climate finance target of 35% of total financial commitment by 2025.</p> <p>This 35% climate finance target excludes operations of IsDB Group members including the Islamic Corporation for the Development of the Private Sector (ICD), the International Islamic Trade Finance Corporation (ITFC) and the Islamic Corporation for Insurance of Investment and Export Credit (ICIEC).</p> <p>Source: IsDB 2020-2025 Climate Action Plan</p>
NDB	<p>NDB aims to direct 40% of total approvals to projects contributing to climate change mitigation and adaptation, including energy transition, over 2022-2026.</p> <p>Source: <a href="https://www.ndb.int/wp-content/uploads/2022/07/NDB_StrategyDocument_eVersion_07.pdf">https://www.ndb.int/wp-content/uploads/2022/07/NDB_StrategyDocument_eVersion_07.pdf</a></p>
WBG	<p>The WBG announced a target for an average of 35% of its financing to be climate finance over the period 2021-25. 50% of World Bank - IBRD and IDA - climate financing will support adaptation and resilience.</p> <p>The 35% target is a significant increase from the 26% achieved on average in FY 2016-20 and an even larger increase in dollar terms as the World Bank Group's total financing had also expanded.</p> <p>Source: <a href="https://openknowledge.worldbank.org/handle/10986/35799">https://openknowledge.worldbank.org/handle/10986/35799</a></p>

In the recent G20 Summit, which was concluded on 10 September 2023 in New Delhi, India, the G20 New Delhi Leaders' Declaration was adopted to chart an action-oriented path in response to global development challenges. The Declaration notes the need of US\$ 5.8-5.9 trillion in the pre-2030 period required for developing countries, in particular for their needs to implement their NDCs, as well as the need of US\$ 4 trillion per year for clean energy technologies by 2030 to reach net zero emissions by 2050. That said, the role of MDBs in leveraging climate finance, capacity building and technology transfer needs to be enhanced. The Declaration calls for the World Bank to pivot more headroom and concessional loans into low and middle-income countries, and expects progress being made in IMF's channelling voluntary SDR lending into MDBs. The Declaration also endorsed the G20 Technical Assistance Action Plan, which emphasizes capacity building in the sphere of sustainable finance.

In addition, many other multilateral and bilateral funds, including the Green Climate Fund under the UNFCCC, the China Climate Change South-South Cooperation Fund, and the Saudi & Middle East Green Initiatives etc., have provided alternative climate finance options. A call for an ambitious second replenishment process of the Green Climate Fund for its upcoming 2024-2027 programming period is also outlined in the Declaration.

### 3. Recommendations for promoting the development and cooperation of climate investment and finance along the Belt and Road

Although positive progress has been made in climate finance along the Belt and Road, the countries along the route still need to obtain large-scale financial support to improve their national energy structures and ecological environments, combat climate change and realize a just transition. To that end, the following recommendations are made:

**First, South-South cooperation shall be further strengthened and top-level design and capacity-building of green financial systems shall be enhanced in countries along the Belt and Road.** Fully recognizing and respecting the differences in the development stages, priorities and policy systems of various countries, we should learn from each other's advanced concepts, practices and standards, and gradually promote a green financial system that encompasses a green financial standards system, supervision and information disclosure requirements for financial institutions, incentive and restraint mechanisms, product and market systems, and international cooperation. As an important representative of EMDCs, China faces many common constraints and policy considerations with the countries along the route of the Belt and Road during the transition process, and can further utilize the existing cooperation platforms and standards, such as the Belt and Road International Alliance for Green Development, the Belt and Road Energy Partnership, and the Green Investment Principles for the Belt and Road Initiative, etc., to carry out exchanges in various forms and at different levels with the countries along the route, and to assist them in strengthening their top-level design and capacity building.

**Secondly, dynamic benchmarking between markets and governments' zero-carbon targets and roadmaps shall be reinforced, and green financial market infrastructure and incentive mechanisms shall be established and improved to promote market-driven resource allocation for green and low-carbon development.** By formulating green standards to classify green projects and strengthening climate and environmental information disclosure, investors' concerns about "greenwashing" will be dispelled. Financial institutions shall be encouraged to participate in mandatory and voluntary carbon markets, so as to realize the advantages of intertemporal capital allocations. Green financial products should meet the unique needs of different green industries, spell out the income distribution mechanism, and ensure attractive rate of returns. At the same time, green bond issuance

in hard currencies, countries along the route could also explore the issuance of green bonds in their own currencies or emerging market currencies, so as to broaden the channels of green financing and reduce financing costs.

**Third, the design and preparation of green projects shall be ameliorated.** The understanding of green industries and projects shall be further harmonized, and consistent norms for project preparation and management shall be developed to help reduce potential risks and expand the pool of potential investors. The countries along the route should strengthen the sharing of lessons learned in project preparation and planning, especially in areas of socio-environmental risk assessment and monitoring, impact assessment, and financial and economic analysis, so as to collaboratively improve the quality of projects and attract long-term institutional investors. Project investors could also further explore how to more effectively access and utilize technical assistance support, such as project preparation funds, in order to optimize project design and enhance project acceptance on the investment side.

**Fourthly, the role of multilateral development finance should be further strengthened to vigorously develop blended climate financing and expand the scale of financing.** MDBs can participate in blended financing by providing grant-based or concessional loans, bearing the upfront risks and the potential losses of the project, and encouraging the participation of private capital; it can also reduce the risks associated with credit, politics, regulation and exchange rate by providing guarantees, etc., and attract private investment. According to estimations, every \$1 of investment made by MDBs in syndicated loans can mobilize \$7 of private sector funds within three years. Chinese-funded institutions and all relevant investment entities in the countries along the route can further strengthen their cooperation with MDBs, as well as explore ways and tools of blended financing, to efficiently and reasonably distribute benefits and risks among all parties, and enhance the fundability of projects.

# How Green is the Belt and Road Initiative (BRI)?

## Assessing experience in selected GGGI Member States and potential for green BRI projects going forward

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### Abstract

This paper reports on a survey among GGGI Member States that aims to assess experiences with China's Belt and Road Initiative (BRI) in the past ten years. The survey was conducted among GGGI country teams embedded in Member States with a significant engagement in the BRI. For a selected number of countries, follow-up interviews were conducted with the government officials responsible for engaging with the BRI to confirm, correct, and expand upon the survey results obtained through GGGI country teams.

The survey resulted in valid responses from 24 country teams and follow-up interviews with government officials in 4 countries. The survey aimed to generate an overview of all significant BRI-funded investment projects in the 24-country sample. The total number of projects in the sample is 104.<sup>1</sup> Through the survey and additional literature review, the total BRI investment reviewed in the 18 countries is estimated to be around USD 150 billion.

The BRI projects were assessed in a number of

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<sup>1</sup> The sample of projects was selected by GGGI country teams or local governments, and therefore may not be representative of all BRI projects in the surveyed countries.

key sectors, including some that were considered "dark green" (highly likely green) and others that were "light green" (possibly green, depending on additional data this limited survey could not obtain).

Dark green BRI investments were defined as electric transportation projects (railways, light rail, metro) and renewable energy (solar and wind). Light green BRI investments were defined as hydropower, water supply, and irrigation projects. Dark green BRI projects totaled USD 38 billion, or 25% of the total BRI investment in this sample. Light green BRI projects totaled USD 10 billion or 7% of the total.

The survey also asked respondents to indicate the likely interest of the GGGI Member State in green BRI investments in a number of green growth projects in which China has significant strength for the next ten years. Survey results showed a high potential for green BRI investments in all 24 countries in the sample. The highest potential interest was assessed for electric car projects (83%), electric bus projects (83%), and solar PV projects (78%).

The survey concludes that in the past ten years, BRI projects in the GGGI Member States have already shown a significant green share, 32% categorized as

either dark or light green. Based on the survey, there would be a very significant potential to expand the green share of future BRI projects. GGGI would be keen to support its Member States to develop potential green investment projects that could be financed through BRI going forward.

### Introduction

Since its launch in 2013, the Belt and Road Initiative has become an important global economic initiative for China.

According to Umbach (2022), the BRI was created in response to China's industrial overcapacity, low domestic demand, stagnating exports abroad, and the need to increase connectivity with developing economies to expand new foreign markets. By 2027, total global BRI spending could reach \$1.3 trillion. Other economic forecasts predict more than 2,600 projects worldwide valued at \$3.7 trillion.

China's BRI has increasingly invested in the Middle East, the Persian Gulf and Africa. By 2016, China was the largest exporter to Africa, accounting for 17.5 percent of Africa's imports (Umbach 2022). By mid-2017, more than 10,000 Chinese-owned companies had already operated in Africa. Loans from China to African countries (\$126 billion) surpassed its foreign direct investments (\$41 billion) between 2001 and 2018. China's two main overseas development banks invested \$23 billion in infrastructure projects in Africa between 2007 and 2020 – \$8 billion more than the other top eight lenders combined (Umbach, 2022).

The scope, reach and size of the BRI make it one of the most important partners for many of GGGI's Member States. The key question this paper aims to answer is to what extent the BRI has supported the green transition of its partners in the first ten years of its existence. In addition, the supplementary question is whether there is scope to expand the green content of the BRI in the coming decade and have the BRI act as a catalyst for the green transition, promoting low-carbon development and the achievement of the UN Sustainable Development Goals.

These questions are not new. The Chinese

Ministry of Ecology and Environment established a BRI International Green Development Coalition (BRIGC) in 2019 that includes the Ministries of Environment in 26 BRI partner countries, nine intergovernmental organizations, including GGGI, 85 NGOs and research institutes and 32 Chinese enterprises. The BRIGC published a Green Development Guidance for BRI Projects Baseline Study Report in 2020 (BRIGC). The report analyzes the global best practices for promoting green development and creates a classification system for BRI projects based on environmental impacts. (Using traffic lights to categorize projects) It provides guidelines for the planning of future BRI projects. A number of researchers have attempted to assess the green potential of BRI projects, and the next section of this paper provides a short overview of the green BRI literature.

We have found very little data, on the green share of the BRI or an assessment of the key green sectors the BRI has invested in. This gap prompted this survey among GGGI Member States to assess the green share and key green sectors of the BRI.

While the BRI in its early years made some huge and high-profile investments in coal mines and coal-fired power plants, this has changed in recent years. In September 2021, Chinese President Xi Jinping committed in his address to the UN General Assembly that China would no longer invest in coal-fired power plants internationally. Similar commitments were issued by Korea and Japan, the other major investors in coal-fired power plants, around the same time. Also, in 2021, the Chinese government issued a new "Green Development Guideline for Overseas Investment and Cooperation" (China Daily, 2021). The focus of Green BRI is shifting from infrastructure projects to more green finance, green energy, and green technology-related projects. Meanwhile, Chinese financial institutions and companies are also increasing their green investments overseas.

This change in focus of the BRI prompted the question of whether there is a demand for Chinese-funded green growth investment projects in the GGGI Member States. This is the second question this survey aims to answer.



## Green Potential of the BRI

Chinese and international scholars have published studies on Green BRI with various focuses and viewpoints. In December 2021, a research study analyzed 537 publications on Green BRI written in English and Chinese. (Liu & Bennett, 2021) Most studies concur with the significant potential of the Green BRI. Given that BRI member countries typically have their own sustainable development plans, considerable opportunities exist for China to engage in collaborative efforts with these countries. This collaboration can lead to the creation of more environmentally friendly projects tailored to each country's specific sustainability goals (Cheshmehzangi & Xie, 2021). There are clear synergies between the BRI and the United Nations' 2030 Agenda for Sustainable Development. China has already forged collaborations with more than sixteen UN agencies on various BRI projects, yielding successful examples such as the UNDP's initiative promoting sustainable investments in Ethiopia. The United Nations recognizes the substantial value of the BRI in expediting the implementation of the 2030 Agenda and addressing gaps in its execution. It strongly encourages all stakeholders involved in the BRI and SDGs to leverage the BRI's potential to its fullest extent (UN, 2022).

In recent years, the promotion of sustainable and environmentally friendly practices within BRI countries has gained prominence. Green technology and green finance have emerged as key recommendations for integrating sustainability into BRI infrastructure projects. Success stories include the Silk Road Fund's investments in renewable power assets across Africa and the Middle East, Vietnam's successful mobilization of private-sector investment in solar PV projects, and Kazakhstan's ongoing transition from fossil fuels to green energy sources (WEF, 2022). Established in December 2019, the Green Investment Principles (GIP) is a platform for leading financial institutions to strengthen their dedication to green investments within BRI. Subsequently, the Central Asia regional chapter of the GIP was inaugurated in May 2021, and the African chapter was officially launched during COP27 (GIP, 2021). In addition, China's technical expertise and

extensive experience in the field of decarbonization have made a significant contribution to global low-carbon development. The results of these efforts are evident in various BRI member countries, particularly on specific infrastructure projects, such as renewable energy power stations (CCIEE & UNDP, 2021).

However, like many other global initiatives, the BRI is not immune to criticism. Opinions among Chinese and international scholars often diverge on various aspects, occasionally influenced by bias and misunderstandings (Liu & Bennett, 2021). Green BRI also faces challenges from current geopolitics, U.S.-China relations, the escalation of North-South disputes, and the energy crisis resulting from the Russia-Ukraine conflict (Shi, 2023). Nevertheless, a shared consensus exists regarding the imperative need to advance more Green BRI projects in alignment with the United Nations' Sustainable Development Goals. Furthermore, there is a collective emphasis on the pivotal roles played by non-state actors and host countries in shaping the future of Green BRI projects (Liu & Bennett, 2021).

Despite all the challenges, China continues to advance its Belt and Road Initiative. In September 2021, President Xi Jinping announced the Global Development Initiative (GDI), demonstrating China's willingness to collaborate with all 193 countries globally, with a strong emphasis on promoting greener, cleaner, and more sustainable investments. Importantly, the GDI is not designed to replace the BRI but rather to complement it, as both initiatives serve as primary drivers of global South-South cooperation and valuable tools to bridge the North-South development gap while advancing the UN's 2030 Agenda for Sustainable Development (Chen & Wang, 2022). In March 2022, the Chinese government issued an official statement on the Green BRI titled "Opinions on the Joint Implementation of Green Development in the Belt and Road Initiative." It is China's first official response to Xi Jinping's pledge to no new coal-fired power plants overseas to the UN in September 2021 (de Boer, Wang & Fan, 2022). During the Two Sessions of 2023, China updated its policies on the BRI and aimed to develop deeper collaboration between BRI and other international initiatives while

promoting green technology developments alongside BRI. China currently leads in hydroelectric power generation in Southeast Asia, boasting the world's largest capacity for non-hydrocarbon-based energy production. With this strong foundation, China is poised to play a dominant role in driving the development of solar, wind, and other green technologies in emerging economies (Bajpae, 2023).

### Survey of Green BRI in GGGI Member States

The authors designed the survey and invited all 47 GGGI country teams embedded in the governments of GGGI Member States to complete the survey on August 31, 2023. The survey was filled out by 24 country teams, and of these, 18 reported significant BRI investments in their country. These 24 countries are the sample analyzed in this paper, while the six countries without significant BRI investments are indicated with an asterisk in the list below.

**The 24 countries with a valid response to the survey are, in alphabetical order:**

1. Burkina Faso\*
2. Cambodia
3. Colombia
4. Côte d'Ivoire\*
5. Ethiopia
6. Fiji
7. Jordan
8. Kiribati
9. Lao PDR
10. Mexico\*
11. Mongolia
12. Morocco
13. Nepal\*
14. Papua New Guinea
15. The Philippines
16. Qatar
17. Senegal\*
18. Sri Lanka
19. Tonga\*
20. United Arab Emirates
21. Uganda
22. Uzbekistan
23. Vanuatu
24. Vietnam

**The survey questions were as follows:**

1. Have major BRI projects/programs been implemented in the country in the past ten years (2013-2023)?

a. If yes, please list major projects:

2. Can you indicate some major outcomes of past BRI projects/programs in the country?

3. Are there any BRI projects/programs in the country that promote environmental sustainability (green BRI projects), such as renewable energy or electric mobility?

a. If yes, please list major projects:

4. If there were any green BRI projects/programs, what were the success stories (if applicable)?

5. Is there likely to be a (potential) demand for BRI-led or supported green/environmental projects in the coming ten years if made available by Chinese partners?

6. If yes, what green sector or project is likely to be prioritized by government (multiple answers possible) for BRI support:

- a. renewable energy – solar PV
- b. renewable energy – wind
- c. energy storage/grid batteries
- d. mini hydro
- e. biogas
- f. electric buses
- g. electric cars
- h. electric 2-wheelers
- i. green industry
- j. green buildings
- k. energy efficiency
- l. waste management
- m. climate-smart agriculture
- n. reforestation
- o. other

In addition, the survey asked how GGGI could best support future Green BRI projects and which government departments/officials are responsible for engagement with the BRI in each country.

Analyzing the survey results, the authors compiled a database of major BRI-financed investment projects available in Annex A, forming the baseline dataset analyzed in this paper. While the survey responses provided estimates of the investment size of the projects in some cases, in most cases, the investment size was obtained not through the survey but by the authors through a literature review. It is recognized that, in many cases, the investment numbers published in newspapers and reports may not accurately reflect the actual cost of the project. Therefore, all investment estimates are rounded off to a maximum of 2 significant numbers, indicating these are order-of-magnitude estimates.

### **Extent and Scope of BRI in Selected GGGI Member States**

The BRI projects reported through the survey have been categorized by sector, as shown in Tables 1 and 2. Table 1 shows the projects in each country assigned to 9 sectors, including short project names. Table 2 is a summary table where project values for each sector in each country are added up.

As shown in Table 2, the total BRI investment in the 18 GGGI Member countries is estimated at USD 150 billion through 104 projects. The number of significant BRI projects per country varied from a minimum of 1 project in Vietnam to a maximum of 17 projects in Uzbekistan. The top three sectors in terms of investment are:

1. Industry with 20 projects and a total estimated investment amount of USD 74B
2. Railway with 10 projects and a total estimated investment amount of USD 30B
3. Roads/Bridges with 18 projects and a total estimated investment amount of USD 11B

### **Green Content of the BRI in GGGI Member States to Date**

While cognizant that more sophisticated green taxonomies for the BRI exist, the authors have used the following simplified green taxonomy for this paper. Two categories have been identified that are referred to as “dark green” and “light green.” Dark green projects are intended to be those that are highly likely to be green, notably electric rail transport and renewable energy (solar and wind). Light green projects are those that may be green if environmental guidelines were followed, but that may also not be accepted as green, depending on local circumstances. This paper classifies as “light green” projects linked to hydropower, water supply and irrigation.

As shown in Tables 1 and 2, the total investment in dark green projects in this survey sample is USD 38 billion, or a share of 25 % of the total.

The total investment in light green projects in this survey sample is USD 10 billion, or a share of 7% of the total.

The three countries with the highest absolute investment in (dark + light) green BRI projects are Morocco (USD 15 billion), Uzbekistan (USD 10 billion), and Lao PDR (USD 6 billion).

The three countries with the largest share of (dark + light) green investments in this sample are the Philippines (91%), Uzbekistan (75%), and Uganda (70%).

It is also clear from Tables 1 and 2 that by far the largest green investment in this set of sample countries is through electric railway transportation projects (train lines, light rail, and metro), with a total estimated investment size of USD 30 billion. The second-largest category of green investments pertains to solar energy-related projects, with an estimated total investment size of USD 7 billion. Additionally, green industries such as electronic batteries and electric cars have also witnessed notable growth in recent years.

Table 1. BRI Investment Projects in 18 GGGI Member States

PROJECT SECTOR									
COUNTRY	Roads/Bridges	Railway	Industry	Other Infrastructure	Water Supply	Fossil Fuel Power Plants	Hydropower	Wind	Solar
Cambodia	Phnom Penh-Preah Sihanouk Express Way (USD 2000M)		Sihanoukville Special Economic Zone (USD 1300M)	New Phnom Penh International Airport (USD 1500M)		Coal power plants in Cambodia (USD 3600M)		Chinese firm is studying a 100MW wind farm in eastern Mondulokiri Province (USD 200M)	Jinko Solar, Role (Solar panels provider), Province (Kampong Speu), installed capacity 60MW (USD 76M)
				New Siem Reap International Airport (USD 890M)					Risen Energy, Role (Developer), Province (Battambang), installed capacity 60MW (USD 50M)
				Morodok Techo National Stadium (USD 150M)					China CACS Engineering, Role (EPC Contractor), Province (Kampong Chhnang) installed capacity 309 MW (USD 58M)
Colombia	Highway Mar 2 Urabá (USD 7M)	Metro of Bogotá (USD 250M)	1485 electric buses for Bogotá (USD 14M)		Expansion of water treatment plant Bogota (USD 1000M)				Solar Power Plant Baraona (USD 40M)
	Third lane Bogotá-Girardot (USD 1400M)			Quibdó Airport expansion (USD 60M)					Solar project El Campaño (USD 220M)
	Highway Neiva - Santiana (USD 420M)	80 Railway Medellín (USD 440M)		Urabá Port (USD 150M)					Solar Energy Central Los Llanos (USD 48M)
Ethiopia	Transportation modernization in Addis Ababa (USD 30M)	Addis-Djibouti Standard Gauge Electric Railway Line (USD 4000M)		The African Union Conference Center and Office Complex (USD 200M)					Solar Project Cartago (USD 280M)
	Addis Ababa-Adama toll expressway (USD 450M)	North South, East West Electric Light Railway, Transit (LRT) Line of Addis Ababa (USD 480M)		Addis Ababa Riversides Parks Development (USD 900M)			Genale-Dawa III multipurpose hydro power plant (USD 450M)	Aysha II wind power project in eastern Ethiopia (USD 260M)	
				Waste-to-energy facility in Addis Ababa (USD 120M)					Adama I and II wind power plants (USD 460M)

PROJECT SECTOR										
COUNTRY	Roads/Bridges	Railway	Industry	Other Infrastructure	Water Supply	Fossil Fuel Power Plants	Hydropower	Wind	Solar	
Fiji	Upgrade the Nabouwalu/Dreketi Road on Vanua Levu and (USD 130M)			Suva Civic Centre (USD 10M)						
	Stinson Parade and Vatuwaka bridges in Suva (USD 6M)			Medical training centre and emergency centre at Navua Hospital (USD 6M)						
				W a n g u o ( W G ) Friendship Plaza (USD 75M)						
Jordan			Growing Chinese EVs in Jordan (USD 24M)	Komave resort complex (USD 240M)		The Attarat oil shale power plant project (USD 2100M)				
Kiribati	Improvement to South Tarawa Transport Network (USD 20M)		Agriculture Project (USD 3M)	Recreational Park South Tarawa (USD 1M)						
			Kiritimati Island Copra Mill (USD 5M)							
Lao PDR		Lao China Railway (USD 6000M)	Vientiane S a y s e t t h a Development Zone (USD 500M)							
			Boten Special Economic Zone (USD 10,000M)							
Mongolia			China-Mongolia-Russia economic corridor (USD 30,000M)							
			Construction of Mohammed VI Tangier Tech City (USD 10,000M)				Green Hydrogen project in the northern part of Morocco (USD 5100M)			
Morocco			C h i n e s e - M o r o c c a n Industrial Park (USD 10,000M)							
			Electric vehicle battery factory (USD 6,400M)							

PROJECT SECTOR										
COUNTRY	Roads/Bridges	Railway	Industry	Other Infrastructure	Water Supply	Fossil Fuel Power Plants	Hydropower	Wind	Solar	
Papua New Guinea	High-priority economic road project (USD 3500M)		Agricultural industrial park (USD 330M)		Goroka water supply (USD 32M)					
The Philippines	Transportation and flood-control projects (USD 500M)	Several railways projects. (USD 2800M)						Burgo Wind-Solar Pwerplant 132MW (USD 450M)	Clark Solar P.V. 1.0.0 MW ( USD 2000M)	
Qatar				Hamad Port Project (USD 700M) Lusail Stadium (USD 760M)						
	Southern and Central Expressways (USD 1000M)	Southern Railway Project (USD 280M)		Colombo Port City Development (USD 1500M)	Kandy North Pathadumbara Water Supply Project (USD 190M)	Norocholai Power Station (USD 1300M)				
Sri Lanka				Hambantota Port Development (USD 2000M)	Moragahakanda Irrigation Development Project (USD 1100M)					
				Mattala International Airport (USD 240M)	Kurunegala Water Supply Project (USD 79M)					
				Colombo International Container Terminals (USD 390M)						
Uganda	Entebbe-Kampala Highway (USD 480M)		Mbale Industrial Zone (USD 500M)				Karuma and Isimba Hydroplants (USD 2300M)			
			Dubai Traders Market ("Market", part of the Jebel Ali Free Zone ("JAFZA") (USD 2400 M)							
United Arab Emirates			China-UAE Industrial Capacity Cooperation Demonstration Zone (USD 1600M)							
			Vegetable Basket (USD 1000M)							

PROJECT SECTOR									
COUNTRY	Roads/Bridges	Railway	Industry	Other Infrastructure	Water Supply	Fossil Fuel Power Plants	Hydropower	Wind	Solar
Uzbekistan	China - Kyrgyzstan-Uzbekistan road corridor (USD700M)	China - Kyrgyzstan-Uzbekistan railway (USD 4500M)	Medium-size Cities Integrated Urban Development Project (USD 100M)	Agriculture Uzbekistan: Rural Infrastructure Development Project (Previously: Prosperous Villages Project) (USD 82M)	Karakalpakstan and Khorezm Water Supply and Sanitation Project (USD 430M)	Navoi Thermal Power Plant (USD 1200M)			Solar PV projects (USD 4000M)
	Dushanbe - Uzbekistan Highway (USD 90M)	Angren - Papur railway line (USD 450M)	National Bank for Foreign Economic Activity of the Republic of Uzbekistan COVID-19 Credit Line Project (USD 200M)		Bukhara Region Water Supply and Sewerage Phase II (BRWSSP II) (USD 270M)	Sirdarya 1,500MW CCGT Power Project (USD 100M)			
	Tashkent Ring Road Project (USD 200M)	Bukhara-Miskin-Urgench-Khiva Railway Electrification Project (USD 100M)			Bukhara Region Water Supply and Sewerage (BRWSSP) (USD 380M)	Oil and gas projects in cooperation with JSC "Uzbekneftegaz" (USD 580M)			
Vanuatu	Bukhara Road Network Improvement Project (Phase 1) (USD 170M)								
	Malakula island highway (USD 47M)		Fishery Development (USD 8M)	National Stadium (USD 36M)					
Vietnam			Cat Linh-Ha Dong metro line (USD 870M)	Luganville Wharf project (USD 93M)					

Table 2. Summary overview table of BRI investments in 18 GGGI Member States

PROJECT SECTOR (amounts in million USD)										
COUNTRY	Roads/ Bridges	Railway	Industry	Other Infrastructure	Water Supply	Fossil Fuel Power Plants	Hydropower	Wind	Solar	
Cambodia	2,000		1,300	2,500		3,600		200	190	9,800
Colombia	1,800	690	14	200	1000				580	4,300
Ethiopia	490	4,500		1,200			450	720		7,400
Fiji	140			330						470
Jordan			24			2,100				2,100
Kiribati	20		8	1						29
Lao PDR		6,000	10,000							16,000
Mongolia			30,000							30,000
Morocco		10,000	26,000				5,100			41,000
Papua New Guinea	3,500		330		32					3,900
The Philippines	500	2,800						500	2,000	5,800
Qatar				1,500						1,500
Sri Lanka	1,000	280		3,900	1,400	1,400				8,000
United Arab Emirates			5,000							5,000
Uganda	480		500				2,300			3,300
Uzbekistan	1,100	5,100	300	80	1,100	1,900			4,000	13,000
Vanuatu	50		8	130						190
Vietnam		870								870
	11,000	30,000	74,000	11,000	2,500	9,000	7,800	1,400	6,800	150,000

### Case Studies of BRI in GGGI Member States

With the assistance of GGGI country teams, the authors conducted interviews with government officials responsible for overseeing BRI projects in four countries: Ethiopia, Colombia, Lao PDR, and Sri Lanka. Drawing from the insights gathered during the interviews, this section will focus on case studies from Ethiopia and Colombia to examine the implementation

of BRI projects over the past decade.

#### *Ethiopia*

Ethiopia, located in the Horn of Africa, is the gateway to Africa, which determined its crucial role in Chinese collaboration and investment in the African continent, including the Belt and Road Initiative. Based on amicable bilateral relations since premodern times, Ethiopia and China have developed a sound and strong



win-win partnership, including comprehensive strategic cooperation among several sectors along BRI.

Sino-Ethiopian economic cooperation significantly contributes to the growth of the economy in Ethiopia, and the various infrastructural developments seen throughout the country are good manifestations in this regard. Ethiopia and China have undertaken fruitful cooperation in the fields of economy, trade, investment, infrastructure, and public health, among others. At the end of 2022, the stock owned by Chinese enterprises in Ethiopia reached US\$3.3 billion, ranking first in Africa (Liu Dianxun, Director General of CIPA).

China has proven to be an exceptional and supportive bilateral cooperation partner for Ethiopia, particularly in the realm of human capacity development. Over the past decade, China has been instrumental

in advancing the country’s human resource sectors by offering both short- and long-term training opportunities. Chinese financial aid provides critical support to the Ethiopian government during a period of significant expansion in transportation, electricity, and job opportunities, which also aligns with economic growth and facilitates increased exports to other nations.

The BRI has not only brought significant infrastructure developments in Ethiopia but has also played a pivotal role in fostering strong relationships with international organizations, including the African Union (AU). It also contributed to the sustainable development of Ethiopia. The following are examples of BRI projects that contribute their share in the low-carbon emission and green development path of Ethiopia.

Project Name	Green Growth Contribution
<b>Green Railway</b>	
<p>1.1 Addis-Djibouti Standard Gauge Electric Railway Line</p> <p>It was constructed with a total investment of \$4bn. The Ethiopian sections cost \$3.4bn, 70% of which was provided by China’s Exim Bank and 30% by the Ethiopian government.</p>	<p>The entire system of this network uses electricity (renewable green energy), which is much cheaper and more sustainable in the case of Ethiopia.</p> <p>Since the line is electrified, it is environmentally friendly (smaller carbon footprint) and helps the country reduce additional fuel oil imports for trucks and related additional noise and air pollution.</p> <p>The railway line gave an opportunity to plant tree seedlings in some sections of the corridor. The railway helped reduce carbon emissions by replacing less efficient modes of truck transportation and public buses, which could have a positive impact on public health and the environment, especially in urban areas.</p> <p>The Ethio-Djibouti Railway has been an important infrastructure project that has played a vital role in promoting green and sustainable development in Ethiopia and the region.</p> <p>The electric railroad has also attracted the development of other green infrastructure projects in the region, such as roads and ports (Mojo Green Logistics Hub).</p>
<p>1.2 The 34 km North South, East West Electric Light Railway Transit (LRT) Line of Addis Ababa</p> <p>Addis Ababa LRT is the first light railway in Africa built for 475 million U.S. dollars, with 85 percent of funding from the Export-Import Bank of China.</p>	<p>The LRT line is expected to reduce the annual greenhouse gas emissions from the transport sector to less than 9 tonnes by 2030.</p> <p>It shall provide transport services for over 15,000 people per one direction and 60,000 in all four directions, significantly reducing the need for diesel buses and taxis.</p> <p>It significantly reduces noise pollution generated by diesel cars.</p> <p>The LRT will continue to yield significant social, economic and environmental co-benefits by providing low-carbon, reliable and equitably accessible transport.</p> <p>The LRT is less land-intensive than conventional roads, which will decrease the burden on ecosystems.</p> <p>The city expects a decrease in particulate emissions that will reduce the incidence of heart and respiratory diseases.</p>

Industry Parks	
<p>Hawassa Industrial Park</p> <p>\$250 million, constructed by China Civil Engineering Construction Corporation (CCECC)</p>	<p>Hawassa is an eco-industrial park in Hawassa, Sidama Region, Ethiopia. Established on 13 July 2016, the park is a government-supported project focusing on manufacturing garments, apparel, and textiles.</p> <p>The park features a zero-liquid discharge (ZLD) facility, which minimizes environmental impact by treating and recycling wastewater. This enables companies to meet stringent environmental standards required by international markets, allowing them to focus on exports. As part of the treatment process, no pollution stormwater will be discharged directly into Hawassa Lake. At the same time, domestic wastewater will be treated and recycled for use in toilets and landscaped areas and water polluted by textile effluent will be treated and stored to meet the zero-discharge requirement.</p> <p>The park has also contributed significant efforts in the establishment of green park compounds by planting various tree seedlings and plants.</p>
Renewable Green Energy	
<p>Aysha II wind power project in eastern Ethiopia</p> <p>Eighty-five percent of the USD 257.3 million project is covered by the Exim Bank of China, while the remainder is covered by the national government.</p>	<p>Out of the 32 turbines installed at the Aysha II wind power project, 16 are fully operational, producing 32 Giga Watt Hours (GWh) of electricity.</p> <p>The renewable power project will feature 48 turbines with a total generating capacity of 120 megawatts (MW). It is in the Shenelle district of the Sitti zone of the country's Somali region, near the Ethiopia-Djibouti border, some 700 km east of the Ethiopian capital of Addis Ababa.</p> <p>The construction of the Aysha II was launched in June 2017 after the Export-Import Bank of China (China Exim Bank) approved the financing of 85 % of the USD 257.3-million project.</p>
<p>Qorile Village Solar Power Plant, Somali region</p>	<p>Nearly 6,000 people from more than 2,000 families in Qorile village near the project got access to clean electricity as the village was brightly lit.</p> <p>The Qorile Solar Power Plant can produce 325 KW of power. The four PV power stations built by a Chinese company were the earliest among Ethiopia's first batch of 12 off-grid solar power stations to be completed, put into operation, and bring light to the villages where the stations are located.</p> <p>The four off-grid PV power stations, including the off-grid PV power station in the Somali region, are located in remote areas of Ethiopia's east, southwest, and west. They were built by China Electric Power Equipment and Technology Co., Ltd. (CET), a State Grid Corporation of China subsidiary.</p>

Based on the response from the government of Ethiopia, the total investment in green projects in this survey sample is USD 5.2 Billion. It is also clear from the response that by far, the largest green investment in Ethiopia is through electric railway transportation projects, with a total estimated investment size of USD 4.5 Billion. Investments in renewable energy, mini-hydro, electric buses, electric cars, green industry, green buildings, waste management, and reforestation are fascinating areas to advance in Ethiopia.

Ethiopia and China place a high value on the outcomes of their bilateral collaboration and remain committed to sustaining their partnership within the framework of the BRI. Building upon past experiences, the Ethiopian government has expressed a growing interest in prioritizing green BRI projects for the future. In contrast to Ethiopia, the following case examines the situation in Colombia, which is outside the BRI and takes a somewhat different approach to its relations with China.

## Colombia

On Thursday, March 31, 406 new electric buses were inaugurated into service in a special ceremony in the Colombian capital Bogotá. These buses, manufactured by the Chinese electric vehicle manufacturer BYD, marked the company's second delivery after an initial order of 470 electric buses in 2020. With an existing fleet of 1,061 electric buses, BYD has ushered in a new era of sustainable urban transport in Colombia, which now hosts the largest electric bus facility in the world outside of China.

The introduction of these 406 electric buses is estimated to reduce 6.5 tons of fine particles and 17,000 tons of CO<sub>2</sub> emissions per year. When the entire fleet of 1,485 electric buses is in service, the reduction will be 94,300 tons of CO<sub>2</sub> per year, equivalent to taking 42,000 private cars off the road in Bogotá. In addition, the new vehicles come equipped with cutting-edge technology aimed at enhancing passengers' travel experience, including on-board cameras, USB ports for convenient mobile phone charging, GPS systems, and informative display panels. They also offer wheelchair-accessible platforms to support passengers with disabilities. In addition to protecting the environment and increasing passenger comfort and convenience, this project also created 1,100 green jobs in Bogotá. Clearly, BYD has significantly contributed to the clean energy transition in Colombia and has become the leading supplier of electric buses in Latin America (Transdev, 2022).

China's influence has been rapidly growing in Colombia. Unlike other countries examined in this report, Colombia has not yet become a signatory to the BRI, and thus, China's influence in Colombia is primarily channeled through Chinese corporations. Chinese companies have secured contracts for significant infrastructure, transportation, and mining projects in the country, with a notable shift to sustainable and green projects in recent years. For instance, the construction of Bogotá's first metro line was awarded to China Harbor Engineering Company and Xi'an Rail Transit Group. The construction of Medellín's Light Rail was entrusted to China Railway Construction Company. Moreover, Chinese technology firms such as

Huawei have expressed keen interest in contributing to Colombia's future 5G telecommunications development.

As Chinese goods have gained in popularity in Colombia, Colombian citizens have also been interested in fostering stronger Colombia-China relations. According to a public survey, approximately 60% of the population supports strengthening political ties with China, and more than 70% of Colombians hold a positive attitude towards Chinese technology and products. While it is true that some concerns exist within society regarding deeper partnerships with China, often stemming from a lack of knowledge and understanding of China and geopolitics, a promising future could be created through collaborative efforts between Colombia and China (CRA, 2023).

A collaboration between Colombia and China holds significant mutual benefits. China can provide investments, technical knowledge, and expertise to Colombia, while Colombia's agricultural products and rich mineral resources are inherently appealing to China. During the interview with the Ministry of Sustainable Infrastructure and Energy of Colombia, it was clear that Colombia remains highly interested in pursuing collaborative opportunities in the forthcoming years.

"Colombia is interested in attracting Chinese investment that promotes the development of infrastructure projects in Colombia. The president of Colombia, Gustavo Petro, met with his Chinese counterpart at the beginning of this year and agreed to work on the development of projects that contribute to the decarbonization of the economy, where the infrastructure and transportation sector plays a very important role in the transition to zero and low emissions technologies."

## Potential for the Green BRI in the Next 10 Years

The survey asked responding GGGI country teams to indicate which green project areas where China has significant experience and/or technology to offer would most likely be of interest (or prioritized by) the government of the GGGI Member State in question.

As the GGGI country teams are embedded in the government ministries of GGGI Member States (most often ministries of Environment, Finance and Planning) and are working on green growth implementation, GGGI country teams generally have an excellent understanding of the green priorities of their host

country governments.

The survey results for the key areas of green projects are summarized in Tables 3 and 4. Table 3 shows the likely priority for each green sector by country, and Table 4 summarizes this by sector.

**Table 3. Likely interest in future green BRI projects in GGGI Member States**

COUNTRY	PROJECT SECTOR														
	Renewable Energy—Solar PV	Renewable Energy—Wind	Energy Storage/ Grid Batteries	Mini-Hydro	Biogas	Electric Buses	Electric Cars	Electric Two-wheelers	Green Industry	Green Buildings	Energy Efficiency	Waste Management	Climate Smart Agriculture	Reforestation	Others
Burkina Faso	√	√	√						√	√	√	√	√	√	
Cambodia	√	√	√			√	√	√	√		√	√	√		
Colombia	√	√	√			√	√				√	√			
Côte d'Ivoire	√					√		√							
Ethiopia	√			√		√	√		√	√		√		√	
Fiji	√		√			√	√	√					√		
Jordan			√			√	√								
Kiribati	√		√			√	√	√					√		
Lao PDR					√	√	√	√	√	√	√	√	√	√	
Mexico	√		√			√	√	√	√	√	√				
Mongolia			√				√								
Morocco	√	√			√		√		√		√	√	√		√
Nepal			√			√	√	√		√					√
Papua New Guinea	√	√	√	√		√	√		√	√	√				√
The Philippines					√	√	√	√	√	√	√	√	√	√	
Qatar	√					√	√			√	√	√	√		
Senegal	√		√		√	√	√		√	√	√	√	√	√	
Sri Lanka	√	√	√	√	√	√	√	√	√	√	√	√	√	√	
Tonga	√		√			√	√	√					√		
United Arab Emirates			√			√	√		√	√		√	√		
Uganda	√			√	√	√	√	√	√	√		√		√	
Uzbekistan	√	√	√			√			√		√	√			
Vanuatu	√		√			√	√	√					√		

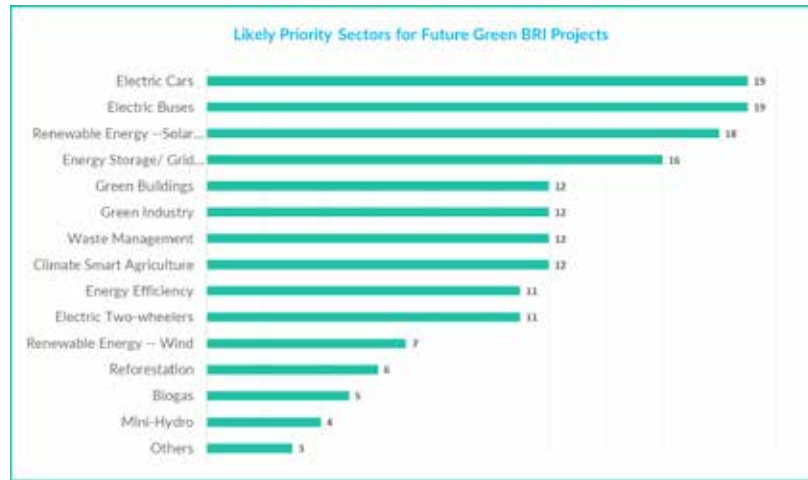


Table 4. Likely priority sectors for future green BRI projects in terms of countries expressing interest.

### Accelerating the Green BRI

GGGI is an intergovernmental organization that supports its Member States to accelerate their green transition. It does this primarily by embedding staff members in the ministries of finance, planning and environment of its Member States. GGGI country teams support the development of green policies and green investment projects. Supporting GGGI Member States to access green and climate finance is a key demand from its members that GGGI has managed successfully. To date, GGGI has helped mobilize over USD 10 billion in green and climate finance, and it currently has an investment project pipeline under development worth over USD 5 billion.

GGGI works with a range of financial institutions – from multilateral development banks to central banks, national development banks and private banks in many countries – but to date, it has not yet worked with Chinese banks. It is the experience of GGGI and other non-Chinese development partners that Chinese financial institutions tend to work with other Chinese stakeholders and bilateral counterparts, rather than with international organizations.

GGGI and Boao Forum for Asia Academy (BFA Academy) have started to plan a joint research project

to be implemented in 2024 that would focus on the following:

1. GGGI would work with selected GGGI Member States that have an active engagement in the BRI to assess and develop the potential for green BRI projects in these countries, i.e., an expression of the demand for green BRI projects in these countries.
2. BFA Academy would work with a group of BFA members that are Chinese financial institutions active in the BRI to understand the requirements and conditions these actors have for financing green BRI projects.
3. GGGI and BFA Academy would jointly facilitate an exchange between the selected GGGI Member States and BFA member financial institutions to further mutual understanding on ways and means to green BRI projects going forward.

An example of what we are looking for is already underway in Cambodia. In Cambodia, GGGI is implementing a project funded by the European Union called Switch Garment that aims to encourage Cambodian garment factories to adopt energy efficiency measures and invest in renewable energy. The project undertook energy audits in 50 out of the 700 garment factories in Cambodia. Based on these

energy audits, the project showed the economic benefits and financial feasibility of investments in energy efficiency and renewable energy. In addition to providing investment recommendations to the 50 factories, the GGGI project also set up an investment facility and is exploring with banks and other investors under what conditions they can make financing available. One of the potential investors currently engaging with GGGI to explore this investment opportunity is the Bank of China Cambodia. Along these lines, we imagine there will be scope for Chinese banks interested in investing in green projects to engage increasingly in GGGI Member and partner countries.

### Conclusions

While there is solid literature describing the potential of green BRI projects and providing recommendations and guidelines on greening the BRI, there is limited data available on the green share of BRI projects during its first ten years or the key green sectors in which the BRI invested.

To this end, the authors surveyed 47 GGGI country teams embedded in the governments of GGGI Member States and partner countries. Twenty-four valid survey responses were received, of which 18 reported significant BRI investments. Total BRI investments in these 18 countries were estimated by the authors, based on the survey and literature review, at USD 150 billion across 104 projects.

To assess the green share of BRI investments, the authors defined “dark green” (highly likely green) projects in two sectors: electric railway projects and renewable energy (solar and wind) and “light green” (potentially green depending on circumstances) in three sectors: hydropower, water supply and irrigation.

Of the USD 150 billion investment in 104 projects in 18 countries, 25% were in dark green projects (USD 38 billion) and another 7% in light green projects (USD 10 billion).

The survey also asked whether the country in question would likely prioritize green BRI investments in the coming ten years in key sectors where China has significant experience and technology to offer. All 24

responses indicated a high likelihood of interest in the government in green BRI investments, given the known priorities of each government. When asked which sectors would be of most interest, the highest response was noted for electric mobility (buses and cars), with 19 out of 24 countries likely interested, followed by solar energy (18) and energy storage/grid batteries (16).

To accelerate the green share of the BRI in the coming ten years, in line with expressed interest from the Chinese government, as well as the receiving developing and emerging economies, GGGI proposes to partner with the Boao Forum for Asia Academy in 2024 to undertake a detailed assessment of the demand for green projects in specific sample countries, together with an assessment of the interest in, and conditions under which, Chinese banks could invest in green BRI projects.

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## ANNEX A: Green BRI Survey in GGGI Member States Projects

Country	BRI project	Project value (amounts in million USD)
Cambodia	1) Phnom Penh-Preah Sihanouk Express Way	2000
	2) Sihanoukville Special Economic Zone	1300
	3) New Phnom Penh International Airport	1500
	4) New Siem Reap International Airport	880
	5) Morodok Techo National Stadium	150
	6) All coal power plants in Cambodia have been financed by Chinese banks/investors	3600
	7) Jinko Solar, Role (Solar panels provider), Province (Kampong Speu), installed capacity 60MW	76
	8) Risen Energy, Role (Developer), Province (Battambang), Installed capacity (60MW)	51
	9) China CACS Engineering, Role (EPC Contractor), Province (Kampong Chhnang) Installed Capacity 309 MW	58
	10) A Chinese firm is currently studying a 100MW wind farm in eastern Mondulkiri Province	200
Colombia	1) Quibdó Airport expansion	60
	2) Highway Mar 2 Urabá	6.5
	3) Third lane Bogotá-Girardot	1400
	4) Metro of Bogotá	250
	5) Expansion of the water treatment plant Bogotá (Tibitoc)	1000
	6) Highway Neiva - Santana	420
	7) Urabá Port	150
	8) 80 Railway Medellin	440
	9) Solar Power Plant Baraona	35
	10) 1485 electric buses for Bogotá (BYD)	14
	11) Solar project Cartago	280
	12) Solar project El Campano	220
	13) Solar Energy Central Los Llanos	50



Country	BRI project	Project value (amounts in million USD)
Ethiopia	1) The 756 km long Addis-Djibouti Standard Gauge Electric Railway Line	4000
	2) The 34 km North South, East West Electric Light Railway Transit (LRT) Line of Addis Ababa	470
	3) Electric-enabled industrial parks with waste management facilities	1000
	4) Transportation modernization in Addis Ababa	29
	5) Chinese-funded Aysha II wind power project in eastern Ethiopia	260
	6) Adama I and II wind power plants by Power Construction Corporation of China and China Geo-Engineering	460
	7) Genale-Dawa III multipurpose hydropower plant in the Oromia region, built by Gezhouba Group Co. Ltd	450
	8) The 76-km Addis Ababa-Adama toll expressway	450
	9) Addis Ababa Riversides Parks Development	900
	10) The African Union Conference Center and Office Complex	200
Fiji	1) Upgrade the Nabouwalu/Dreketi Road on Vanua Levuand	130
	2) Redevelopment of the Suva Civic Centre	10
	3) Construction of the Stinson Parade and Vatuwaqa bridges in Suva	6
	4) Medical training centre and emergency centre at Navua Hospital	6
	5) Wanguo (WG) Friendship Plaza will be the tallest building	75
	6) Komave resort complex (under development)	240
Jordan	1) The Attarat oil shale power plant project	2100
	2) A growing number of EVs from China are available in the Jordan market	24
Kiribati	1) Improvement to South Tarawa Transport Network	20
	2) Agriculture Project (USD 3.3M)	3
	3) Recreational Park South Tarawa	1
	4) Kiritimati Island Copra Mill	5
Lao PDR	1) Lao China Railway	6000
	2) Vientiane Saysettha Development Zone	500
	3) Boten Special Economic Zone	10000
Mongolia	1) China-Mongolia- Russia economic corridor	30000

Country	BRI project	Project value (amounts in million USD)
Morocco	1) Construction of Mohammed VI Tangier Tech City (by 2027)	10000
	2) Chinese - Moroccan industrial park	10000
	3) Development of an electric battery factory	6400
	4) Green Hydrogen project in the northern part of Morocco	5100
Papua New Guinea	1) High-priority economic road project	3500
	2) Agricultural industrial park	330
	3) Goroka water supply: Feasibility studies in November 2017. Diplomatic visit to Goroka in April 2018	32
The Philippines	1) Transportation and flood-control projects in Metro Manila	500
	2) Clark Solar PV, 100MW	2000
	3) Burgo Wind-Solar Powerplant 132 MW	450
	4) Railway projects	28000
Qatar	1) Hamad Port, 2022 World Cup main stadium	700
	2) Lusail Stadium, a five-star rating under the Global Sustainability Assessment System	770
Sri Lanka	1) Colombo Port City Development	1500
	2) Hambantota Port Development	2000
	3) Southern and Central Expressways	1000
	4) Kandy North Pathadumbara Water Supply Project	190
	5) Norocholai power station	1300
	6) Mattala International Airport	250
	7) Southern Railway Project	280
	8) Colombo International Container Terminals	390
	9) Moragahakanda Irrigation Development Project	1100
	10) Kurunegala Water Supply Project	79
UAE	1) Dubai Traders Market ("Market") as part of the Jebel Ali Free Zone ("JAFZA")	2400
	2) The construction of the China-UAE Industrial Capacity Cooperation Demonstration Zone	1600
	3) DP World signed an agreement with China for a USD 1 billion project in Dubai to import, process, pack and export agricultural, marine and animal products, to be known as the "Vegetable Basket."	1000

Country	BRI project	Project value (amounts in million USD)
Uganda	1) Karuma and Isimba Hydroplants	2300
	2) Mbale Industrial Zone	500
	3) Entebbe-Kampala Highway	480
Uzbekistan	1) China-Kyrgyzstan-Uzbekistan road corridor	700
	2) China-Kyrgyzstan-Uzbekistan railway will connect China, Kyrgyzstan and Uzbekistan with the ports of the Caspian Sea and Europe	4500
	3) Angren-Pap railway line	450
	4) Dushanbe - Uzbekistan Highway	90
	5) Tashkent Ring Road Project	200
	6) Navoi Thermal Power Plant	1200
	7) Karakalpakstan and Khorezm Water Supply and Sanitation Project	430
	8) Bukhara-Miskin-Urgench-Khiva Railway Electrification Project	100
	9) Bukhara Region Water Supply and Sewerage Phase II	270
	10) Sirdarya 1,500MW CCGT Power Project	100
	11) Medium-size Cities Integrated Urban Development Project	100
	12) Republic of Uzbekistan COVID-19 Credit Line Project	200
	13) Bukhara Road Network Improvement Project (Phase 1)	160
	14) Bukhara Region Water Supply and Sewerage (BRWSSP)	390
	15) Agriculture Uzbekistan: Rural Infrastructure Development Project	82
	16) Oil and gas projects in cooperation with JSC "Uzbekneftgaz"	590
	17) Chinese companies are actively involved in constructing Solar PV projects	4000
Vanuatu	1) National Stadium	36
	2) Luganville Wharf project	93
	3) Improving Living Standards: extension project of Malapoa College	1200
	4) Fishery Development: A joint venture fishery processing plant	8
Vietnam	1) Hanoi Metro -- Cat Linh-Hà Dong metro line in Hanoi	870
Total	104 projects	
* Projects in green are green BRI projects		

# The Development of Digital Economy along the Belt and Road

—Analysis based on the TIMG index

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**Abstract:** With the advancement of the Belt and Road Initiative and the accelerated construction of the “Digital Silk Road”, the region along the “Belt and Road” is becoming one of the most promising regions with the fastest growth of digital economy in the world. The analysis based on the TIMG Index finds that economies along the Belt and Road have significantly increased their digitalization since 2013, and have surpassed the rest of the world since 2017, at an accelerated pace. From a country perspective, Singapore, China, and the UAE are leaders of digital economy. In terms of development characteristics, a strong correlation between economic digitalization and economic base can be perceived among those economies along the Belt and Road, while a huge gap of digitalization is visible within these economies, revealing a trend of dynamic convergence. On specific dimensions, digital market expansion and digital infrastructure construction have achieved remarkable progress, digital governance has improved at a faster speed and digital technologies have been left behind. Regionally, economic digitalization along the Belt and Road is showing a strong diversity. East Asia is the regional leader, followed by Southeast Asia with a maturing digital economy. Central and Eastern Europe, West Asia, North Africa, CIS and South Asia are on a par with each other, with Central Asia performing the worst. Based on the findings above, this paper zooms in on the areas where economic globalization along the Belt and Road is challenged, and offers policy recommendations on promoting the high-

quality development of the Digital Silk Road under the cooperative framework of “Five Connectivity”, namely, policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bonds.

**Keywords:** the Belt and Road Initiative, economic digitalization, TIMG Index

The year 2023 marks the tenth anniversary of the Belt and Road Initiative. With the rapid development of digital economy, promoting economic digitalization along the Belt and Road and jointly building the Digital Silk Road has become an important component of the Belt and Road Initiative and a new source of opportunities for international cooperation. By 2022, China had signed memorandums of understanding with 17 countries on jointly building the Digital Silk Road, and established bilateral cooperative mechanisms on developing Silk Road e-commerce with 23 countries.<sup>1</sup> In the future, there is much room for improvement in terms of economic digitalization across the countries along the Belt and Road and great potential for cooperation. Developing digital economy as a new source of growth and bridging the digital gap will facilitate an inclusive digital economy<sup>2</sup>.

1 Source: State Council Information Office website: "China's 'Digital Silk Road' Creates New Opportunities", October 10, 2022, <http://www.scio.gov.cn/m/37259/Document/1731416/1731416.htm>.

2 Source: Chair's Statement of the Third Belt and Road Forum for International Cooperation, 18 October 2023, Beijing. <https://eng.yidaiyilu.gov.cn/p/0C8HP5H0.html>

Against this background, this paper focuses on the progress, trends and issues in economic digitalization of these countries. The structure is structured as follows: part I summarizes the overall trend and characteristics of economic digitalization of the countries along the Belt and Road based on the TIMG index; part II reviews the key progress of these countries in the areas of digital technology, digital infrastructure, digital market and digital governance since 2013; part III introduces the major outcomes, characteristics and issues of these countries in economic digitalization; part IV analyzes the gaps and challenges of economic digitalization along the Belt and Road; and part V explores new opportunities for the development of the Digital Silk Road under the cooperative framework of “Five Connectivity”.

### 1. Measuring the Trend of Economic Digitalization Along the “Belt and Road” Based on the TIMG Index

Since 2013, along with the new round of digital technology revolution driven by cloud computing, big data, artificial intelligence, economic digitalization along the Belt and Road has been fast advanced. This paper comprehensively assesses the dynamic evolution and development trend of economic digitalization along the Belt and Road based on TIMG index, which measures the maturity of digital economy of 106 economies in the period of 2013-2021 across four dimensions: digital technology, digital infrastructure, digital market and digital governance. (Ming Zhang et al., 2023). On the basis of TIMG index<sup>3</sup>, this paper selects 46 countries along the “Belt and Road” to analyze and evaluate their level of economic digitalization.

#### 1.1 Overall Trends

Economic digitalization along the “Belt and Road” has increased significantly since 2013. The average TIMG Index score of countries along the Belt and Road rose from 43.98 in 2013 to 58.16 in 2021 (Figure 1), at a rate of 32%, 11 percentage points higher than that of the sample countries not covered by the BRI. The median score of the TIMG Index for countries along the Belt and Road increased from 44.46 in

2013 to 59.47 in 2021 (Figure 2), up by 34%, which is also 11 percentage points higher than that of the sample countries not covered by the BRI. Since 2017, economic digitalization along the Belt and Road has accelerated further. The countries along the Belt and Road have surpassed those sample countries outside the BRI in terms of average score, and have secured a leading position further ahead of their peers with regard to median score. (Figure 1 and figure 2).

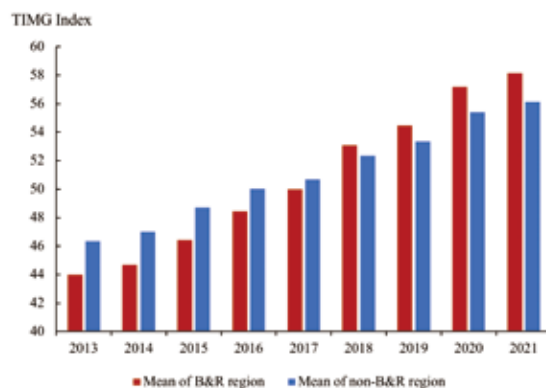


Figure 1 Changes in the average value of the TIMG index for countries along the Belt and Road

Source: Compiled by the author.

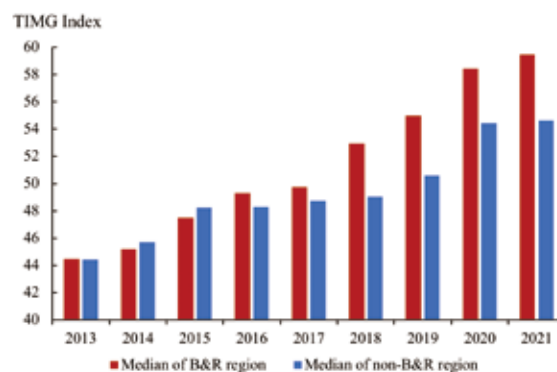


Figure 2 Changes in the median value of TIMG index for countries along the Belt and Road

Source: Compiled by the author.

#### 1.2 Country Rankings

Table 1 ranks the 46 countries against the TIMG Index. Singapore leads all the countries in terms of maturity of digital economy, followed by China and the

3 Source: [http://ifb.cass.cn/newpc/zxsj/202306/t20230627\\_5663365.shtml](http://ifb.cass.cn/newpc/zxsj/202306/t20230627_5663365.shtml)

UAE. In 2021, the TIMG index scores of these three countries are 87.55, 81.42, and 76.18, respectively. Israel, Malaysia, India, Russia, Saudi Arabia, Turkey and Estonia are placed from the 4<sup>th</sup> to the 10<sup>th</sup> on the list.

**Table 1 TIMG index for countries along the Belt and Road, 2021**

Ranking	Nation	TIMG Index	Ranking	Nation	TIMG Index
1	Singapore	87.55	24	Vietnam	59.39
2	China	81.42	25	Slovakia	58.79
3	UAE	76.18	26	Serbia	58.46
4	Israel	75.91	27	Kazakhstan	58.42
5	Malaysia	74.03	28	Ukraine	58.33
6	India	72.17	29	Bulgaria	58.24
7	Russia	71.43	30	Azerbaijan	55.42
8	Saudi Arabia	70.46	31	Croatia	54.95
9	Turkey	70.13	32	Egypt	54.93
10	Estonia	68.88	33	Kuwait	53.57
11	Poland	67.86	34	Iran	52.43
12	Indonesia	66.41	35	Georgia	50.54
13	Czech Republic	65.83	36	Pakistan	48.63
14	Lithuania	65.24	37	Moldova	47.00
15	Thailand	63.77	38	Armenia	46.73
16	Cyprus	62.64	39	Sri Lanka	46.46
17	Greece	61.55	40	Albania	45.71
18	Hungary	61.18	41	Bangladesh	45.30
19	Slovenia	60.98	42	Montenegro	44.27
20	Latvia	60.47	43	Lebanon	38.62
21	Romania	60.43	44	Kyrgyzstan	35.95
22	Philippines	60.15	45	Laos	26.70
23	Bahrain	59.55	46	Yemen	12.21

Source: Compiled by the author. The regional ranking refers to the ranking of the 46 sample countries along the Belt and Road in the TIMG Index. The global ranking refers to the ranking of the 106 countries covered by the TIMG Index. The principle also applies to the sections below

### 1.3 Typical Characteristics

Countries of the BRI have three characteristics when it comes to digitizing their economies.

**Firstly, there is a correlation between economic digitalization readiness and economic base.** This article examines the economic correlation of the TIMG index of the countries involved in the BRI. The results show that the correlation coefficients between the TIMG index and per capita income, economic size, and financial development of sample countries are 0.63, 0.58, and 0.42, respectively. This shows that the correlation between the TIMG index and per capita income is the strongest, followed by economic size and financial development, indicating that the more economically advanced a country is, the higher its per capita income, and the maturer its financial system, the more its economy will be digitalized. However, the digital economic development reflected by the TIMG index has a weak dependence on a country's total population. The correlation coefficient between the TIMG index and the population of the sample countries is only 0.18. This can be attributed to a high level of knowledge and technology content in digital economy. Human capital is more important than population size for digitalization. Therefore, the digital economy enjoys great potential in those under-developed but populous regions. In order to advance the digital economy, a country also needs to increase the employability of its workforce.

The article presents scatter plots between TIMG index and economic size as well as per capita income in countries of the BRI (Figure 3 and Figure 4). China, India, and Russia are large economies at a digital level commensurate with their economic size. Some countries, like Singapore, the UAE and Malaysia, are not advantageous in terms of economic size but are digitally advanced in economy after overcoming the path dependence. The TIMG index scores and per capita income of countries such as Singapore, the UAE and Israel are in the leading position among the countries along the Belt and Road. China, Thailand, Indonesia, and India are at a moderate level of per capita income but have higher TIMG scores than those countries at a similar level of per capita income.



Figure 3 Correlation between TIMG index and economy size

Note: Compiled by the author. TIMG Index and Economic Size Indicators are averaged over the period of 2013-2021.

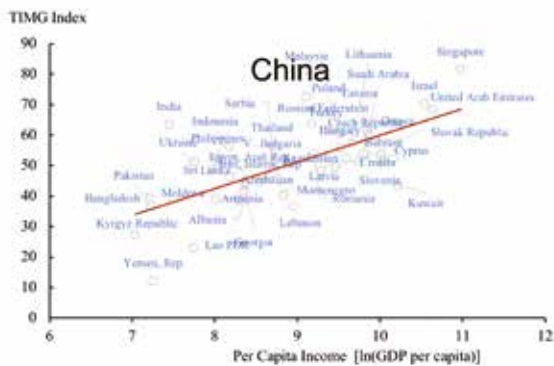


Figure 4 Correlation between TIMG index and per capita income

Note: Compiled by the author. TIMG Index and Per Capita Income Indicators are averaged over the period of 2013-2021.

Secondly, an obvious gap exists among the countries along with the Belt and Road when it comes to economic digitalization. According to the standards of the World Bank, the selected 46 countries along the Belt and Road include 18 high-income countries, 16 upper-middle-income countries, 11 lower-middle-income countries, and one low-income country. In view of the correlation between economic digitalization and economic development level, this article presents the average level of TIMG index for countries along the Belt and Road by different income groups. (Figure 5).

Overall, the average TIMG index reveals a decline curve from high-income countries to upper-middle-

income countries, lower-middle-income countries, and further to low-income countries, scoring 65.11, 58.5, 50.46 and 12.21 respectively in 2021. From the perspective of dynamic changes, the TIMG index of high-income countries, upper-middle-income countries, and lower-middle-income countries has increased steadily since 2013, reflecting an upward trend of economic digitalization. Between 2013 and 2021, lower-middle-income countries reported the highest growth rate of 42.87%, followed by upper-middle-income countries and high-income countries respectively at 33.28% and 27.67%. This indicates that middle-income countries, especially lower-middle-income countries, are quickly catching up by leveraging their late-mover advantage. It is important to note, however, that during the same period, the average TIMG index of low-income countries declined, at a rate as high as 14.33%. Low-income countries have fallen behind the other countries as they have encountered challenges in digitizing their economy.

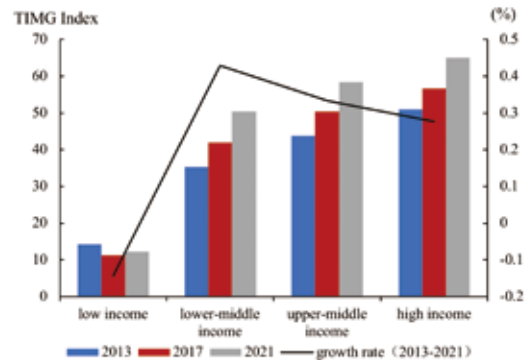


Figure 5 TIMG index for Belt and Road countries by income groups

Source: Compiled by the author.

Thirdly, economic digitalization along the Belt and Road is dynamically convergent, but with a narrowed gap. Currently there is a risk of widening the digital divide. Inspired by the methodology of Guo Feng et al. (2020), this paper measures the  $\sigma$ -convergence coefficients among the Belt and Road regions and non-Belt and Road regions, to analyze the dynamic convergence representing the differences of various countries in economic digitalization. The results show

that the convergence coefficient of the TIMG index among the Belt and Road regions decreased slightly from 0.33 to 0.32 in 2013-2021, while the coefficient among the non-Belt and Road regions fell from 0.48 to 0.4 over the same period. This may be attributed to the following factors: on the one hand, most of the countries along the Belt and Road are developing economies and there are no obvious disparities among these countries; and on the other hand, this trend reflects the need to further digitize the economy in the under-developed regions among the Belt and Road to guard against the risk of widened digital divide.

### 1.4 Drivers

TIMG index is built on four dimensions: digital technology, digital infrastructure, digital market and digital governance. These dimensions will be explored in the following text from both vertical and horizontal perspectives.

#### 1.41 Vertical Perspective

The paper starts with a vertical approach to the dynamic changes of the four dimensions of TIMG index, attempting to identify the main driving forces behind the rapid development of economic digitalization of the Belt and Road countries since 2013.

**Firstly, the expansion of digital markets and the construction of digital infrastructure has significantly promoted economic digitalization along the Belt and Road.** The average of digital infrastructure index along the Belt and Road rose by 47.49% from 46.38 in 2013 to 68.15 in 2021, while the number of digital market index along the Belt and Road increased by 46.94% from 37.52 in 2013 to 55.34 in 2021. The expansion of digital infrastructure and the rapid development of digital markets are powerful drivers of economic digitalization in these regions.

**Secondly, digital governance has played an increasingly important role in economic digitalization along the Belt and Road.** The average of the digital governance index along the Belt and Road has increased 21.94% from 50.54 in 2013 to 61.63 in 2021. Especially since 2018, the digital governance index has moved up at a faster pace, and countries have actively developed and implemented

digital governance policies on data security and digital regulation to accelerate the building of digital governments.

**Thirdly, digital technology along the Belt and Road is developing relatively slowly.** The digital technology index has only increased 14.56% from 41.47 in 2013 to 47.51 in 2021, which is lower than that of other sub-indexes. On the one hand, digital technology in the region is not competitive globally, and few countries have established strong innovation capabilities. On the other hand, technological restrictions and technical barriers imposed by the United States and Europe have stopped the spillover effect of technological advances. As a result, digital divide is more pronounced in digital technology than in digital markets and digital infrastructure.

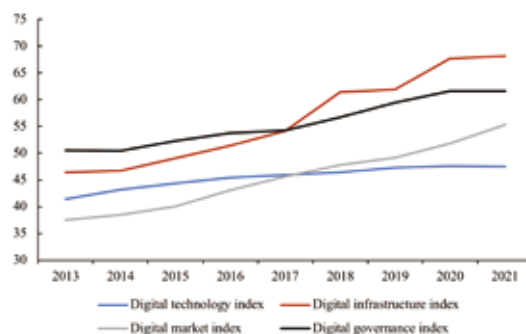


Figure 6 TIMG index for Belt and Road countries by income groups

Source: Compiled by the author.

#### 1.42 Horizontal Perspective

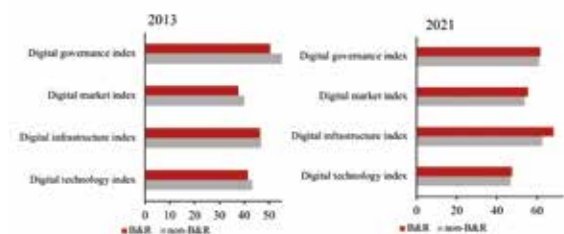
Now, this paper will continue to comparatively analyze the four dimensions among the countries covered/not covered by the BRI from a horizontal perspective.

In 2013, the non-Belt and Road regions were ahead of the Belt and Road regions across all four dimensions: digital technology, digital infrastructure, digital market and digital governance (Figure 7). In particular, the average score of Belt and Road regions in digital governance, digital market and digital technology was 8.48%, 6.46% and 4.27% lower respectively than that of their peers outside the BRI.



Meanwhile, the Belt and Road regions performed slightly worse than their counterparts on the dimension of digital infrastructure.

However, the situation changed significantly in 2021. The BRI regions surpassed the non-BRI regions across all dimensions of economic digitalization (Figure 7). Notably, the digital infrastructure index of the BRI regions went up remarkably and reached 68.15 in 2021, 8.85% higher than the other regions. The digital market index and digital technology index of the BRI countries were also 2.65% and 1.32% higher than those of the non-BRI countries. Digital governance was also improved at a fast pace in BRI countries which were slightly ahead of the other countries in terms of the digital governance index.



**Figure 7 TIMG index for Belt and Road countries by income groups**  
Source: Compiled by the author.

## 2. Dimensional Progress in Economic Digitalization Along the Belt and Road

Based on the above analysis, this paper will delve into the progress of the countries along the Belt and Road on four dimensions: digital technology, digital infrastructure, digital market, and digital governance.

### 2.1 Digital technology

In recent years, countries of the BRI have actively promoted the progress of digital technology as a stronger boost to their economic transformation. Among the top 20 countries of the BRI in terms of the Digital Technology Index (Table 2), Singapore ranked No. 1 in the Belt and Road region in 2021, with a score of 80.84. Israel and China ranked No. 2 and No. 3 in the region with scores of 75.53 and 74.17 respectively. The remaining top 10 countries were Malaysia, the UAE, Russia, Saudi Arabia, Estonia, Slovenia and

Turkey. Their key progress is listed as follows:

**Table 2 Top 20 countries along the Belt and Road in Digital Technology Index**

Regional Ranking	Global Ranking	Nation	Digital Technology Index (2021)	Digital Technology Index (2013)
1	6	Singapore	80.84	77.55
2	10	Israel	75.53	69.82
3	15	China	74.17	65.16
4	21	Malaysia	66.75	61.87
5	24	UAE	63.40	53.82
6	25	Russia	61.66	54.69
7	28	Saudi Arabia	59.37	52.42
8	29	Estonia	58.54	53.41
9	30	Slovenia	58.54	53.07
10	31	Turkey	58.45	51.96
11	32	India	58.29	54.01
12	33	Czech Republic	58.24	52.92
13	34	Greece	57.32	49.32
14	36	Ukraine	55.80	48.44
15	38	Lithuania	54.51	53.02
16	39	Poland	52.35	49.23
17	40	Latvia	50.87	44.28
18	41	Indonesia	50.65	46.18
19	43	Iran	48.23	41.54
20	44	Cyprus	47.71	45.94

Source: Compiled by the author.

**Firstly, they have expanded human capital and increased digital literacy.** An increasing number of countries in the region are placing emphasis on the cultivation of digital talents and on the development of human capital by reforming the curriculum, strengthening skills training and encouraging international exchanges. So far, digital talents are still concentrated in a minority of countries such as Israel, the United Arab Emirates, Singapore and China, and the education and training system for digital talent development is still at its early stage. In May 2021, Tsinghua University hosted the “Dialogue on

the Education of Digital Trade Talents Along the Belt and Road” and discussed the issue of collaboratively cultivating and educating international and interdisciplinary talents in the process of building the Belt and Road, together with representatives of international organizations, academic leaders and business executives.

**Secondly, they have increased investment in digital technology and facilitated the commercialization of digital technologies.** In recent years, countries involved in the BRI have significantly increased their investment in digital technology and have made a number of technological achievements. For example, China has become the world’s second largest R&D investor, spending more than 3 trillion yuan on R&D activities in 2022. Israel is one of the most innovative countries in the world and a leading country when it comes to industry-academia cooperation. According to the 2020 Global Innovation Index report, Israel is leading the world in terms of density of R&D personnel and intensity of R&D spending.

**Thirdly, they have promoted regional cooperation in science and technology and made great efforts to break down technological restrictions and monopolies.** Digital technology has become a key area of international competition. In order to deter the rise of China, developed countries, led by the United States, have imposed scientific and technological restrictions on developing countries including China. The policies such as the “Infrastructure Investment and Jobs Act of the United States” and the “CHIPS and Science Act of 2022”, have hindered the global spillover of digital innovations. On the contrary, sci-tech cooperation along the Belt and Road is conducive to sharing digital dividends among the countries along the Belt and Road and breaking down the monopolization by developed countries. For example, China’s Beidou has dismantled technological monopoly of the GPS system and has been widely applied in countries involved in the BRI, including Pakistan, Myanmar, Laos, and Brunei.<sup>4</sup>

<sup>4</sup> Source: China.gov.cn: “China Beidou Serves the World”, June 23, 2020. [https://www.gov.cn/xinwen/2020-06/23/content\\_5521303.htm](https://www.gov.cn/xinwen/2020-06/23/content_5521303.htm)

## 2.2 Digital Infrastructure

In recent years, countries of the BRI have made great efforts in expanding digital infrastructure. Among the top 20 countries on the regional rankings of the Digital Infrastructure Index (Table 3), Singapore ranked No. 1 in the region, with its Digital Infrastructure Index score increased from 64.45 in 2013 to 90.53 in 2021, followed by China at the 2nd place and India in the 3rd position. Russia, UAE, Turkey, Egypt, Indonesia, Poland, and Vietnam ranked 4th to 10th in the region with digital infrastructure scores ranging from 79 to 87.

**Table 3 Top 20 countries in the Belt and Road Digital Infrastructure Index**

Regional Ranking	Global Ranking	Nation	Digital Infrastructure Index (2021)	Digital Infrastructure Index (2013)
1	2	Singapore	90.53	64.45
2	3	China	89.33	63.72
3	7	India	87.10	65.56
4	9	Russia	86.57	62.82
5	17	UAE	81.80	46.97
6	18	Turkey	80.96	59.97
7	19	Egypt	80.81	56.94
8	20	Indonesia	80.56	54.86
9	23	Poland	79.67	58.77
10	24	Vietnam	79.49	48.39
11	25	Saudi Arabia	79.43	47.63
12	29	Malaysia	76.72	65.82
13	31	Israel	76.42	54.28
14	34	Kazakhstan	75.96	44.65
15	36	Lithuania	75.41	49.59
16	38	Thailand	74.31	54.24
17	40	Greece	73.92	43.27
18	41	Hungary	73.91	60.36
19	42	Iran	73.81	37.52
20	43	Estonia	72.96	56.66

Source: Compiled by the author.

Recently, countries involved in the BRI have done a great deal of work in improving digital infrastructure. **On the one hand, a series of national policies have been introduced to support digital infrastructure development, while public spending has been increased in this regard.** Many underdeveloped regions along the Belt and Road do not have access to the Internet. To reverse the situation, many countries have launched policies to increase availability of network facilities and increased investment in 5G and other new-generation digital infrastructure. As a global leader in 5G, China is collaborating with BRI countries including Russia and Indonesia to develop and promote the use of this technology. At the end of 2019, Huawei from China signed 5G technical agreements with 11 telecommunication companies in the Middle East, including those in United Arab Emirates, Saudi Arabia and Kuwait.

**On the other hand, the Digital Silk Road provides historic opportunities and broad space for international cooperation in digital infrastructure.** Most of the countries along the Belt and Road are developing countries with a low starting point of economic development. They must fill a large funding gap before building digital infrastructure. In 2017, Chinese President Xi Jinping proposed the construction of the Digital Silk Road. Since then, to build connected digital infrastructure has become a new driver of facility connectivity, offering new opportunities for the BRI countries to expand digital infrastructure. At present, a number of submarine optical fiber cable projects, such as “Asia-Africa-Europe 1 (AAE-1)”, “Southeast Asia-Middle East-Western Europe 5 (SEA-ME-WE 5) “ and “Pakistan & East Africa Connecting Europe (PEACE)”<sup>5</sup> have been under development or in operation, which are expected to promote information and communication along the Belt and Road. Moreover, the Asian Infrastructure Investment Bank (AIIB) and the Silk Road Fund can also provide financing support for the development of digital infrastructure in these countries.

### 2.3 Digital Markets

In recent years, the digital market of the BRI

<sup>5</sup> The full name of the Peace Submarine Cable Program is Pakistan and East Africa Connecting Europe.

countries has expanded rapidly, with huge development potential. Among the top 20 countries along the Belt and Road in terms of Digital Market Index (Table 4), China is in a leading position in the region or even globally. China's digital market index (DMI) increased from 77.15 in 2013 to 95.57 in 2021, ranking 1st in the region along the Belt and Road. India and Singapore ranked 2nd and 3rd respectively, with a DMI of 84.2 and 81.31 in 2021, while Israel, Indonesia, Russia, Turkey, the Philippines, the UAE, and Malaysia ranked 4th to 10th in the region, with DMI scores ranging from 71 to 76 in 2021. At the other end of the spectrum, countries such as Moldova, Montenegro, Kyrgyzstan, Laos, and Yemen come last in the rankings. The development of the digital market of the BRI countries is highlighted in the following three areas.

**Table 4 Top 20 countries in the Belt and Road Digital Market Index**

Regional Ranking	Global Ranking	Nation	Digital Market Index (2021)	Digital Market Index (2013)
1	2	China	95.57	77.15
2	9	India	84.20	66.84
3	13	Singapore	81.31	66.23
4	19	Israel	75.55	60.67
5	21	Indonesia	74.52	53.81
6	22	Russia	74.12	61.53
7	23	Turkey	73.08	58.99
8	24	Philippines	73.04	49.61
9	26	UAE	72.37	55.63
10	27	Malaysia	71.71	56.24
11	28	Poland	71.23	50.01
12	33	Thailand	69.43	47.89
13	36	Czech Republic	66.29	46.58
14	39	Vietnam	65.01	37.26
15	41	Cyprus	64.82	40.28
16	42	Saudi Arabia	63.71	38.49
17	44	Romania	63.32	41.25
18	45	Hungary	60.09	43.86
19	46	Ukraine	58.17	45.99
20	48	Bulgaria	57.87	36.67

Source: Compiled by the author.

**Firstly, the base of digital consumers has been expanded, creating vast potential for the market.**

A large and young population, increased access to digital devices, digital lifestyle and continuously improved institutions have come together to drive the fast growth of digital market in the region. According to the International Telecommunication Union (ITU), the number of Internet users in the selected 46 countries along the Belt and Road exceeded 2.71 billion in 2021, pointing to a large market. Based on eMarketer calculations, countries of the BRI occupied six seats in the world's top 10 countries with fastest-growing e-commerce in 2022, and most of them are located in Southeast Asia and South Asia.

**Secondly, digital transformation has been accelerated with digital business models and digital companies.**

As digital technologies are used more widely, regional digital transformation has been accelerated by economic activities in agriculture, manufacturing, trade and commercial logistics, finance and education. As a result, digital economy and real economy has been further integrated. In China and India, active digital investment has given birth to a group of promising unicorns and shaped a variety of competitive business models centered on e-commerce, cloud computing and big data. With highly innovative, digital companies, countries like Israel and Singapore have established their global leadership in the fields of cybersecurity, fintech and digital currency.

**Thirdly, the frequent digital trade has shaped economies of scale in the cross-border digital markets.**

The countries involved in the BRI have a high-level of cross-border e-commerce transactions with each other, as evidenced by the deepened cooperation about digital trade between China and Singapore, Russia, Malaysia, India and Thailand.<sup>6</sup>The Belt and Road Initiative has provided a platform connecting the digital markets in various countries along the Belt and Road. It is conducive to achieving economies of scale and network effect across these countries. As they

<sup>6</sup> Source: Electronic Industry Publishing House, Chinese Institute of Electronics, China Industrial Internet Research Institute: "The Belt and Road" Digital Trade Index Development Report (2020)", September 2020. <https://ydyimap.phei.com.cn/platform/theBeltAndRoad/researchReport/detail.do?guid=7d309c1571ad4debb606c6dbf2d999fdf>

are making great efforts to cluster digital industries in their dedicated parks, a cooperative mechanism is gradually taking shape with regard to cross-border e-commerce. However, fragmented digital rules remain a challenge, calling for further improvement in policies and regulations that govern digital service taxation and cross-border data flow.

**2.4 Digital Governance**

Recent years saw greater efforts by the countries along the Belt and Road to improve digital governance. Among the top 20 countries in the regional ranking of the Digital Governance Index (Table 5), Singapore is a global leader in digital governance. In 2021, Singapore's digital governance index was 97.5, ranking 1st in both regional and global rankings. The UAE and Estonia came next, ranking 2nd and 3rd in the region, with Digital Governance Indexes of 87.12 and 86.44 in 2021. The countries ranked 4th to 10th in the regional rankings are Malaysia, Saudi Arabia, Bahrain, Lithuania, Israel, Slovenia, and Azerbaijan, with digital governance index scores ranging from 72 to 81. In 2021, China ranked 17th among the BRI countries in terms of digital governance. Countries such as Pakistan, Bangladesh, Laos, Lebanon and Yemen were the worst performers of the Digital Governance Index. Specifically, the countries along the Belt and Road have taken the following measures to improve digital governance:

**Table 5 Top 20 countries along the Belt and Road in Digital Governance**

Regional Ranking	Global Ranking	Nation	Digital Governance Index (2021)	Digital Governance Index (2013)
1	1	Singapore	97.50	94.51
2	9	UAE	87.12	76.83
3	11	Estonia	86.44	79.46
4	21	Malaysia	80.94	71.13
5	24	Saudi Arabia	79.33	71.11
6	25	Bahrain	78.15	72.32
7	27	Lithuania	76.17	67.51
8	28	Israel	76.13	72.42
9	30	Slovenia	73.67	65.28
10	32	Azerbaijan	72.69	49.21
11	34	Cyprus	71.23	57.77

Regional Ranking	Global Ranking	Nation	Digital Governance Index (2021)	Digital Governance Index (2013)
12	35	Czech Republic	70.49	57.90
13	36	Latvia	70.11	62.87
14	37	Kazakhstan	68.57	56.20
15	38	Poland	68.18	55.03
16	39	Turkey	68.05	52.46
17	41	China	66.61	47.70
18	43	Hungary	65.66	58.80
19	44	Slovakia	64.96	55.34
20	45	Bulgaria	64.70	51.15

Source: Compiled by the author.

**Firstly, countries have attached great importance to the development of economic digitalization strategies.** In recent years, the countries along the Belt and Road have introduced a wide range of policies to advance their digital agendas, including China's 14th Five-Year Plan for the Development of the Digital Economy, India's Digital India Programme, the UAE's Pioneers of the Digital Economy Initiative, and Saudi Arabia's Five-Year Plan for Digital Saudi Arabia.

**Secondly, countries have moved their governments online and created a favorable economic and institutional environment for economic digitalization.** On the one hand, countries along the Belt and Road are committed to building more effective digital governments by facilitating the digital transformation of governance. Singapore and the UAE are leading examples in the construction of digital governments, and they ranked 12th and 13th respectively in the e-government index rankings in 2022. On the other hand, countries of the BRI have introduced a large number of policies and regulations to improve the digital legal system in the areas of anti-monopoly, e-commerce, private information protection, and cybersecurity to create an enabling business environment for the digital economy.

**Thirdly, the Belt and Road Initiative has promoted digital cooperation and the harmonization of digital governance rules among regional countries.** The increasingly fragmented and

isolated digital rules in Europe and the United States have highlighted the necessity of the countries along the Belt and Road to collaborate digitally with each other. In 2017, "the Belt and Road" Digital Economy International Cooperation Initiative was launched to promote cooperation on international standards, establish a multi-level exchange mechanism, and jointly create a peaceful, secure, open, cooperative and structured cyberspace. Meanwhile, cooperation mechanisms such as the Initiative on Building China-ASEAN Partnership on Digital Economy and the Initiative on China-Arab Data Security Cooperation have been introduced successively. The coordination and improvement of digital governance rules and digital trade rules are important tasks for the next step.

### 3. Regional Characteristics of Economic Digitalization Along the Belt and Road

This part introduces the readiness, competitiveness and uniqueness of economic digitalization in major regions along the the Belt and Road.

**Table 6 TIMG index for major regions along the Belt and Road**

Region	Country	TIMG Index	Growth Rate
East Asia	China	81.42	28.36%
Southeast Asia	Singapore, Malaysia, Indonesia, Thailand, Philippines, Vietnam, Laos	62.57	29.73%
Central and Eastern Europe	Russia, Estonia, Poland, Czech Republic, Lithuania, Cyprus, Greece, Hungary, Slovenia, Latvia, Romania, Slovakia, Serbia, Ukraine, Bulgaria, Azerbaijan, Croatia, Georgia, Moldova, Armenia, Algeria, Montenegro	58.41	31.14%
West Asia and North Africa	UAE, Israel, Saudi Arabia, Turkey, Bahrain, Egypt, Kuwait, Iran, Lebanon, Yemen	56.4	30.86%
South Asia	India, Pakistan, Sri Lanka, Bangladesh	53.14	39.37%
Central Asia	Kazakhstan, Kyrgyzstan	47.19	61.11%

Note: Compiled by the author. TIMG Index averages for each region and country rankings within regions are based on 2021 scores.

### 3.1 Overview

East Asia leads the region in terms of overall economic digitalization (Table 6). TIMG index for East Asia was 81.42 in 2021, compared with 62.57 for Southeast Asia. CEE, WANA, CIS and South Asia were on a par with each other. The average TIMG Index score of CEE, WANA and South Asia was 58.41, 56.4 and 53.14 respectively in 2021. In contrast, Central Asia is a weak performer along the Belt and Road, with an average TIMG Index score of 47.19 in 2021.

All the regions along the Belt and Road have made rapid progress in digitizing their economy since 2013. With an improvement of more than 60% in the TIMG index, Central Asia has achieved brilliant outcomes in economic digitalization, largely driven by national policies, the Belt and Road Initiative and the base effect. South Asia has also performed well in terms of TIMG Index, with a growth rate of nearly 40% over the 2013-2021 period. In addition, the growth rate of Central and Eastern Europe, West Asia, North Africa, Southeast Asia and East Asia was around 30%.

### 3.2 East Asia

East Asia is a regional and global leader in economic digitalization, and has provided an indisputable driving force for economic digitalization in the regions along the Belt and Road (Figure 8). It has performed much better than the average of the regions along the Belt and Road, not only in the TIMG index, but also on the dimensions of digital market and digital infrastructure. China is a typical country in East Asia in economic digitalization. As an emerging market and a developing country, China has leveraged its advantages as a latercomer by increasing digital competitiveness, and has become a key player in the digital economy. In 2022, the output of China's digital economy reached 50.2 trillion yuan, accounting for 41.5% of its GDP and holding the second place in the world.<sup>7</sup> Meanwhile, developed countries represented by Japan and the ROK have remained global leaders in economic digitalization with brilliant performance in digital technology and digital governance. In 2022, they followed the United

States, China and Germany in terms of the total size of digital economy. Since China, Japan and the ROK are at an advanced stage of digital economy with unique advantages, their digital cooperation will bring huge potential and opportunities for the development of digital economy along the Belt and Road.

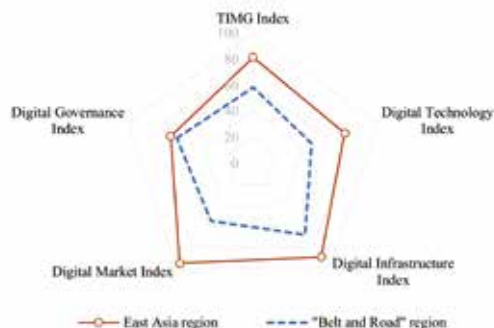


Figure 8 TIMG Index Levels in East Asia (2021)

Source: Compiled by the author.

**A huge market for digital economy.** China has developed a large base for digital consumers. By the end of 2022, the Internet penetration rate of China had risen from 45.8% in 2013 to 75.6% and the number of Internet users had reached 1.067 billion. The ROK and Japan are among the global leaders with the Internet penetration rate as high as 96.51% and 90.22% respectively and the Internet users as many as 50 million and 110 million respectively in 2020. Driven by the demand-side reforms and relevant policies, East Asia has developed a large number digital companies that are growing very fast. Digital companies are highly attractive for capital from around the world. China is second only to the United States if measured by the number of financed digital companies and by the scale of active unicorns.

**Advanced digital infrastructure.** Starting very early, both Japan and the ROK have put in place an extensive network of digital infrastructure. According to the statistics of the ITU, there were 223.57 mobile broadband subscribers and 160.88 mobile phone subscribers for every 100 residents in Japan in 2021 and the numbers for the ROK were 117.15 and 140.57 in the same year, compared with 104.77 and 121.51 subscribers in China. China is currently still falling

7 Source: State Internet Information Office, Digital China Development Report (2022), May 23, 2023. [http://www.cac.gov.cn/2023-05/22/c\\_1686402318492248.htm](http://www.cac.gov.cn/2023-05/22/c_1686402318492248.htm)

behind some developed countries, but it is growing very fast in the new infrastructure areas of data center and cloud computing. As of June 2023, China had built 2.937 million 5G base stations and completed the world's largest 5G-based security network. China, Japan and the ROK are all increasing their capital and technological investment in the construction of digital infrastructure. In August 2020, the ROK's Ministry of Science and ICT launched the Strategic Action Plan on Advancing the Development of Next-Generation Mobile Communication, intending to invest KRW 200 billion (or USD 180 million) in the development of core technologies and ultimately 6G service.

**Leading digital technologies.** The countries in East Asia highly value the innovation of digital technologies. China has built up advantages in scientific and technological outcomes. In 2021, China filed 35,300 patent applications and published 173,700 papers in the digital field (Zhang Ming, 2023), ranking first in the world, while Japan and the ROK demonstrated their leading edge in terms of human capital, digital literacy, commercialization of research results and innovation capability. In the ROK, the higher education enrollment rate has approached 100%, surpassing all the other countries in the world. Its intensity of R&D investment is also in a leading position, with the R&D expenditure accounting for 4.96% of the country's GDP, a ratio only next to Israel. Compared with most of the developing countries along the Belt and Road, East Asia is advantageous in terms of digital technology.

**Accelerated improvement in digital governance.** The ROK places digital economy high on the agenda and is advanced in digital governance. In 2022, the country got a score of 95.29 in the Digital Governance Index, ranking 3rd in the world. After years of sluggish growth, Japan picked up the speed of digital economy in 2019. It introduced the Digital Law, the Outline of New IT Policies in Digital Era and the Basic Act on Forming a Digital Society while developing and improving other laws and regulations related to digital economy. In recent years, China has also elevated digital economy to a strategic position to address the challenges and weaknesses. The

Chinese government has been optimizing its top-level design of digital economy by launching various policies including the Strategic Outline of the Development of the Digital Economy and the 14th Five-Year Plan for the Development of the Digital Economy. At the same time, it has also improved the legal and regulatory framework that governs data elements, cyber security and property protection. Moreover, as the initiating country and one of the main drivers of the Belt and Road Initiative and the Digital Silk Road, China is committed to strengthening international coordination and cooperation with regard to digital governance, promoting the shared benefits across the regions along the Belt and Road, and achieving the transformation and sustainable development of digital economy.

### 3.3 South-East Asia

Southeast Asia is a leading region in terms of digitalization of the economy along the Belt and Road. It is estimated that the share of the digital economy in the GDP of Southeast Asian countries as a whole is expected to increase from 1.3 per cent in 2015 to 8.5 per cent in 2025.<sup>8</sup> The Southeast Asian countries form different echelons when it comes to economic digitalization. The first echelon is Singapore, with a well-developed and balanced digital economy. The second echelon consists of countries such as Indonesia, Malaysia, and Thailand, which have seen rapid growth in the digital economy and are expected to benefit more from their huge potential. It is estimated that by 2025, Indonesia is projected to have a digital economy worth more than USD 130 billion, outperforming all the other countries in the region. The Thai government introduced the "Thailand 4.0" strategy in 2016, aiming to leverage innovative digital technologies to develop infrastructure, increase the value-added of products, promote the transformation and upgrading of the Thai economy, and ultimately realize a "Digital Thailand".<sup>9</sup> Vietnam's digital economy is also expanding rapidly, and its output value is expected to reach \$52 billion by 2025, accounting for about 1/6 of Southeast Asia's

<sup>8</sup> Source: People's Daily Online: "ASEAN Accelerates Development of Digital Economy," August 11, 2021. <http://world.people.com.cn/n1/2021/0811/c1002-32188589.html>

<sup>9</sup> Source: Xinhua Silk Road: Chinese firms' digital technologies help Thailand's post-epidemic economic recovery, <https://www.imsilkroad.com/news/p/469122.html>

digital economy.<sup>10</sup> The third echelon includes Laos and Cambodia, which have a weak foundation for the digital economy, and are still in the initial stage. Countries in each echelon have complementary advantages and make concerted efforts through the ASEAN platform.

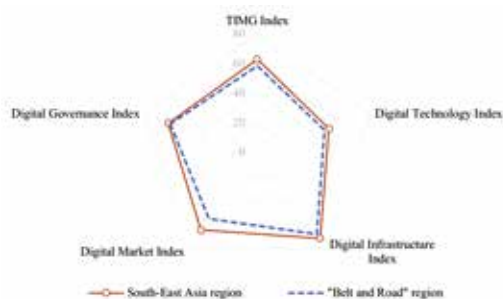


Figure 9 TIMG Index Levels in Southeast Asia (2021)

Source: Compiled by the author.

The TIMG index of Southeast Asia is higher than the average level of countries along the Belt and Road (Figure 9). Especially in the digital market, Southeast Asia has outstanding competitive advantages and great potential for development. First, Southeast Asia is densely populated with active young digital consumers, establishing a good foundation for digital market expansion. According to ITU statistics, the number of Internet users in Southeast Asia in 2021 exceeded 400 million. Among them, Singapore is a fully-fledged digital market with strong consumption power from its residents. Indonesia has the largest base of digital consumers, with about 170 million Internet users in 2021. Its penetration rate of the Internet was as high as 96.75%. Thailand, Vietnam, and the Philippines are important emerging digital markets in Southeast Asia. **Secondly**, e-commerce is an important driver of digital market expansion, and Southeast Asia is one of the fastest-growing regions in the global e-commerce market. Although the e-commerce penetration rate in Southeast Asia is less than 5% on average, it has been growing strongly in recent years, and its e-commerce market grew more than 35% in 2020.<sup>11</sup> Digital media, online gaming, online education, financial technology and other market segments are also growing fast in

10 Google, Temasek, Bain & Company: 'Southeast Asia E-Commerce Industry Report, 2020'.

11 Source: eMarketer database.

Southeast Asia amid the new opportunities after the pandemic. **And thirdly**, Southeast Asia is a region with frequent digital trade. According to statistics, more than half of e-commerce activities in Southeast Asia are finished across national border.<sup>12</sup> In 2018, the ASEAN Agreement on Electronic Commerce was signed to facilitate the cross-border e-commerce trade. It is noteworthy that China has developed a close partnership with ASEAN countries on cross-border e-commerce cooperation. For example, Alibaba's acquisition of Southeast Asian e-commerce retailer Lazada and Tencent's investment in Shopee, a mobile social shopping platform in Southeast Asia, are both examples of China's active engagement in its cross-border e-commerce cooperation with the region.

On the dimensions of digital infrastructure, digital technology and digital governance, Southeast Asia is on or slightly above the average of the countries along the Belt and Road (Figure 9). The Southeast Asian countries are accelerating to advance the transformation of digital economy. **In terms of digital structure**, Singapore is the data center of the Asia Pacific region, with low charges of Internet access, low costs of mobile devices and a high speed of Internet connection. Malaysia, Indonesia and Thailand also benefit from well-functioning Internet infrastructure. As Singapore and Thailand are grappling with frequent cyber attacks, a lot of countries have stepped up efforts to increase cyber security. With regard to digital technology, the countries in Southeast Asia are universally weak in scientific and technological output and innovation. **In the field of digital governance**, the Southeast Asian countries are actively upgrading their digital economy through some progressive programmes including the Services and Digital Economy Roadmap in Singapore, the Smart Thailand 2020 Framework in Thailand, Indonesia's Digital Roadmap 2021-2024, and the Digital Economy Blueprint in Malaysia.

### 3.4 Central and Eastern Europe

Economic digitization in the CEE region is in the

12 Source: Electronic Industry Publishing House, Chinese Institute of Electronics, China Industrial Internet Research Institute: "The Belt and Road" Digital Trade Index Development Report (2020)", September 2020. <https://ydyimap.phei.com.cn/platform/theBeltAndRoad/researchReport/detail.do?guid=7d309c1571ad4debb606c6bf2d999fd>



middle to high range along the Belt and Road, and the development is relatively balanced (Figure 10). The TIMG index of CEE and its performance on the dimensions of digital technology and digital infrastructure, is on a par with the average of the countries along the Belt and Road, its score on the sub-index of digital market is slightly below the average, and its score on the sub-index of digital governance is above the average, demonstrating a certain level of advantages. From a country perspective, Russia and Estonia are the pioneers of economic digitization in the CEE region, ranking 7th and 10th in the TIMG Index 2021 along the Belt and Road. In addition, countries including Poland, the Czech Republic, Lithuania, and Slovenia also have a moderately developed digital economy, with most of them ranked between 20th and 30th in the index. Countries like Montenegro, Algeria and Croatia are lagging behind in terms of economic digitization.

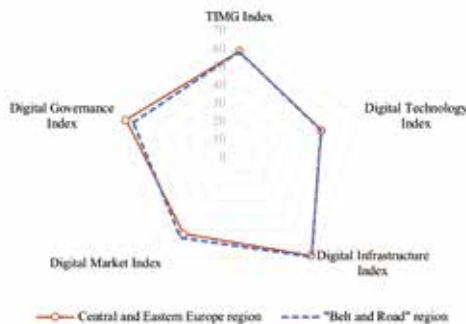


Figure 10 TIMG index levels in CEE (2021)

Source: Compiled by the author.

Leading countries such as Russia, Estonia, the Czech Republic and Poland perform moderately well in digital transformation. Russia has been vigorously building up its digital infrastructure. In Russia, there were 107.65 subscribers of mobile broadband services and 168.98 subscribers of mobile phones for every 100 citizens in 2021. Russia has steadily improved its cybersecurity and was ranked 5th in the global rankings on cybersecurity index by the ITU in 2020. Since it regained national independence, Estonia has launched “e-Estonia”, “X-Road” and “e-Residency” national digitalization projects, vigorously promoting the construction of digital infrastructure. Thanks to these efforts, the country has emerged as the “European

Silicon Valley” with a competitive digital economy. On a strong industrial foundation, the Czech Republic has made significant progress in the fields of artificial intelligence, automation and cybersecurity through the implementation of the “Industry 4.0” strategy, and has become a technological hub in the region. The COVID-19 pandemic in 2020 offered an opportunity for Central and Eastern European countries to advance digital transformation in such areas as e-commerce, online payment and online education. However, the region is still struggling with issues including uneven development between countries, rampant cybercrime and piracy. Businesses in the region are still under-represented in the wave of digitalization. There are still no internationally competitive digital enterprises. The availability of digital products and services remain to be increased.

Central and Eastern European countries are investing more resources in developing strategic policies and international partnerships on digital economy. Estonia listed “building a digital country” as one of the five major state policies upon its re-independence, and Belarus introduced the Decree on Developing the Digital Economy in 2017. In recent years, Russia has been improving its digital governance at a faster pace. In July 2017, the Russian government included the digital economy in the List of Strategic Priorities of the Russian Federation for 2018-2025, and developed and passed the Digital Economy of the Russian Federation program. In October 2019, Vladimir Putin approved the National Strategy for the Development of Artificial Intelligence for the Period up to 2030. In addition, the Czech Republic approved the National Recovery Plan in 2021, with the total investment amounting to 200 billion CZK (about \$9.3 billion), of which 20% was allocated to digital transformation.

Central and Eastern European countries are strengthening digital cooperation under the Belt and Road Initiative. The 2018 China-CEE Ministerial Conference on the Promotion of Economy and Trade adopted the China-CEE E-Commerce Cooperation Initiative. The 2019 China-CEE Conference on the Development of the Digital Economy was held in Chengdu, China. In 2021, Chinese President Xi Jinping participated in the China-CEE Leaders Summit and proposed to promote the construction of the China-

CEE Customs Information Center and strengthen the cooperation between the two sides in the digital economy. Chinese digital enterprises have an important presence in Central and Eastern Europe. High-tech companies such as Huawei, Hikvision, and Dahua Technology have set up branches and R&D centers in Hungary and Poland. In 2016, Wanhua and Huawei signed a strategic cooperation agreement to set up a European information and communication center in Hungary to promote the construction of smart manufacturing<sup>13</sup>.

### 3.5 West Asia and North Africa

As far as economic digitalization is concerned, West Asia and North Africa is in the middle echelon among the countries along the Belt and Road, but there are obvious differences within the region. From Figure 11, the TIMG index of West Asia and North Africa is comparable to the average level of all the countries along the Belt and Road, and slightly lower than the average level in the dimension of digital governance. From a country perspective, the UAE, Israel, and Saudi Arabia are relatively highly digitized and have certain advantages in digital technology and digital infrastructure, while countries such as Lebanon, Yemen, and Iraq lag significantly behind, and their development is highly unbalanced.

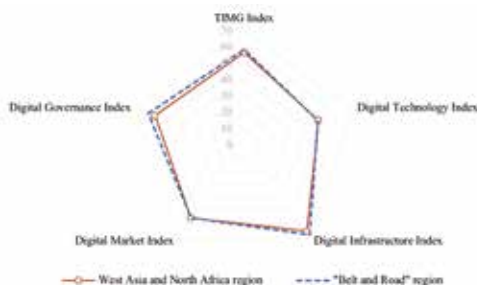


Figure 11 TIMG index levels in WANA (2021)

Source: Compiled by the author.

**On the one hand, leading regional countries such as Israel and the United Arab Emirates have**

**well-built digital infrastructure and advanced digital technologies.** Israel is a global digital technology powerhouse with a sound ecosystem to support digital technology innovation, including respectable digital literacy and strong capability in industry-academia collaboration. At present, Israel is a world leader in the fields of cyber security, artificial intelligence and chips. Taking the chip industry as an example, Israel is powerful in key areas such as chip design, raw materials and equipment manufacturing, testing and packaging, etc. The UAE is also encouraging digital technological innovation to create the “world capital of blockchain development”. So far, the Emirates Blockchain Strategy 2021 and Dubai Blockchain Strategy have been launched. In terms of digital infrastructure, GCC member states have more developed network facilities, and countries like the UAE have built extensive and high-quality next-generation communication infrastructure and attached great importance to cybersecurity. The UAE is also the first Arab country to introduce and use 5G network, and according to vpnMentor research, the UAE is leading the world in terms of the speed of 5G-based network.

**On the other hand, most of the countries in the region are still challenged by poor digital infrastructure, low Internet penetration, a huge gender gap, limited digital markets and lagging digital transformation.** The region’s economic digitization has been seriously hampered by a homogeneous economic structure and a volatile political situation. In recent years, a number of countries have formulated digitization-related strategies and policies one after another, placing increasing emphasis on the development of the digital economy. The Israeli government introduced the first resolution to accelerate the construction of digitalization in 2013. In 2015, Israel established the Digital Israel Authority to coordinate various sectors to promote the development of the digital economy. In 2017, the Knesset passed the Five-Year Plan for Digital Israel (2017-2022), which puts forward important tasks such as narrowing the digital gap in the economy and society, supporting digital industries, and building a smart and friendly government. The UAE is at the forefront of government digitization in the world, having launched a digital government program as early as 2001, and

13 Source : China Institute of International Studies (China), Institute of Foreign Affairs and Trade - IFAT (Hungary): ‘Status and Prospects of Digital Economy Cooperation between China and Central and Eastern European Countries’ , August 2019. <https://www.ciis.org.cn/zdogjqhbx/yjcg/202204/P020220415311399318832.pdf>

successively introduced the UAE Federal Digital Government Plan 2014, the “Smart Government” program, and the “Smart Dubai 2021” initiative. In 2021, the UAE’s e-government index score was 90.1, ranking 13th in the world.

Digital cooperation in West Asia and North Africa is deepening toward stronger regional synergies. The first Arab Digital Economy Conference (Abu Dhabi) in 2018 released the “Common Arab Vision for the Digital Economy” advocated by the Council of Arab Economic Unity (CAEU). Guided by this vision, 50 digital economy projects will be built in different Arab countries over the next 10 years.<sup>14</sup> In 2020, five countries - Bahrain, Jordan, Kuwait, Pakistan and Saudi Arabia - united to launch the Digital Cooperation Organization (DCO) to realize a digital future for all by growing the digital economy and leapfrogging with innovation.

### 3.6 South Asia

When it comes to economic digitalization, South Asia represents the average of the countries along the Belt and Road. India is the leading country in the region. According to the estimates by the Indian government, the digital economy is expected to increase to 20% of India’s GDP by 2025, creating \$1 trillion in value<sup>15</sup>. Other countries in South Asia, such as Pakistan, Sri Lanka and Bangladesh, are lagging behind in the digitization of their economies, and were ranked at the bottom of the TIMG Index in 2021.

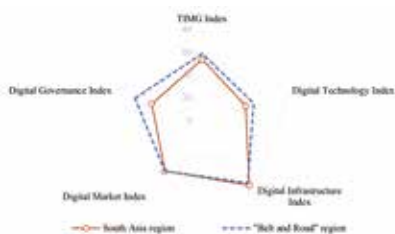


Figure 12 TIMG index levels in South Asia (2021)

Source: Compiled by the author.

14 Source: Wang Guangguang, “The State of Development of Sino-Arab Digital Economy Cooperation in 2020,” August 2021. [https://www.pishu.com.cn/skwx\\_ps/initDatabaseDetail?siteId=14&contentId=13387203&contentType=literature](https://www.pishu.com.cn/skwx_ps/initDatabaseDetail?siteId=14&contentId=13387203&contentType=literature)

15 Source: Chen Jun and Ding Botao, “Informatization Development of Countries Along the “Belt and Road” and the Construction of Digital Silk Road”, November 2021. [https://www.pishu.com.cn/skwx\\_ps/initDatabaseDetail?siteId=14&contentId=13362491&contentType=literature](https://www.pishu.com.cn/skwx_ps/initDatabaseDetail?siteId=14&contentId=13362491&contentType=literature)

In digital infrastructure, South Asia is slightly above the average of the countries along the Belt and Road. Along with the growth of mobile phone subscribers in India in recent years, the prices of mobile phones and network charges have fallen dramatically in the country. Meanwhile, India has also been improving its cyber security. As estimated by the ITU, India was the 10th best country in terms of cyber security in 2020. In the other South Asian countries, however, the availability and accessibility of digital infrastructure remain low due to a huge funding gap in the construction of digital infrastructure. In digital market, South Asia is at a comparable level with the average of those countries along the Belt and Road. The pool of digital consumers of India is the second largest in the world. By the end of 2021, there had been 646 million active digital users in India, offering huge market potential<sup>16</sup>. The main advantages of India are reflected in the active digital companies and its strong IT industrial foundation. However, the country is also challenged by uneven digital development and sharp disparities among regions and income groups. Since 2020 when the pandemic broke out, India and Pakistan have benefited from new opportunities and expanded their markets of e-commerce and mobile payment. In digital governance and digital technology, India is well below the average of the countries along the Belt and Road, in an obviously disadvantageous position. Despite the leading edge in digital economy-related research results, India has a lot of work to do in human capital development and digital skills scalability. Pakistan and Bangladesh are weaker performers in innovating digital technologies.

In recent years, India has accelerated its pace to digitalize its economy and improve its digital governance. On July 1st, 2015, Indian Prime Minister Narendra Modi announced the vision of Digital India that covers 9 development priorities including broadband construction, mobile connectivity, public Internet connection, e-governance, digital services, information disclosure, electronics manufacturing and IT. Pakistan set up the Special Technology Zones Authority (STZA) in 2021, aspiring to learn from the

16 Source: Nielsen, Bharat 2.0 Internet Study, May 2022. <https://www.nielsen.com/zh/news-center/2022/niensens-bharat-2-0-study-reveals-a-45-growth-in-active-internet-users-in-rural-india-since-2019/>

best practices of Shenzhen, China, to facilitate the cooperation among IT companies, R&D centers and higher education institutions and thus advance the program of Naya Pakistan. The Information and Communication Technology Agency (ICTA) of Sri Lanka announced in 2021 the “Digital for Everyone (D4E)” national initiative to promote digital technologies and build a science and technology based society. Digital programs in South Asia have also been supported by developed countries including the United States.

### 3.7 Central Asia

Central Asia has just started its journey of economic digitalization and is currently and generally below the average of the countries along the Belt and Road (Figure 13). The region is apparently disadvantageous in the dimensions of digital market and digital technology, far below the average of the BRI regions. However, as national governments have placed a higher premium on digital economy and the BRI has produced economic benefits in recent years, the region has made rapid advances in digital infrastructure and digital governance, thus narrowing the gap with the average of the BRI countries.

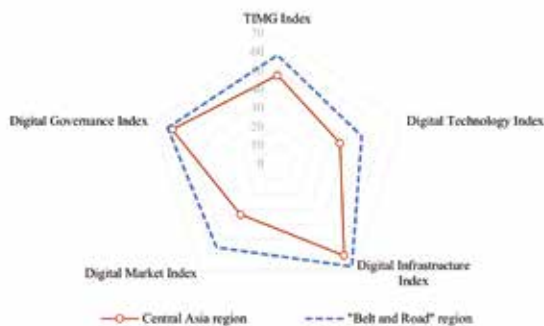


Figure 13 TIMG Index Levels in Central Asia (2021)

Source: Compiled by the author.

On the dimension of digital infrastructure, Central Asia is universally under-developed, except Kazakhstan which is in a relatively leading position. Poor economic performance and volatile situation are constraining the construction of digital infrastructure in the region. Today, half of the region’s population do not have access to the Internet and the Internet penetration

rate is lower than the global average<sup>17</sup>. In recent years, however, Central Asia has accelerated the construction of digital infrastructure. In Kazakhstan, the number of mobile broadband subscribers per 100 people has grown from 54.23 in 2013 to 86.77 in 2021. Currently, the country is testing its 5G network which will take a phased approach to deployment. In Uzbekistan, the Internet speed was raised from 80 Gbps in 2016 to 1200 Gbps in 2020, with access charges decreased by more than 90% and mobile communication penetration rate increased to 70%<sup>18</sup>. In 2020, Turkmenistan announced an investment of USD 10 million in building IT hubs in cities like Ashgabat<sup>19</sup>. Meanwhile, countries in Central Asia are attaching greater importance to digital governance. Kazakhstan launched the Digital Kazakhstan program and endorsed the National Plan on Digital Kazakhstan; Uzbekistan introduced the Presidential Decree on Taking Measures to Develop Digital Economy and the national strategy of “Digital Uzbekistan-2030”; Kyrgyzstan released the Concept of Digital Transformation of Kyrgyzstan for 2018-2023 and the roadmap of Digital Kyrgyzstan 2019-2023; Turkmenistan published the Concept for the Development of the Digital Economy in Turkmenistan in 2019-2025 and the Outline of the Development Plan for Digital Economy in Turkmenistan in 2021-2025; and Tajikistan endorsed the Concept of Formation of the Electronic Government in Tajikistan<sup>20</sup>.

### 4. Gaps and Challenges in Economic Digitization Along the Belt and Road

From the results of TIMG index, economic digitalization along the Belt and Road still has the following deficiencies and challenges.

17 Source: Chen Jun and Ding Botao, “Informatization Development of Countries Along the “Belt and Road” and the Construction of Digital Silk Road”, November 2021. [https://www.pishu.com.cn/skwx\\_ps/initDatabaseDetail?siteId=14&contentId=13362491&contentType=literature](https://www.pishu.com.cn/skwx_ps/initDatabaseDetail?siteId=14&contentId=13362491&contentType=literature)

18 Source: Long Guoren and Chen Shan, Review of Digital Economy Strategies of Central Asian Countries in 2020, September 2021. [https://www.pishu.com.cn/skwx\\_ps/initDatabaseDetail?siteId=14&contentId=12852029&contentType=literature](https://www.pishu.com.cn/skwx_ps/initDatabaseDetail?siteId=14&contentId=12852029&contentType=literature)

19 Source: Chen Jun and Ding Botao, “Informatization Development of Countries Along the “Belt and Road” and the Construction of Digital Silk Road”, November 2021. [https://www.pishu.com.cn/skwx\\_ps/initDatabaseDetail?siteId=14&contentId=13362491&contentType=literature](https://www.pishu.com.cn/skwx_ps/initDatabaseDetail?siteId=14&contentId=13362491&contentType=literature)

20 Source: Chen Jun and Ding Botao, “Informatization Development of Countries Along the “Belt and Road” and the Construction of Digital Silk Road”, November 2021. [https://www.pishu.com.cn/skwx\\_ps/initDatabaseDetail?siteId=14&contentId=13362491&contentType=literature](https://www.pishu.com.cn/skwx_ps/initDatabaseDetail?siteId=14&contentId=13362491&contentType=literature)

**Firstly, digital technology is not in a leading position in the world.** From a regional perspective, countries along the Belt and Road ranking high in the 2021 Digital Technology Index are mainly concentrated in East Asia, Southeast Asia, West Asia and Central and Eastern Europe. There are few countries leading the global ranking (Table 2). Lack of human capital, insufficient investment in R&D, and weak innovation capacity are common challenges for most of these countries. Their under-developed digital technology can be explained by an economic foundation not strong enough to support the development of digital technology in some countries, and by the restrictions some countries have imposed on the digital services of businesses from other countries to protect local players.

**Secondly, digital infrastructure remains to be enhanced in most countries.** In recent years, the countries along the Belt and Road have made rapid progress in digital infrastructure construction. Singapore and China are global leaders, and many countries in East Asia, Southeast Asia and West Asia have moved up significantly on the Digital Infrastructure Index rankings. In 2021, the UAE, Saudi Arabia, Kazakhstan and China jumped 38, 26, 25 and 18 spots respectively on the Digital Infrastructure Index global rankings from 2023. But overall, the countries along the Belt and Road are lagging behind their international peers in terms of digital infrastructure. Digital infrastructure in most of these countries are challenged by low connectivity, availability and accessibility, as well as uneven development.

**Thirdly, digital governance remains to be improved.** Among the countries along the Belt and Road, only Singapore, the United Arab Emirates and Estonia appeared in the top 20 on the global rankings of Digital Governance Index in 2021. In recent years, countries along the Belt and Road have made significant efforts in improving digital governance. China and the UAE have made significant progress in the global rankings of the Digital Governance Index in 2021, up by 18 and 11 places respectively from the level of 2013. Overall, digital governance in the countries along the Belt and Road still needs to be improved. Nearly

half of the countries are ranked outside the top 50 in the global Digital Governance Index. In the next step, these countries are advised to focus on improving their legal and regulatory framework, building a supportive business environment and creating e-governments.

**Fourthly, international cooperation on digital economy needs to be strengthened.** At present, international cooperation on digital economy among the countries along the Belt and Road is becoming more active, especially driven by China. However, these countries still have to overcome many challenges before establishing an international cooperation ecosystem on digital economy. On the one hand, global cooperation on digital economy is diverging. Developed countries and regions like the European Union, the United States and the United Kingdom are still the main participants and rule makers of the international cooperation on digital economy, while cooperation among the countries along the Belt and Road are impeded and threatened by western countries including the United States. Meanwhile, the countries along the Belt and Road are a focal point of digital competition. For instance, the United States and the ASEAN countries have strong partnerships on digital economy. Their cooperation among digital players is focused on the development of data centers and the operation of digital media, and their cooperation in the field of digital applications is mainly about the construction of smart factories and smart cities (Xiao Yingying and Zhang Jiangang, 2022). On the other hand, most of the countries along the Belt and Road that have established digital economy cooperation with China are latecomer countries. From the perspective of specific dimensions, there is much room for improvement in digital technology, digital infrastructure, digital market and digital governance, and it is necessary to further deepen cooperation by complementing each other with respective strengths and exploring new opportunities of cooperation.

## **5. Policy Recommendations for Building a High-quality Digital Silk Road Based on “Five Connectivity”**

The current situation and challenges of the digital economy along the Belt and Road should be considered in the process of building a high-quality

Digital Silk Road. Based on the framework of “five connectivity”, new opportunities should be explored in building such a Digital Silk Road to shape a new development model of the Belt and Road Initiative.

**Strengthening policy communication to promote cooperation in digital governance.** The increased international competition in digital economy has not only increased the supply of cross-border products and services, but has also resulted in digital barriers and digital divide. In this context, countries have gradually realized the necessity and urgency of strengthening international cooperation in digital economy and participating in the global governance of digital economy. At present, China is accelerating the establishment of digital governance partnerships with the countries along the Belt and Road.

Since China officially proposed the construction of the Digital Silk Road in 2017, the country has been expanding its cooperation with the countries along the Belt and Road in fields such as digital economy, artificial intelligence, nanotechnology and quantum computers, promoting the construction of projects in big data, cloud computing, smart cities and other fields, and driving the construction and innovative development of the Belt and Road. In 2023, China launched the Global AI Governance Initiative during the BRF III, calling for strengthening information exchanges and technological cooperation on the governance of AI, preventing risks, and developing AI governance frameworks, norms and standards based on broad consensus. China and relevant partners jointly launched the Beijing Initiative on the Belt and Road International Digital Economy Cooperation. China supports strengthened exchanges and cooperation on international cyberspace governance and law-based cyberspace governance.<sup>21</sup> Looking ahead, China can fully leverage its advantages in digital economy, and engage in international cooperation and governance of digital economy along the Belt and Road. In the principle of mutual benefit, a platform for international cooperation in digital economy can be built to explore a new approach to global digital governance. Besides, China's

21 Source: Chair's Statement of the Third Belt and Road Forum for International Cooperation, 18 October 2023, Beijing. <https://eng.yidaiyilu.gov.cn/p/0C8HP5H0.html>

comparative advantage in digital infrastructure and digital technology can be combined with the digital market of the host countries, so as to identify new space and new opportunities for international cooperation in digital economy (Chen et al., 2023).

**Increasing the connectivity of facilities to develop digital infrastructure.** The Belt and Road cooperation partners support to build and improve information infrastructure, namely regional communications, internet, satellite navigation, etc.<sup>22</sup> On the one hand, China's infrastructure construction is large in scale and high in quality. According to the Global Quality Infrastructure Index (“GQII”), China's overall infrastructure construction ranked second among 183 countries (regions) in 2021. In 2022, 79 Chinese companies were included by the Engineering News Record (ENR) in its list of the world's 250 largest international contractors<sup>23</sup>. On the other hand, the digital infrastructure is uneven among the countries along the Belt and Road. The digital infrastructure of most of these countries are lagging behind. With the rapid development of digital economy, deepening the construction and cooperation of digital economy infrastructure will be a new area for facility connectivity. In this context, China can leverage its competitiveness in offering high-quality infrastructure projects and its leading position in digital infrastructure to strengthen international cooperation on digital infrastructure along the Belt and Road, and accelerate the construction of new-generation digital infrastructure in such areas as artificial intelligence, 5G and data centers. While expanding the access to advanced digital infrastructure and narrowing the digital divide, great efforts should be made to improve the quality of digital infrastructure and enhance cyber security across borders (Wang et al. 2023).

**Facilitating the flow of trade to expand international markets.** The Belt and Road cooperation partners agree to further enhance trade and investment liberalization and facilitation, especially

22 Source: Chair's Statement of the Third Belt and Road Forum for International Cooperation, 18 October 2023, Beijing. <https://eng.yidaiyilu.gov.cn/p/0C8HP5H0.html>

23 Source: China Chamber of Foreign Contractors. <https://www.chinca.org/cica/info/22082511581411>

international trade documents digitalization, shipping trade digitalization. In the next stage, digital trade will become an important tool and trend for trade facilitation. One new direction of trade connectivity is to connect digital trade among the countries along the Belt and Road and participate in the formulation of international digital trade rules. On the one hand, China's vast market for digital consumption will encourage the countries along the Belt and Road to collaborate with China on digital trade. China can open up new avenues of trade by exporting goods through cross-border e-commerce. On the other hand, China can sign digital trade agreements with the countries along the Belt and Road to jointly make digital trade rules which are still open to discussions for improvement. As another example, the rules of digital economy are the basic orientation of China's new generation of trade rules which are focused on commerce and trade facilitation, with specific focus on commerce facilitation rules (Shen et al., 2022). As global trade rules shift toward the digitalization-based third generation of trade rules, China can rely on the advantages in digital market to accelerate the negotiation and cooperation on digital trade rules with the countries along the "Belt and Road".

**Promoting financial integration to optimize cooperation on digital finance.** Infrastructure investment has a low level of returns but faces a high level of risks. As the initiator of the Belt and Road Initiative, the Chinese government has either actively or passively become the leading funder of the initiative. Moreover, the Chinese state-owned enterprises have also invested in relevant projects, sparking the concerns of certain big powers about a change in the traditional geopolitical order. (Ge Tianren and Zhang Ming, 2021). As an important component of digital economy, digital finance can support the development of the Belt and Road Initiative at least in the following ways. On the one hand, digital finance leads to new models of cooperation. For example, Alipay has adopted a "local partnerships + technology empowerment" model in expanding overseas markets,

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24 Source: Chair's Statement of the Third Belt and Road Forum for International Cooperation, 18 October 2023, Beijing. <https://eng.yidaiyilu.gov.cn/p/0C8HP5H0.html>

and has developed 9 "local editions of Alipay payment systems" in Southeast Asian countries along the Belt and Road, thus integrating China and these countries into one system of digital and inclusive finance (Liu Ling et al., 2023). On the other hand, the new model of international cooperation in digital finance contributes to RMB internationalization by creating conditions for financial integration. Since 2018, China's central bank has adopted a new "three-in-one" strategy based on three pillars of "launching RMB-denominated crude oil futures, opening domestic financial markets to foreign institutional investors, and promoting the use of RMB in settling border trade and the trade along the Belt and Road". Driven by this strategy, the process of RMB internationalization has been once again accelerated (Zhang Ming, 2022). In 2019, the People's Bank of China joined the Multi-CBDC (m-CBDC) Bridge, a cross-border payments project which may lead to a digital currency-based international payment and settlement system other than the existing SWIFT system. These strategic moves are expected to provide new approaches to financial integration along the Belt and Road.

**Establishing stronger people-to-people bonds to grow the digital economy.** Strong people-to-people bonds serve as an important foundation of Belt and Road cooperation. In this regard, it is necessary to embrace the vision of equality, mutual learning, dialogue and inclusiveness among different civilizations, thus to continuously promote mutual understanding, respect and appreciation among different peoples, cultures and civilizations, and jointly build global network for inter-civilization dialogue and cooperation.<sup>25</sup> Some scholars have pointed out that the Belt and Road Initiative may exacerbate the confrontation with the United States and deepen the suspicion and resistance of countries along the route toward a rising China (Zhang Ming, 2015). In order to better promote the cooperation on digital economy between China and the countries along the Belt and Road, it is necessary to build bilateral (multilateral) mechanisms to enhance mutual trust. To increase the participating countries' understanding

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25 Source: Chair's Statement of the Third Belt and Road Forum for International Cooperation, 18 October 2023, Beijing. <https://eng.yidaiyilu.gov.cn/p/0C8HP5H0.html>

about the BRI is a key method to eliminate the risk of the United State and some BRI countries questioning the infrastructure investment of the BRI, and to reduce the hype about the so-called “China threat” and “China predation” (Ge Tianren and Zhang Ming, 2021). On the other hand, it is advisable to deepen the Joint Statement of Proposals on Strengthening Silk Road People-to-People Connectivity, promote exchanges and mutual learning by communicating the Chinese culture through online and offline cultural activities, mobilizing the Chinese chambers of commerce in the countries along the Belt and Road to pool together the power of overseas Chinese, and by providing more opportunities for students from these countries to study in China, especially those programs about digital economy. In this way, a positive atmosphere of public opinions and popular support will be shaped for the benefit of cooperation on digital economy between China and the countries along the Belt and Road.

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# ESG Investing in International Financial Centers under the Belt and Road Initiative

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After a decade of implementation, the Belt and Road Initiative (BRI) has provided fresh opportunities for global economic development. In particular, it has stimulated the sustainable development of economies along the BRI route. An international financial center indicates the presence of a highly efficient and modern financial market. It is a central economic city where the demand for all types of financial products and services can be effectively supplied and satisfied, and where financial institutions, regulatory bodies and professional service providers are highly concentrated. Such a center is a financial manifestation of a country's economic strength and prominence. A powerful and effectively functioning international financial center can meet the needs of national, regional and even global economic development. Furthermore, it plays a crucial role in the allocation of global resources.

International financial centers along the BRI route are key links in the BRI network. The BRI attracts investment projects to the international financial centers in BRI countries, where a significant number of institutional investors are present and connected

to their global peers. These investors manage assets worth over one hundred trillion dollars, and thus play a huge role in financing the BRI projects. International financial centers are also home to the world's leading financial institutions and third-party professional service providers, which provide specialized financial services and leading expertise for BRI projects.

The Environmental, Social, and Governance (ESG) investing concept reflects the continuous advancements in international financial centers. It is also highly aligned with the BRI principles, namely "extensive consultation, joint contribution and shared benefits", the concepts of open, green and clean cooperation, and the objectives of high standards, sustainability and better lives. In recent years, all BRI stakeholders have actively practiced the ESG concept and achieved significant results in green finance cooperation.

International financial centers are crucial in promoting ESG investing among BRI stakeholders. BRI countries differ from each other in development stage, economic structure, legal system, and regulatory system, among others. ESG investing remains largely in its infancy in most of these countries, and faces a number of potential obstacles down the road. For example, there is a lack of consensus on ESG development, a deficiency of supportive policies for ESG investing among stakeholders, and a lack of investing norms and analytical tools, which has caused

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difficulties in the reasonable and effective pricing of environmental and social risks. In this regard, international financial centers in BRI countries can mainstream ESG investing according to local conditions, promote ESG knowledge sharing among financial institutions, and strengthen capacity building for ESG investing, so that the financial industry can make innovative contributions to the BRI development.

This article will feature ESG investing ecosystem and ESG investing products, with a particular focus on representative international financial centers in the Middle East (Dubai, Abu Dhabi, Doha), Europe (Luxembourg, Frankfurt), and Asia (Shanghai, Hong Kong, Singapore) that are contributors to the Belt and Road Initiative. The aim is to present the experience and current development of various international financial centers as they adapt to globalization and

implement the ESG investing concept.

### 1. ESG Investing

ESG investing is the process of analyzing and evaluating non-financial factors such as environmental, social and governance that may affect the sustainability of a business, and making investment decisions accordingly. ESG investing has two main connotations. On one hand, it refers to financial institutions creating and developing ESG systems. And on the other hand, as the “blood” of economic activities and the vehicle of capital financing, financial institutions connect various economic actors through credit, direct investment or capital market operation, and produce an extensive impact on the environmental, social and governance development of enterprises in various sectors. The ESG investing ecosystem (Figure 1) has gradually taken shape with constant improvement.

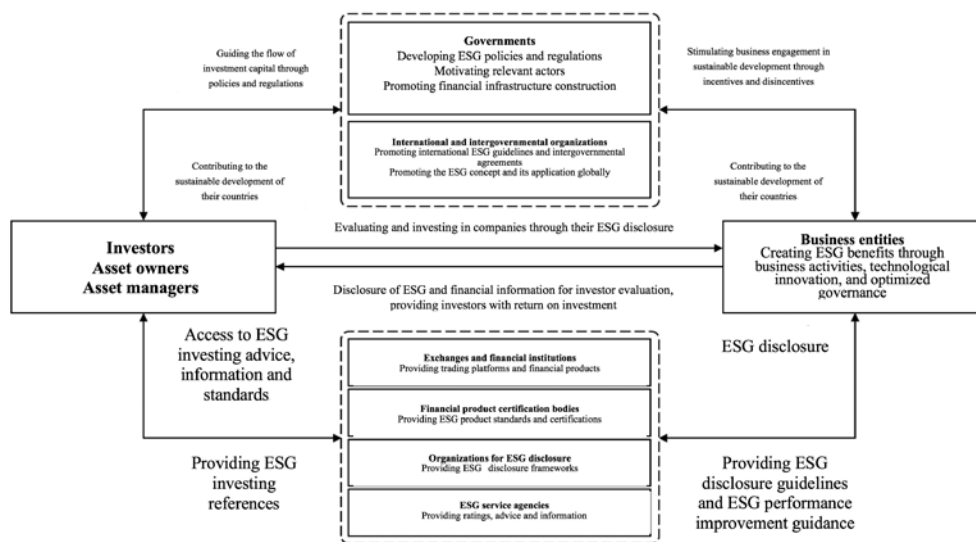


Figure 1 ESG investing ecosystem

ESG investing ecosystem mainly consists of five components, namely investment and financing entities, third-party professional agencies, market platforms, regulators, and non-governmental organizations. Investment and financing entities include asset

entrusting institutions/individuals, asset trustees, financial intermediaries and business entities. Third-party professional agencies include information disclosure service providers, rating agencies, data service providers, certification service providers, and

consulting and advisory firms that provide investment and financing entities with professional services for ESG investing such as information disclosure, rating, index compilation, and product certification. Market platforms refer to stock exchanges and emissions trading systems, among others. Regulators include relevant government authorities, central banks and other financial regulators. They are the rule makers and supervisors that participate in the ESG investing ecosystem, whilst maintaining certain exogenous decision-making power that can influence the development and evolution of the ecosystem. Non-governmental organizations include international organizations, educational institutions, trade associations/organizations, think tanks and other non-profit organizations.

Over the past decade, ESG investing has been rapidly expanding its market size globally. The number of institutions worldwide that have signed the Principles for Responsible Investment (PRI) had grown from 63 in 2006 to 3,826 by the end of 2021, representing assets exceeding USD 120 trillion<sup>2</sup>. According to the Global Sustainable Investment Alliance (GSIA), global sustainable investment assets reached USD 35.3 trillion as of early 2020, up 15% from USD 30.7 trillion in 2018, at a compound annual growth rate of 13%<sup>3</sup>. This figure far outpaces the 6.01% annual growth in total global asset management. In particular, ESG funds are the mainstream of ESG investing, with global ESG fund assets amounting to USD 2.24 trillion as of the third quarter of 2022<sup>4</sup>. Global green bond issuance is growing exponentially, reaching USD 487.1 billion in 2022, an 180-fold increase from USD 2.6 billion in 2012.

The following part will analyze the policy formulation, market development and investment and financing practices of key financial centers in the Middle East, Europe and Asia in the field of ESG investing, with

the aim to provide a new research perspective for BRI financial centers to play a greater role.

## 2. ESG Investing in International Financial Centers in Middle East

Emerging economies in Asia and the Middle East are encountering multiple challenges related to growth and transformation. The key to overcoming these challenges is collaboration in the future. The emerging and developed economies of Asia have the advantage of innovation, technology, talent, production and markets, while their counterparts in the Middle East can offer energy, capital and geo-economic clout. Asia, especially China, exports industrial capacities to the Middle East and provides the Arab world with high-quality and cost-effective products, services and a higher form of industrial chain. This plays a crucial role in the digital transformation and inclusive growth in the Middle East. The sovereign wealth funds in the Middle East target quality financial assets and innovative companies in Asia, especially in China, to lock in a long-term industrial base for sovereign wealth management and economic growth in Middle Eastern countries, and ultimately to share the long-term growth dividends of Asia and China through investment. Despite the challenges, both regions have intensified their collaboration and synergy in the areas of cross-border trade, investment and finance. This provides a key driver for future BRI cooperation between Asia and the Middle East, and injects new momentum into the international financial centers and ESG development in the Middle East.

### 2.1 ESG Investing in the United Arab Emirates (UAE)

China and the UAE have strong economic complementarities. Since the launch of the BRI, and guided by its “Look East” foreign policy, the UAE has comprehensively aligned its development strategy with the BRI. It has long relied on oil as a mainstay of its economy, and has suffered much from climate change impact. Thus, the country has taken proactive steps to align itself with the initiatives of international organizations by creating a sustainable development strategy that caters to local conditions. Additionally, it has incorporated sustainability into its national green growth strategy, making it one of the first countries in the Gulf region to embrace a green economic transition.

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2 Source: About the PRI. (2022, April 12). PRI. (<https://www.unpri.org/about-us/about-the-pri>)

3 Source: GSIA. Global Sustainable Investment Review (<https://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf>)

4 Source: Guolian Securities. Financial Engineering Special Report: A Study of Chinese and International Developments in ESG Funds [R]. 2022.

The ESG practices of Abu Dhabi and Dubai are highly representative.

Abu Dhabi is the capital of the UAE and the capital of the Emirate of Abu Dhabi, the largest of the seven emirates by area and home to 95% of the UAE's oil and gas resources. According to the Global Financial Centres Index 33 Rank-2023 (GFCI 33 Rank)<sup>5</sup>, Abu Dhabi is ranked 35th out of 120 international financial centers in terms of financial competitiveness, second only to Dubai in the Middle East and Africa. The city is ranked 33rd out of 86 cities globally in the 2023 Global Green Finance Index (GGFI 11)<sup>6</sup>.

Dubai is the second largest emirate after Abu Dhabi and the capital of the Emirate of Dubai, as well as an important economic and financial center in the Middle East. According to the GFCI 33 Rank, Dubai's financial competitiveness is ranked 22nd out of 120 international financial centers and first in the Middle East and Africa. It is ranked 32nd out of 86 cities globally in the 2023 GGFI.

The major players in ESG investing in the UAE are the Abu Dhabi Global Market (ADGM)<sup>7</sup>, Abu Dhabi Securities Exchange (ADX)<sup>8</sup>, Dubai International Financial Centre (DIFC)<sup>9</sup> and Dubai Financial Market (DFM)<sup>10</sup>.

In recent years, the UAE has, in response to international initiatives, attached great importance to the synergistic development of the economy and the environment in its national strategy, accelerated the introduction of local sustainable development policies in each emirate, strengthened public-private partnerships on ESG, encouraged enterprises to implement ESG strategies, and promoted green economy transformation through the development of a sustainable financial market.

**Table 1 Key ESG Policy Measures Adopted in the UAE and Abu Dhabi<sup>11</sup>**

Time	Key Policy Measures
2010	The UAE Cabinet launches the UAE Vision 2021 which puts sustainable development at the center of the coming decades.
2012	The UAE presents its Environment and Government Agenda, which aims to create a perfect balance between economic development and environmental protection.
2015	The UAE Cabinet approves and implements the UAE Green Agenda 2015-2030.
2016	The UAE becomes the first country to ratify the Paris Agreement in the Middle East.
2018	The UAE Council of Ministers issues the CSR Law which sets out CSR disclosure requirements.
2019	Abu Dhabi Global Market (ADGM) launches the Abu Dhabi Sustainable Finance Declaration.
2019	Abu Dhabi Securities Exchange joins the United Nations Sustainable Stock Exchanges initiative.
2019	Abu Dhabi Securities Exchange issues its first ESG Disclosure Guidance for Listed Companies.
2019	Abu Dhabi launches the Abu Dhabi Economic Vision 2030, its long-term development strategy.
2020	The Abu Dhabi Department of Energy announces a new Green Bond Accelerator initiative to establish Abu Dhabi as a regional hub for the issuance of green bonds and green sukuk.
2021	The UAE unveils the Net Zero by 2050 Strategic Initiative, becoming the first Middle Eastern country to commit to net zero emissions by 2050.
2023	Abu Dhabi unveils the Environmental Vision 2030 to strengthen integration among the three pillars of ESG.

Dubai, the strongest economy in the UAE, has actively taken steps to explore sustainable development following the launch of the UAE Vision.

5 Global Financial Centres Index 33 Rank-2023, GFCI 33 Rank

6 Global Green Finance Index, GGFI 11

7 Source: <https://www.adgm.com/about-adgm/overview>

8 Source: <https://www.adx.ae/English/Pages/AboutADX/default.aspx>

9 Source: <https://www.difc.ae/chinese/#about>

10 Source: <https://www.dfm.ae/discover-dfm/why-dfm>

11 Source: official websites of the UAE; The UAE General Environmental Policy 2021; publicly available information on the Internet

**Table 2 Key ESG Policy Measures Adopted in the UAE and Dubai<sup>12</sup>**

Time	Key Policy Measures
2016	Dubai launches Dubai Declaration on Sustainable Finance.
2016	Dubai Financial Market joins the United Nations Sustainable Stock Exchanges initiative.
2017	Dubai Financial Market releases its first DFM Sustainability Report that encourages listed companies to adopt ESG reporting guidelines.
2019	Dubai Financial Market issues the first ESG Disclosure Guidance for Listed Companies in Dubai.
2019	Dubai Financial Market launches the Sustainability Strategic Plan 2025 to promote the ESG concept.
2020	The Dubai Financial Services Authority joins forces with various organizations to launch the UAE's first set of Guiding Principles on Sustainable Finance.

Invest-able ESG products in the UAE currently include green bond, green sukuk, green fund, ESG indices, and carbon financial products.

In January 2020, the Abu Dhabi Department of Energy (DoE), the ADGM and the ADX launched a new Green Bond Accelerator initiative<sup>13</sup>. These green bonds will be listed on the ADX and will only support green and sustainable projects that comply with the DoE's Green Bond Policy. In 2019, Dubai-based retail company Majid Al Futtaim issued the UAE's first Green Sukuk, raising a total of USD 600 million to support projects related to renewable energy and energy efficiency improvements.

In 2020, the Abu Dhabi Future Energy Company launched the region's first green Real Estate Investment Trusts (REITs) at the ADGM. In 2013, the Dubai government established a Green Fund worth Dh100 billion (approximately USD 27.224 billion), which aims to help Dubai build a green city by supporting solar energy projects, new energy vehicles and energy-efficient building retrofits. In 2015, the Dubai Green Fund committed a further USD 27 billion to develop the

clean energy market.

Currently, the DFM offers two major ESG indices to investors: S&P/Hawkamah Pan Arab ESG Index and S&P/Hawkamah UAE ESG Index. In 2012, Hawkamah, the Institute for Corporate Governance collaborated with S&P Dow Jones Indices to launch the MENA region's first ESG index, the S&P/Hawkamah Pan Arab ESG Index, which benchmarks and ranks 50 listed companies in the MENA region on transparency and disclosure. In 2020, the Hawkamah, S&P Dow Jones Indices, and the UAE Securities and Commodities Authority partnered to launch the S&P/Hawkamah UAE ESG Index at the DFM. The index benchmarks the UAE's ESG and measures the responsibility fulfillment of 20 listed companies in the country.

In 2023, the Emirates National Bank of Dubai (NBD) became the first to offer trading in carbon offset futures contracts to meet the growing demand of companies. In July 2023, the NBD was the first to offer trading in carbon futures contracts, designed to provide clients with the flexibility to trade carbon credits as they work towards achieving their sustainable development goals<sup>14</sup>.

The UAE has three of the top 10 sovereign wealth funds in the world. In the case of Mubadala Investment Company, the second-largest sovereign wealth fund, responsible investing has always been part of its core mission. Since its inception, Mubadala has endeavored to integrate ESG principles and considerations into its investment decisions and business operations. In 2021, Mubadala established a Responsible Investing Unit and issued a Responsible Investing Policy (RI Policy) to further integrate ESG into the investment lifecycle. Mubadala has also launched the Responsible Investing Network to actively collaborate with its portfolio companies in promoting ESG standards and stewardship. The company aims to drive sustained growth in ESG performance through this network. By sharing knowledge and experience

<sup>12</sup> Source: official websites of the UAE; The UAE General Environmental Policy 2021; publicly available information on the Internet

<sup>13</sup> Source: Ministry of Commerce of the People's Republic of China (<http://www.mofcom.gov.cn/article/i/jyjl/k/202001/20200102931837.shtml>)

<sup>14</sup> Source: Emirates News Agency, National Bank of Dubai, UAE, launches Emissions Trading System (<https://finance.sina.com.cn/esg/2023-07-06/doc-imyztxn8855127.shtml>)

within the Mubadala Group, the Responsible Investing Network supports companies in Mubadala's portfolio in realizing decarbonization strategies and other ESG commitments.

The two international financial centers of the UAE, Abu Dhabi and Dubai, have demonstrated noticeable advancements in ESG and sustainable investment through the unrelenting work by their onshore and offshore financial regulatory authorities, as well as sovereign wealth funds, major industries, and financial institutions. They have emerged as vital collaborative partners, connecting with the BRI sustainable investing and finance network, and delivering noteworthy outcomes.

## **2.2 ESG Investing in Qatar**

Qatar is the world's largest producer and exporter of liquefied natural gas (LNG), with oil and gas exports accounting for almost 80 per cent or more of government revenues. This results in a monolithic economic structure. In recent years, Qatar has embarked on a transition towards a green, sustainable and diversified economy. In 2008, the country released the Qatar National Vision 2030 with detailed plans to progressively reduce the economy's dependence on conventional energy sources and to promote a strategy of sustainable development and economic diversification. The goal was to establish Qatar as a global hub for manufacturing and financial services, as well as a center for scientific research and culture.

China's relations with Qatar are becoming closer as both sides seek to intensify pragmatic cooperation. Qatar was one of the first countries to recognize the BRI, and signed a memorandum of understanding on BRI with China in 2019. In 2020, Qatar became China's second largest supplier of LNG, while China emerged as Qatar's largest trading partner. In addition to cooperation in energy and economy, Qatar develops close ties with China with the aim to vigorously diversify its economy and reduce oil dependence.

Qatar is actively seeking to align its National Vision 2030 with China's BRI, which will bring broad prospects for investment cooperation between the two countries.

Qatar's economic diversification policy seeks to develop non-energy industries into new engines of the national economy. The country intensively develops aviation, port logistics and the financial sector, which provides an ideal opportunity for Chinese enterprises to "go global". China's huge economic growth potential also attracts Qatari investors to invest in the country. Both sides are actively exploring financial connectivity under the BRI, strengthening the development of international financial centers, developing sustainable finance, promoting ESG investing to break down market barriers, and laying the foundation for China-Qatar investment cooperation.

The Qatar Financial Centre (QFC) has set up a fledgling ESG investing ecosystem. The QFC issued the Qatar Green Bond Framework in 2022 to provide reference and basis for its financial institutions to issue green sukuk. Qatar's green sukuk is still in its infancy and no issuance has been recorded yet. However, based on the observations of other Middle Eastern countries, Qatar will issue green sukuk in the near future to promote green finance and sustainable development. The Qatar Investment Authority (QIA) is one of Qatar's key ESG investing actors. It manages the country's oil and gas surpluses, with assets amounting to approximately USD 475 billion. In 2020, QIA pursued a sustainable and responsible investment strategy and announced it would not make new investments in hydrocarbons. The Qatar Stock Exchange (QSE) is the most important trading platform in Qatar, and a key platform for ESG investing in the country.

In order to realize the national vision and promote the development of financial centers and ESG investing, Qatar has issued a number of key initiatives, as set out below.

**Table 3 Key ESG Policy Measures in Qatar<sup>15</sup>**

Time	Key Policy Measures
2008	Release of the Qatar National Vision 2030
2016	Qatar Stock Exchange joins the United Nations Sustainable Stock Exchanges Initiative, and releases the Guidance on ESG Reporting.
2018	Qatar Stock Exchange establishes a sustainability and ESG platform to encourage companies to publish ESG reports.
2020	Qatar amends its labour laws to improve work conditions and address the persistent labour issues that have long been the subject of much criticism.
2021	Qatar launches National Climate Change Plan to reduce greenhouse gas emissions by 25% by 2030.

Qatar’s ESG investing products currently consist mainly of green bonds and green sukuk. In 2020, Qatar National Bank (QNB) released the Qatar Green, Social, and Sustainability Bond Framework and issued a USD 600 million green bond. Doha Bank set up an ESG Bond Committee in 2021 to support its plan to issue a USD 2 billion green bond. The committee also provides guarantee services for the pool of funds to ensure their utilization for sustainable development.

Qatar National Vision 2030 (QNV) is a development plan launched in October 2008 by the General Secretariat for Development Planning in the State of Qatar. It aims at “transforming Qatar by 2030 into a developed country capable of achieving sustainable development”. QNV provides a framework to develop national strategies and implementation plans to achieve pre-determined outcomes in the long term. It is divided into four main pillars of development objectives: human, social, economic and environmental development.

<sup>15</sup> Source: <https://www.pwc.com/m1/en/media-centre/2023/qatars-progressive-esg-journey-key-developments-and-future-plans.html>

**Table 4 Four Strategic Pillars of the Qatar National Vision 2030**

Human development	The first is to improve the country’s educational system and scientific research capacity, and provide more citizens with access to education. The second is to improve the national health care system, so as to ensure physical and mental health of the people. The third is to protect the rights and security of expatriate labor and to retain the right mix of skills.
Social development	Building an effective social protection system for all Qataris that ensures their civil rights, and values their contributions to social development; shaping a sound social structure, including effective public institutions and strong and active civil society organizations; and strengthening economic, political and cultural cooperation globally to realize domestic peace and security, and deliver on their international commitments.
Economic development	The first is to have sound financial policies and a safe and efficient financial system capable of attracting foreign investment; the second is to ensure responsible natural gas extraction and to strike a balance between economic diversification and the degree of depletion; and the third is to diversify the economy appropriately and to expand industries and services with competitive advantages derived from hydrocarbon industries.
Environmental development	Achieving a balance between development needs and protecting the environment, including air, land, water and biological diversity; adopting sustainable development policies to mitigate and adapt to the negative impacts on the environment of pollution resulting from development activities

In order to achieve the great aspirations of QNV 2030, a series of national medium term strategies have been formulated, from the National Development Strategy 2011-2016 to the Second National Development Strategy 2017-2022. These national strategies have also paved the way for short-term action plans that are interlinked with available resources and budgets, in addition to the roles and mandates of the institutions implementing national development programs and projects. Therefore, the participation of governmental and non-governmental organizations is not limited to the preparation of QNV documents and national development strategies. Instead, they also extend to the concrete implementation phase.

Like other Middle Eastern Gulf oil producers, Qatar also owns one of the world's largest sovereign wealth funds, the Qatar Investment Authority (QIA). In 2020, QIA's investment strategy was upgraded to include sustainability as a new investment direction. Sustainable investing improves the performance and resilience of QIA portfolios. In addition, sustainability is in line with the mission to create value for future generations in Qatar, fitting in with the goals of Qatar National Vision 2030.

QIA aspires to invest sustainably and responsibly by

- 1) taking a long-term view of investment decisions;
- 2) integrating ESG factors at the portfolio and firm level; and
- 3) supporting QIA investments to have a positive impact on the world.

Through its investment strategy, QIA expects to have a sustainable impact on everything from renewable energy, energy storage, eco-friendly real estate to electric vehicles. In January 2020, QIA announced that it would not make new investments in hydrocarbons. QIA will continue to invest its capital in sustainable business models globally and will regularly review its sustainable investment approach to align it with the evolving ESG norms and practices as well as the national goals and ambitions of Qatar.

Qatar's international financial centers are closely linked to onshore markets. It forms synergy with modern finance and sukuk in domestic and regional ESG investing. For ESG investing and financing in the Arab world under the BRI framework, Doha is becoming a new source of growth, following the examples of Dubai and Abu Dhabi.

### 3. ESG Investing in International Financial Centers in Europe

Europe has long been incorporating ESG principles into its investment and regulatory practices, and made great efforts to constantly improve relevant policies and regulations, which gives it a clear first-mover advantage. The promotion of ESG principles within the BRI framework is conducive to consensus-building,

healthy competition, breaking down financial barriers, and financial cooperation between China and the EU. This will help facilitate the transformation and upgrading of "hardware projects" including infrastructure construction, to "soft connectivity", such as green investment and financing.

Europe's well-established network of international financial centers serves as a suitable platform for sustainable finance and ESG investing to grow. Luxembourg is a world center for fund management, private banking, and green and sustainability bonds. Frankfurt is the European center for monetary policy, derivatives trading, and sustainable finance.

#### **3.1 ESG Investing in the International Financial Center of Luxembourg**

Luxembourg became the second founding member state of the European Union after Italy to join China's Belt and Road Initiative. Since joining the BRI framework, Luxembourg has strengthened cooperation with China in finance and production capacity. The "Air Silk Road", a cargo flight connection between Luxembourg and Zhengzhou, presents unparalleled strategic advantages and tremendous potential for development. Luxembourg is the first European country to apply to join the Asian Infrastructure Investment Bank<sup>16</sup>. As one of the major financial markets, Luxembourg is ranked as the world's No. 4 international financial center<sup>17</sup>. It is Europe's largest fund market, a global leader in cross-border fund allocation, and the world's second-largest center for investment trusts and investment fund operations after the United States of America. Luxembourg-domiciled investment funds are distributed in more than 70 countries. According to the GFCI 33 Rank, Luxembourg's financial competitiveness is ranked 19th out of 120 financial centers at a score of 705.

Luxembourg, as an international financial center, has established a mature financial system and market, which provides a sound foundation for its ESG investing ecosystem. Its banking sector

<sup>16</sup> Asian Infrastructure Investment Bank, AIIB

<sup>17</sup> Based on the statistics of OECD



boasts significant benefits for ESG investing and financing, mainly reflected in its exceptional financial services network, which includes 127 listed banks, 91 insurance companies, and 208 reinsurance companies. Therefore, major banks in Luxembourg can utilize established financial networks and trading platforms for green finance to delve into green finance practices. For example, the Luxembourg-based European Investment Bank (EIB), the world’s largest multilateral lender, is one of the largest providers of finance for climate action. Since its establishment in 1958, the EIB has invested more than EUR 1 trillion in projects in Europe and around the world, prioritizing investment activities in climate and environment. Banque Internationale à Luxembourg (BIL) is the oldest private banking group in the country and a significant shareholder of the Luxembourg Green Exchange. Leveraging Luxembourg’s advantageous position as a global hub for green bonds, BIL has set strategic priorities for sustainable development and continued to push the boundaries of green bonds and green investments. Driven by the BRI, BIL has also actively partnered with Chinese financial institutions to provide green financial support to Chinese enterprises, working in tandem towards sustainable development.

Luxembourg has a well-developed ESG trading system and a mature securities market. The Luxembourg Stock Exchange (LuxSE) was established as early as 1928, followed by the Luxembourg Green Exchange (LGX), the world’s first platform for green financial instruments. To date, half of the world’s tradable green bonds have been listed on LGX. In September 2020, China Merchants Bank’s first sustainability bond was also listed on the LGX<sup>18</sup>.

In addition to trading platforms, Luxembourg is also a world leader in ESG fund management and ESG certification, with a large number of third-party professional institutions and an extensive network of non-governmental organizations, such as the Association of the Luxembourg Fund Industry (ALFI), Luxembourg for Finance (LFF) and Luxembourg Finance Labelling Agency (LuxFLAG).

18 <http://www.tanjiaoyi.com/article-32039-1.html>

The Luxembourg ESG regulatory framework consists mainly of several EU regulations, adapted EU legislative measures, national laws and regulatory guidelines<sup>19</sup>.

**Table 5 Key ESG Policy Measures Adopted in Luxembourg<sup>20</sup>**

Time	Key Policy Measures
2016	Releasing the law on the publication of non-financial information, amending Directive 2013/34/EU on the disclosure of non-financial and diversity information by certain large undertakings and groups, and incorporating them into the laws of Luxembourg.
2019	Regulation of the European Parliament and the Council on sustainability disclosures in the financial services sector, Regulation (EU) 2019/2088 Sustainable Finance Disclosure Regulation <sup>1</sup> .
2019	Regulation (EU) 2019/2089 of the European Parliament and the Council amending Regulation (EU) 2016/1011 on the disclosure of the EU Climate Transition Benchmarks, the EU Paris-Aligned Benchmarks and sustainability-related disclosures for all benchmarks (“Low Carbon Benchmarks Regulation”)
2020	Regulation (EU) 2020/852 of the European Parliament and the Council establishing a framework for the promotion of sustainable investment (“Taxonomy Regulation”)
2022	Commission Delegates Regulation (EU) 2022/1288 supplementing the SFDR’s regulatory technical standards

The Luxembourg international financial center has a wide range of ESG investing products. First, Luxembourg offers an excellent environment for green financing, providing “green loans” for EU countries to finance ESG sponsors and investors. Second, the LGX has a leading market share of GSSS bonds listed globally, with over 160 listed green bonds in different currencies. All securities listed on the LGX are considered 100% green worldwide. Third, Luxembourg is a European leader in ESG funds with a

19 Due to space constraints, this is not an exhaustive list.

20 Source: compiled based on publicly available information.

44% market share of total European ESG net flows<sup>21</sup>. Fourth, Luxembourg was ranked first in Europe in 2022 in terms of the number of responsible investment funds and the amount of assets under management, accounting for more than one third of the total of the European Union. Fifth, Luxembourg is the leading domicile of sustainable funds in Europe.

**Green loan:** Luxembourg offers an excellent environment for green financing, providing “green loans” for EU countries to finance ESG sponsors and investors. Its domestic banks are also providing green financing to support sustainable projects in the field of renewable energy. The International Climate Finance Accelerator is a public-private partnership established in Luxembourg that offers financial support, working capital loans and mentoring to sustainable sponsors and fund managers who are interested in investing in climate finance and creating a positive impact.

**Green, Social, Sustainable & Sustainability Linked Bond (GSSS)<sup>22</sup>:** The LGX has a leading market share of GSSS bonds listed globally, with over 160 listed green bonds in different currencies. Currently, the LGX has about 1,600 GSSS bonds, which has raised more than EUR 831 billion for green, social and sustainable development projects worldwide. All securities listed on the LGX are globally considered 100% green, including green bonds, social-impact bonds, and sustainability bonds.

**ESG fund:** Luxembourg is a European leader in ESG funds with a 44% market share of total European ESG net flows<sup>23</sup>.

**Responsible investment fund:** Luxembourg was ranked first in Europe in 2022 in terms of the number of responsible investment funds and the amount of assets under management, accounting for more than one third

of the total of the European Union. On September 24, 2020, the governments of Germany and Luxembourg joined forces with the World Bank, the European Investment Bank and the Global Covenant of Mayors to establish the City Climate Finance Gap Fund (Gap Fund). The Gap Fund is launched to catalyze investment in low-carbon, climate-resilient and livable cities in developing and emerging economies. Germany and Luxembourg are providing support of EUR 45 million and EUR 10 million respectively in the first phase.

**Sustainable development fund:** Luxembourg is the main domicile for European sustainable development funds. According to Morningstar Direct, the net assets of European registered sustainability funds in the last two years amounted to nearly EUR 2 trillion, 1/3 of which was contributed by Luxembourg.

Luxembourg's financial community has rapidly deepened its cooperation with China in recent years, with its bourse and banking sector making major breakthroughs with key Chinese institutions at both strategic and operational levels. LGX has played a key role in the process. With the help of Chinese partner exchanges, banks and brokerages, more and more enterprises have issued their green bonds in Luxembourg, which has become a new highlight of the BRI green finance and ESG cooperation.

### **3.2 ESG Investing in the International Financial Center of Frankfurt**

Germany plays an important role in international affairs as one of the key members of the EU, NATO, G7, G20 and OCED. Frankfurt is a key financial center for Germany and Europe.

A number of internationally recognized financial institutions are headquartered in Frankfurt, including the European Central Bank (ECB)<sup>24</sup>, Deutsche

21 Source: Morningstar, ZEB and ALFI European Sustainable Investment Funds Study 2021. <https://www.alfi.lu/en-gb/pages/european-sustainable-investment-funds-study-2021>

22 Green, Social, Sustainable and Sustainability-Linked Bonds, or GSSS in short

23 Source: Morningstar, ZEB and ALFI European Sustainable Investment Funds Study 2021. <https://www.alfi.lu/en-gb/pages/european-sustainable-investment-funds-study-2021>

24 The European Central Bank (ECB) is the central bank of the Eurozone and is responsible for setting and implementing monetary policies in the Eurozone. Founded in 1998, it is headquartered in Frankfurt, Germany. The ECB is an independent institution of the EU, whose main objective is to ensure price stability within the Eurozone and to preserve the value of the currency.

Bundesbank<sup>25</sup>, Eurex<sup>26</sup> and Xetra<sup>27</sup>. These institutions have been advocating for sustainable finance, ESG investing, and BRI cooperation. In particular, Eurex has pioneered the field of ESG derivatives and has become a leading exchange of ESG derivatives. It is one of the largest stock trading platforms in Europe and one of the leading stock markets in Germany. About 20% of all Xetra ETFs are themed on sustainability. By the end of 2022, out of more than 2,000 Deutsche Börse exchange-traded index funds, over 730 ETF funds have focused on sustainability criteria such as ESG or SR<sup>28</sup>.

In the context of advancing sustainable financial development, market players in Germany have also responded actively towards the Sustainable Financial Development Initiative (SFDI). For example, KfW (Kreditanstalt für Wiederaufbau)<sup>29</sup>, the primary advocate for green finance in Germany, has spearheaded the country's energy transition. In addition, Frankfurt is home to a range of third-party clusters and professional institutions, such as the Hub for Sustainable Finance (H4SF), and the Green and Sustainable Finance Cluster Germany (GSFCG).

Germany has progressively enhanced and streamlined its policies by adopting global standards, refining ESG practices, and transitioning from voluntary to obligatory disclosure practices, in order to attain its sustainable development objectives.

25 The Deutsche Bundesbank, the central bank and currency-issuing institution of Germany responsible for setting the country's monetary policy and regulating the financial system, was founded in 1957 and headquartered in Frankfurt. It forms part of the ECB system and is an important player in the Eurozone.

26 The European Futures Exchange (Eurex) is one of the world's largest futures and options exchanges, headquartered in Frankfurt, Germany. It was formed in 1998 by the merger of Deutsche Börse and SWX Swiss Exchange. The Eurex Exchange specializes in providing trading platforms for financial products and derivatives in European countries and is an important part of the global financial markets.

27 Xetra is an electronic trading system operated by the Frankfurt Stock Exchange in Germany. Operations started in November 1997 in the form of a subsidiary of Deutsche Börse AG.

28 Source: Deutsche Börse Xetra - Fokus. ESG. Deutsche Börse Group. <https://xetra.com/esg/>

29 KfW is one of the world's largest development banks founded in 1948 and headquartered in Frankfurt, with operations focused on supporting public utilities and social welfare programs. It contributes to government policies and provides strategic support with the aim of supporting socially, environmentally and economically sustainable development.

**Table 6 Key Policy Measures for Sustainable Development in Germany<sup>30</sup>**

Time	Key Policy Measures
2002	For the first time, Germany has introduced a national strategy for sustainable development, with specific implementation measures.
2005	The Council of Government issues a Code of Corporate Governance requiring "comply or explain".
2011	The German Commission for Sustainable Development issues for the first time the German Sustainability Code.
2013	German Bundestag issues the Capital Investment Code, encouraging all funds and their managers to focus on ESG issues.
2014	Deutsche Börse joins the UN Sustainable Stock Exchange Initiative.
2016	Germany formally signs the Paris Agreement, aiming for joint action on global climate change after 2020.
2018	BaFin amends the Insurance Supervision Act to require pension funds to clearly disclose ESG considerations in investment decisions.
2020	Germany leads participation in draft policies and regulations issued by the EU High-level Group of Experts on Sustainable Finance, such as the EU Classification of Sustainable Finance and the Proposal of Regulation on the Establishment of a Framework to Facilitate Sustainable Investment.
2021	Germany adopts the Corporate Sustainability Reporting Directive (CSRD) to expand the scope of ESG reporting companies.

The growth of green bonds in Germany is well-established, and the country ranks as Europe's second largest green bond market, only next to France. The country's green bond market of USD 61.2 billion by 2022 is the third largest in the world, behind China (USD 85.4 billion) and the United States (USD 64.4 billion)<sup>31</sup>. The top issuers of green bonds in Germany are financial companies led by mortgage banks. In 2018, they represented 43% of the total issuance, and KfW accounted for 25% of the issuance for that year.

The state of Hesse, where Frankfurt is located, issued the first-ever green bonds in Germany. The state aims to cater to the investors' rising interest in

30 Source: Based on the official websites of Germany and public information on the Internet

31 Source: CBI Sustainability Report

funding environmentally sustainable ventures by issuing green bonds. In 2021, the state of Hesse allocated approximately EUR 600 million of green bonds to eight strategic directions. In 2023, it increased the number of projects under the original eight strategic directions from 20 to 30 (including 14 new projects). At the same time, the state expects the green bond issuance to reach a size of EUR 1 billion.

European issuers of Exchange Traded Funds (ETFs) are increasingly expanding their product range to include ESG-ETFs. ESG-ETFs on Xetra have a monthly trading volume of EUR 2.8 billion, which represents more than 19% of Xetra's total ETF trading. In 2022, Xetra launched 273 new ETFs, 198 of which are ESG ETFs. There are currently 2,000 ETFs on Xetra available to investors, including 820 ESG-ETFs.

ESG derivatives trading volumes on the Eurex have grown strongly in recent years. In 2021, its ESG segment traded 1.78 million futures and 308,000 options for a total value of more than EUR 35.3 billion, with capital OI across all ESG products growing from EUR 1.6 billion in December 2020 to EUR 4.9 billion in September 2021, an increase of 200%. ESG product trading volume reached 2.1 million contracts, up 67% from 2020<sup>32</sup>.

Financial institutions in Frankfurt's financial center, from exchanges to investment banks, are attracting an increasing number of Chinese companies for green financing and investment. As both countries accelerate their collaboration in securities regulation, they are also deepening cooperation in the field of sustainable finance within the BRI framework.

#### 4. ESG Investing in International Financial Centers in Asia

International financial centers in Asia are closely linked to the Belt and Road Initiative (BRI) projects. China serves as the initiator and primary promoter of the initiative. As a major player in Asia, China has been

strengthening economic partnerships and invested heavily in countries along the BRI route. Meanwhile, international financial centers across Asia have made significant strides in the areas of sustainable development and green finance.

In BRI projects, international financial centers in Asia can share their experience and expertise in sustainable development. Collaboratively, they can work with participating countries to promote sustainability and green development of the projects. The involvement of Asian international financial centers in the Belt and Road Initiative is strategically important for green, sustainable development.

Shanghai, Hong Kong and Singapore are preeminent international financial centers in Asia. In Shanghai, the Shanghai Stock Exchange, one of the oldest stock exchanges founded in the Chinese mainland, has actively advanced ESG investing and further development of green finance. As a global financial hub, Hong Kong has a substantial track record of advancing ESG initiatives. The Hong Kong Stock Exchange encourages listed companies to disclose their ESG information, which is attracting an increasing number of ESG investors. As a bridge between the Chinese mainland and global markets, Hong Kong is poised to serve as a critical financing and investment hub for BRI projects, in which ESG standards will play a vital role. Singapore is the only developed economy in Southeast Asia with a firmly established financial market and robust ESG development. It advocates sustainable financing and green bonds to back sustainable development projects. Singapore's position as a financial center renders it a key player in BRI projects. By directing investments towards projects that meet ESG standards, Singapore can help increase the sustainability of these projects.

All the three financial centers are actively embracing ESG trends and incorporating ESG principles into their financial operations and investment decisions. This valuable support for BRI investment and financing is promoting sustainable development and the growth of green finance. Their initiatives have contributed to enhancing regional cooperation and advancing ESG policy alignment with western nations, playing a pivotal

32 Source: Largest and Fastest Growing ESG Derivatives Segment - OI Over 4.9 Billion EUR. (<https://www.eurex.com/ex-en/find/news/Largest-and-fastest-growing-ESG-derivatives-segment-OI-over-4.9-billion-EUR-2805754>)

role in sustaining the success of the Belt and Road Initiative.

#### 4.1 ESG Investing in the International Financial Center of Shanghai

Shanghai is China's hub of finance, trade, shipping, and scientific and technological innovation, with significant global influence. According to the Global Financial Centres Index 33 (GFCI 33 Rank), Shanghai ranks 7th among 120 international financial centers in terms of financial competitiveness, only next to Singapore and Hong Kong in the Asia-Pacific region.

In regards to sustainable development, ESG has experienced rapid growth in Shanghai in recent years. Shanghai is leading the nation when it comes to the proportion of ESG-oriented reports released by publicly traded companies. In particular, Shanghai ranks first in the country in terms of the number of private companies publishing ESG reports. Shanghai's ESG investing management practices are exemplary and representative in China. The city ranks 20th in the Global Green Finance Index, only behind Singapore and Seoul among the financial centers in Asia. Shanghai has achieved 88.23% of its SDGs and was ranked third in China in The SDGs in Chinese Cities: Progress Assessment Report 2020 by the United Nations. In ESG practices, Shanghai can serve as an inspiring example for other Chinese cities to follow.

On the regulatory front, the Shanghai Office of the China Securities Regulatory Commission oversees trading practices in the Shanghai securities market. The Office advocates the establishment of ESG standards and the disclosure of corporate ESG practices. Nevertheless, local financial institutions are generally responsible for developing and implementing specific policies. Relevant state regulators are also promoting ESG policies in Shanghai that obligate companies to disclose social responsibility or ESG reports. The Ministry of Ecology and Environment and the People's Bank of China have enhanced the disclosure of environmental information by implementing guidelines for this disclosure.

ESG governance in Shanghai is mainly handled by the state regulator. Following the 2008 financial

crisis, the Chinese government has gradually increased its focus on the issue of ESG and sustainable development. ESG-related requirements were explicitly outlined in the China CSR Guidelines released in 2010. Subsequently, the China Securities Regulatory Commission and the State Council issued policies and guidelines regarding this matter.

**Table 7 Key ESG Policy Measures Adopted in Shanghai<sup>33</sup>**

Time	Key Policy Measures
January 2008	The State-owned Assets Supervision and Administration Commission of the State Council issues the Guidelines for Fulfilling Social Responsibility by Centrally Administered SOEs, mandating the establishment of a social responsibility reporting system for such enterprises.
May 2008	The Shanghai Stock Exchange (SSE) issues the Notice on Strengthening the Social Responsibility of Listed Companies and the Guidelines for Environmental Information Disclosure of Listed Companies on the Shanghai Stock Exchange, which mandate that listed companies disclose material environmentally relevant information and promote the annual disclosure of social responsibility reports.
July 2016	The State-owned Assets Supervision and Administration Commission of the State Council issues the Guidelines on State-owned Enterprises to Better Fulfill Their Social Responsibilities, which mandates state-owned enterprises to establish and improve a system for publishing social responsibility reports on a regular basis.
June 2018	A-shares are officially included in the MSCI Emerging Markets Index, and all included listed companies must be subject to ESG ratings.
December 2020	The SSE issues the Rules Governing the Listing of Stocks on the Science and Technology Innovation Board, which mandates companies listed on the Science and Technology Innovation Board to disclose their performance of social responsibilities.
July 2021	The People's Bank of China issues the Guidelines for Environmental Information Disclosure of Financial Institutions, which includes a set of requirements for disclosing environmental information by financial institutions.

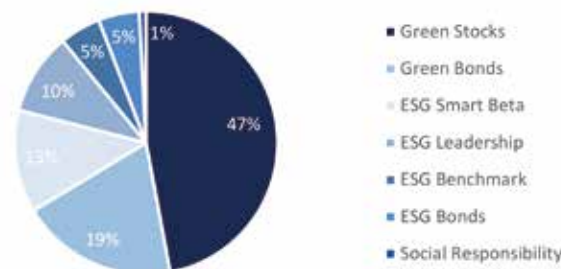
<sup>33</sup> Source: compiled based on publicly available information

Time	Key Policy Measures
January 2022	The SSE issues the Circular on the Disclosure of 2021 Annual Reports of Listed Companies on the Science and Technology Innovation Board, which mandates that listed companies on the Science and Technology Innovation Board to disclose ESG information.
May 2022	The State-owned Assets Supervision and Administration Commission of the State Council issues the Work Plan for Improving the Quality of Listed Companies Controlled by Central Enterprises, which mandates more companies owned by centrally administered SOEs to disclose ESG reports, with a view to achieving full coverage of relevant special reports by 2023.

Shanghai is a fast growing green bond market, with a significant number of bonds already issued. As of July 28, 2023, the SSE had listed or quoted a total of 893 green bond products. In addition, the SSE promotes the innovation of green bond products. In 2022, the SSE issued low-carbon transition bonds and transition-linked bonds totaling RMB 24.9 billion. These new financial instruments effectively complemented the existing green bond portfolio and offered companies a wider variety of green financing options<sup>34</sup>. By the end of 2022, the SSE had issued a total of 345 green corporate bonds and 558 green asset-backed securities, altogether worth RMB 508.6 billion. In February 2023, China Power International Holding Ltd. (“CPIH”) successfully issued a panda bond worth RMB 800 million on the Shanghai Stock Exchange<sup>35</sup>. The funds raised through the issuance of the panda bond will be utilized exclusively in clean energy projects in Kazakhstan. This is also the first-ever panda bond for green and scientific and technological innovation in China.

Shanghai is also actively promoting research on green indices<sup>36</sup>. By the end of 2022, the SSE, in collaboration with China Securities Index Co., Ltd., had

published a total of 122 ESG and sustainability indices, comprising of 92 stock indices, 29 bond indices, and 1 multi-asset index. In 2020, the SSE and China Securities Index Co., Ltd. collaborated to publish green indices, including the “CSI SEEE Carbon Neutrality Index” and the “CSI 300 Carbon Neutrality Index”. As of July 10, 2023, the CSI SEEE Carbon Neutrality Index had created a total of 20 exchange-traded + over the counter + feeder fund products, with a combined size of RMB 9.205 billion. The “Shanghai Shenzhen CSI 300 Carbon Neutrality Index” eliminates from the CSI 300 Index samples those listed companies that received a rating of grade B or below in the CSI ESG evaluation. Additionally, the index favors listed companies in green sectors and those that make significant contributions towards achieving carbon neutrality. This is based on the industries and companies’ contributions to carbon neutrality, and the index weight is adjusted accordingly. As a result, the index has reduced its carbon emissions intensity on an annual basis, achieving a reduction of over 20% compared to the Shanghai Shenzhen CSI 300 Index<sup>37</sup>.



CSI's ESG Indicator System<sup>38</sup>

#### 4.2 ESG Investing in the International Financial Center of Hong Kong

Thanks to the Belt and Road Initiative, Hong Kong’s role as a hub for managing value chains in Asia and worldwide has been consistently fortified. This development provides a significant boost for Hong

34 Source: <http://www.sse.com.cn/aboutus/socialresponsibility/download/c/5720372.pdf>

35 Panda Bonds refer to RMB-denominated bonds issued by non-governmental foreign organizations or companies in the Chinese domestic market. Source: [http://stock.finance.sina.com.cn/stock/go.php/vReport\\_Show/kind/lastest/rptid/729685396344/index.phtml](http://stock.finance.sina.com.cn/stock/go.php/vReport_Show/kind/lastest/rptid/729685396344/index.phtml)

36 Source: Shanghai Environment and Energy Exchange. <https://www.cneex.com/dtfw/ljsjr/lzsq/zzshhjstzhzs/>

37 Source: China Securities Index releases CSI 300 carbon neutral index. <https://new.qq.com/rain/a/20220211A07QZE00>

38 Source: Shanghai Stock Exchange 2022 Social Responsibility Report. <http://www.sse.com.cn/aboutus/socialresponsibility/download/c/5720372.pdf>

Kong to establish itself as an international financial center.

According to the Global Financial Centres Index 33<sup>39</sup> (GFCI 33 Rank), Hong Kong ranks 4th among 120 international financial centers in terms of financial competitiveness, second only to Singapore in the Asia-Pacific region. Hong Kong's economic functions in the world and international competitiveness in trade, logistics, business, professional services, and finance, coupled with its status as a "domestic and overseas" city, position it as a key player in China's BRI development strategy and ESG investing. It will take on a significant role in linking international financial centers along the BRI route.

In recent years, Hong Kong has been actively promoting sustainable finance and ESG practices in its efforts to establish itself as a leading international financial center, with a view to taking the lead in sustainable finance in Asia. Hong Kong serves as a significant international financial center and offshore RMB hub. It is also among the world's top green bond markets. Since the issuance of the first green bond in 2015, Hong Kong's green bond issuance had soared from USD 300 million to USD 38 billion by the end of 2022, with USD 12 billion of green bonds issued in 2022 alone. There were 77 recognized ESG funds in 2021, representing a 43% increase from 2018. Hong Kong ranks 37th out of 86 global cities in the Global Green Finance Index (GGFI 11)<sup>40</sup> published in 2023.

Only three asset custodians and 65 (3.6%) asset managers in Hong Kong have signed PRIs for ESG investing. In contrast, companies listed on the HKEX exhibit a significant level of ESG disclosure. By the close of 2020, the Hong Kong Stock Exchange listed 2,538 companies, over 85% of which had disclosed their annual ESG reports. The major local banks in Hong Kong have long been implementing environmentally sustainable financial practices. Thanks

to sustainable policies under the Belt and Road Initiative and the global trend of ESG development, these banks have heightened their investment in sustainable finance and implemented more comprehensive ESG practices.

In terms of trading of ESG investing, the main trading platforms in Hong Kong are Hong Kong Exchanges and Clearing Limited and the Sustainable & Green Exchange. The development of a carbon trading platform is still in the research stage. Hong Kong Exchanges and Clearing Limited (HKEX) serves as the primary market platform for fostering the growth of the ESG ecosystem. It has launched a green finance framework along with a selection of green and sustainable finance products and green finance indices. In December 2020, HKEX launched the Sustainable and Green Exchange (STAGE), which provides investors with access to green bond investments in RMB, HKD, and USD. As of July 2023, over 120 green bond products and 11 green ETF products had been registered on STAGE, with over USD 49.9 billion of green bonds issued.

To develop a carbon trading platform, Hong Kong presently focuses on developing a cross-border trading system for the unified carbon market of Guangdong, Hong Kong, and Macao. This involves creating channels for domestic and foreign trading in the carbon market and linking countries along the BRI route to bring global investors into China's domestic carbon market. In 2022, HKEX launched Core Climate, Hong Kong's international carbon marketplace, aiming to facilitate effective and transparent trading of carbon credits and instruments to support the global transition to Net Zero.

In terms of professional organizations, the Hong Kong Quality Assurance Agency (HKQAA) is an independent, non-profit-distributing certification body in Hong Kong that promotes the growth of businesses and organizations in the realms of quality, environment, and sustainability. Hong Kong also boasts numerous social organizations that play a vital role in supporting ESG education, developing talent, providing vocational training, promoting ESG and green finance concepts, conducting research, and facilitating industry exchanges. As for tertiary education institutions, the

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39 Source: GFCI 33 Rank - Long Finance. (<https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/gfci-33-explore-the-data/gfci-33-rank/>)

40 Source: <https://www.longfinance.net/programmes/financial-centre-futures/global-green-finance-index/>

Centre for Business Sustainability (CBS) of the Chinese University of Hong Kong and the Research Institute for Sustainable Urban Development of the Hong Kong Polytechnic University have developed the Hong Kong Business Sustainability Index.

In terms of ESG regulation, the Hong Kong Monetary Authority is dedicated to incorporating sustainability factors into its decision-making processes, daily operations, and practices to encourage sustainable development. The Securities and Futures Commission (SFC) of Hong Kong, another significant regulator, has integrated ESG principles into its operational decision-making and management practices. This includes the implementation of environmental protection concepts in daily operations and adhering to the “4R”<sup>41</sup> principle. The Hong Kong Financial Services Development Council is responsible for promoting the development of Hong Kong’s financial sector.

The Hong Kong SAR Government places significant emphasis on ESG development, transitioning ESG regulatory requirements from the previous “general disclosure” to the current “mandatory disclosure + explanation for non-compliance”. Since 2016, the Hong Kong SAR Government has increased its focus on promoting ESG and sustainable development by introducing a series of policies, laws and regulations to enhance corporate disclosure of ESG information. Meanwhile, the regulatory scope has gone beyond listed companies to include all companies.

In September 2018, the SFC published its Strategic Framework for Green Finance, which encompasses three key aspects: enhancing ESG (especially environmental and climate risks) disclosures and considerations, promoting the development of green or ESG-related investment products, and positioning Hong Kong as a global green financial center. In August 2022, the SFC published the Agenda for Green and Sustainable Finance, which details its plan to enhance the status of Hong Kong as a regional center of sustainable finance, prioritizing corporate

disclosure, asset management, ESG funds, and carbon markets. In April 2023, the SFC announced its goal to become a carbon-neutral organization by 2050, which is in line with the Government’s strategy set out in Hong Kong’s Climate Action Plan 2050. An interim target of reducing its total carbon emissions by 50% by 2030 was also announced.

**Table 8 Key ESG Policy Measures Adopted in Hong Kong<sup>42</sup>**

Time	Key Policy Measures
September 2018	The Securities and Futures Commission of Hong Kong publishes its Strategic Framework for Green Finance, which sets out a five-pronged strategy for the development of green finance in Hong Kong.
July 2020	ESG disclosure requirements for IPO projects listing in Hong Kong.
May 2021	The HKMA releases the Green and Sustainable Finance Grant Scheme to subsidize the expenses incurred by eligible bond issuers and borrowers with regard to debt issuance and external assessment services.
August 2022	The SFC publishes the Agenda for Green and Sustainable Finance.
April 2023	The SFC announces its goal to become a carbon-neutral organization before 2050, with an interim target of reducing its total carbon emissions by 50% by 2030.

Overall, the ESG market in Hong Kong is still in its early stages of growth, but in the past few years, a range of ESG investing products have been introduced. In the realm of green bonds, Hong Kong’s local market has stepped up the issuance of ESG and sustainability bonds and has expanded the range of these products. With an increasingly mature market ecosystem, Hong Kong has emerged as a leading center for green bond issuance in Asia.

41 Reduce, Reuse, Repair and Recycle

42 Source: Based on the official website of Hong Kong Exchanges and Clearing Limited and public information on the Internet



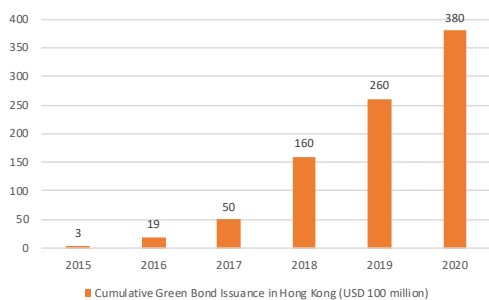


Figure 2 Overview of Green Bonds Issued in Hong Kong

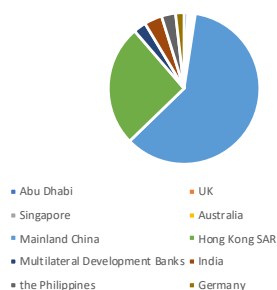


Figure 3 Regional Structure of Green Bond Issuers in Hong Kong<sup>43</sup>

### 4.3 ESG investing in the international financial center of Singapore

Singapore is the third-largest financial center in the world and serves as a gateway to the ASEAN market for companies worldwide. As of 2022, Singapore had remained China’s primary source for new investment for nine consecutive years. The country plays a crucial role in China’s efforts to advance the Belt and Road Initiative. Singapore, known as the “Garden City”, has achieved impressive advancements in sustainable development.

Singapore Exchange (SGX) is Singapore’s primary stock exchange and one of the world’s leading capital markets. SGX has been advancing sustainable finance and ESG investing. First, SGX provides an array of sustainable financial products and services in the fields of securities, fixed income, equity derivatives, futures and indices. Second, SGX has taken steps in three areas: requiring companies to disclose sustainability reports, developing a roadmap for climate

43 Source: CBI

information disclosure, and providing a platform for public consultation. Finally, SGX, as an organization, discloses its own Sustainability Report (SR), policies and statements.

In addition, SGX has established a robust ESG financial ecosystem with the Monetary Authority of Singapore (MAS), the three major local commercial banks<sup>44</sup>, the Government of Singapore Investment Corporation (GIC), Singapore’s sovereign wealth fund Temasek, and various other financial service providers.

In recent years, the Government of Singapore has introduced many policy measures to promote the development of a sustainable financial ecosystem. Additionally, Singapore has implemented several initiatives including the Sustainable Bond Grant Scheme, the Carbon Pricing Act and the Green & Sustainability-Linked Loan Grant Scheme to facilitate sustainable development projects and promote a low-carbon economy. The formulation and implementation of these policies and regulations can improve the ESG performance of Singaporean companies, attract sustainable investment, and promote sustainability and green finance in BRI projects. This is crucial for bolstering regional influence and actively participating in the Belt and Road Initiative.

Table 9 Key ESG Policy Measures Adopted in Singapore<sup>45</sup>

Time	Key Policy Measures
2001	The Code of Corporate Governance is issued by the Monetary Authority of Singapore. Subsequently, it was revised respectively in 2005, 2012, and 2018.
2011	SGX releases the Policy Statement and Sustainability Reporting Guide, which encourages listed companies to commit to sustainability reporting.
2016	SGX releases a new version of its Sustainability Reporting Guide, mandating that listed companies publish a sustainability report for ESG disclosure for fiscal years ending on or after December 31, 2017.
2017	The Monetary Authority of Singapore launches the “Sustainable Bond Grant Scheme” to encourage green bond issuance.

44 These include the United Overseas Bank (UOB), Development Bank of Singapore (DBS) and Oversea-Chinese Banking Corporation (OCBC).

45 Source: compiled based on publicly available information

Time	Key Policy Measures
2018	The Parliament of Singapore approved the Carbon Pricing Act to introduce the carbon tax on companies with high levels of emissions.
2019	The Monetary Authority of Singapore launches the Green Finance Action Plan with four strategies for the country's green finance development.
2020	The Monetary Authority of Singapore announces the launch of the "Green & Sustainability-Linked Loan Grant Scheme".
2021	SGX launches a phased approach to mandatory climate reporting.

Green finance in Singapore involves primarily green credit and green bonds. The total green bond issuance has reached USD 6.2 billion. Green lending showed a significant growth in 2019, amounting to USD 4.4 billion, marking a fourfold increase from the previous year and accounting for approximately half of ASEAN's total loans. Singapore also holds a considerable portion of the green bond market. According to ASEAN, as of March 2020, Singapore had issued a total of 11 sustainability-themed bonds, including USD 3.978 billion-worth nine green bonds and USD 20 million-worth two social impact bonds. According to statistics, 52% of the funds raised for green initiatives through bonds and borrowing are allotted to projects related to green buildings. Singapore City Development Limited and DBS have respectively issued Singapore's first and second green bonds respectively.

Singapore's green indices are represented by the iEdge Singapore Low Carbon Indices and the iEdge SG ESG Indices. The iEdge Singapore Low Carbon Index<sup>46</sup> tracks globally-listed companies domiciled or incorporated in Singapore that represent the real and financial sectors of Singapore. The index provides an opportunity for investors to reduce the carbon footprint of their investment portfolios. The index uses an exclusionary methodology to remove companies that have a heavy involvement in the fossil fuels sector, while upholding best-in-class selections based on greenhouse gas emissions per unit of revenue. The largest selected companies by market capitalization will constitute the index. The iEdge SG ESG Indices<sup>47</sup>

46 iEdge Singapore Low Carbon Indices  
47 iEdge SG ESG Indices

comprise liquid SGX-listed stocks, and are screened by Sustainalytics in accordance with transparent ESG criteria. These include the iEdge SG ESG Leaders Index<sup>48</sup> and the iEdge SG ESG Transparency Index<sup>49</sup>. The former measures the performance of stocks in the leaders index, while the latter measures the performance of stocks in the broad sustainability index. Both indices are ESG-factor indices with a weighting tilted toward the company's ESG rating as provided by Sustainalytics.

Singapore's two biggest sovereign wealth funds are ranked among the top ten worldwide. Temasek Holdings (Temasek), a representative sovereign wealth fund of Singapore, manages the foreign exchange reserves and investment portfolios on behalf of the Government of Singapore while investing in a diverse group of global assets. Temasek evaluates investment risks related to sustainability and identifies associated opportunities using an environmental, social, and governance framework. With respect to its portfolio, Temasek targets to reduce the net carbon emissions to half of the 2010 levels by 2030, with the ambition to achieve net zero carbon emissions by 2050. In the 2023 GSR Scoreboard, Global SWF assessed the GSR performance of 100 Sovereign Wealth Funds (SWFs) and 100 Pension Protection Funds (PPFs). The overall ranking is led by Temasek.

In regard to environment and sustainability, Temasek's sustainability strategy focuses on addressing climate change while also expanding its efforts to other areas related to sustainable development, such as nature conservation and social inclusion. The carbon intensity of Temasek's portfolio decreases annually as it invests in greener and more sustainable projects. Temasek targets to achieve net zero carbon emissions across all its portfolios by 2050. Temasek's ESG investments and business practices encompass several crucial areas, such as sustainable investing, carbon reduction, renewable energy, carbon credit exchanges. Meanwhile, Temasek gives priority to employee support and diversity in its business practices. These initiatives

48 iEdge SG ESG Leaders Index  
49 iEdge SG ESG Transparency Index

help to advance sustainable development and reduce environmental impacts.

**Table 10 Carbon Intensity and Total Emissions of Temasek’s Portfolio**

Indicator	Unit	18A	19A	20A	21A	22A	30T	50T
Carbon intensity of the portfolio	tCO <sub>2</sub> e/SSm value	NA	NA	130.0	103.0	81.0	NA	NA
Total emissions of the portfolio	MtCO <sub>2</sub> e	NA	NA	30.0	30.0	26.0	11.0	0.0

Temasek considers sustainability-related evaluation criteria when selecting investment targets. Furthermore, the company evaluates businesses that have implemented low-carbon business models, and also focuses on those working to achieve negative carbon emissions and providing solutions for addressing climate change. Temasek is ramping up its investment in various sectors that respond to current trends, such as energy, environmentally-friendly transportation, food, materials, water, waste, and the built environment. These initiatives show the company’s commitment to sustainable development and its dedication to driving innovation and progress in these fields. Temasek is committed to supporting climate resilience funds that include select funds for energy ventures and Brookfield’s Global Transition Fund. Additionally, Temasek’s dedication to sustainable investment and active engagement is highlighted by the creation of impact investment funds in partnership with companies such as Leap Frog Investments and ABC Impact.

Temasek also places significant emphasis on establishing a sustainable investment platform. Temasek and EQT Infrastructure have established O2Power, a renewable energy platform aiming to develop utility-scale renewable energy projects in India, including solar, wind, and hybrid energy projects. Collaboration of this nature can stimulate the advancement of renewable energy sources, reduce reliance on conventional energy sources, and promote the application of low-carbon energy sources. Temasek has also created investment platforms like Pentagreen Capital and GenZero, aimed

at pushing the growth of eco-friendly infrastructure and the adoption of decarbonization solutions. The creation of these platforms will facilitate financing and investment for sustainable development and mobilize greater support for sustainable development projects. In addition, Temasek collaborated with DBS, Singapore Exchange and Standard Chartered Bank to launch Climate Impact X, a global exchange and marketplace for high quality carbon credits. Through this platform, Temasek encourages companies to adopt low-carbon and carbon-neutral practices while promoting the growth of carbon markets globally.

As an international financial center, Singapore boasts a robust market presence and a well-established regulatory and market system. Stakeholders in the country proactively engage with the national strategies of China and its neighboring nations at various levels, particularly to align with and collaborate on China’s regional strategies and the Belt and Road Initiative. The two sides collaborate on practical investment projects and initiatives for cross-border investment and financing to improve the level of shared benefits and risks.

### 5. An Outlook on ESG Investing in International Financial Centers under the Belt and Road Initiative

International financial centers in all countries are trending towards sustainability and inclusivity. Developing ESG investing and financing systems and enhancing ESG investing and financing-related capacity building have become a widely accepted strategy for competing and growing in the international financial center landscape.

Some international financial centers along the BRI route are located in developed economies while others are situated in emerging economies. The existing economic and social conditions of these centers result in varying development characteristics of their ESG investing. The ESG investing and market systems in international financial centers in Europe have achieved a high level in institutional design, marketplace regulation, innovative products and services, and effective scalability. The ESG strategy and development of international financial centers in the Middle East align with the demands posed by their concentration

of sovereign wealth, the pressing need to transform their economies, and their prioritized regional impact objectives. International financial centers in Asia, particularly Hong Kong, Shanghai, and Singapore, strive to cater to and sway their particular domestic and regional markets.

The fundamental principle of incorporating ESG factors into investing and financing regarding the Belt and Road Initiative is indisputably based on marketization and transparency. With a high level of standards, a sound regulatory framework and a strong market ecosystem, international financial centers can provide all the necessary solutions and participants in areas ranging from institutions, innovations, information and transactions to regulation and risk management, to support the thriving ESG investing activities. They serve as a crucial foundation and guarantee for the development of ESG investing and financing under the Belt and Road Initiative.

In the future, international financial centers along the BRI route should enhance their connectivity and interaction in ESG investing, particularly through coordination and cooperation with emerging markets like China at various levels.

To enhance institutional connectivity, supervisory and policy authorities in international financial centers must improve mutual learning and interaction through information sharing, coordinated actions, and multilateral cooperation. This will enable a better understanding of each other's current institutional and policy development status, as well as challenges hindering cooperative efforts, and facilitate the pursuit of consensus and solutions.

To improve market connectivity, regulatory and

governmental authorities in international financial centers should urge their respective governments and regulatory decision-making bodies to support the expansion of market connectivity efforts led by market players. This will promote innovation in capital, credit, money, and commodity markets related to ESG and sustainable financial products while also enhancing interaction and cooperation.

To enhance cross-border investment and financing, international financial centers should facilitate product and service innovation through the existing financial market structure. In addition, they should develop favorable institutional, regulatory, innovative, and service platforms, creating an outstanding business enabling environment for sustainable finance and ESG investing. Furthermore, it is crucial to enhance risk management, comply with data regulations, implement anti-money laundering measures, administer taxes and foster regulatory collaboration across international financial hubs. These efforts will ensure a comprehensive approach to promoting and safeguarding cross-border investment and financing.

As the initiator of the Belt and Road Initiative, China can utilize the benefits and convenience of global financial centers to offer more top-notch "public goods" that cater to ESG investing, including capacity building, innovative products, regulatory convergence, policy coordination, and in-depth research on information. These goods will facilitate sustainable development and inclusive growth in countries along the BRI route, and around the world. The positive impacts of the Belt and Road Initiative must be extended to additional countries and markets through ESG investing, ultimately increasing well-being for both the region and the global community.





# BFA Showcases



## SABIC: From Strength to Strength Under the BRI

### SABIC

Over the past decade, the world has witnessed a close alignment between the BRI and Saudi Arabia's Vision 2030 strategy. In fact, it is from the creation of the BRI in 2013 that China became Saudi Arabia's largest trading partner, and in 2022, Saudi Arabia became China's first 100-billion-dollar trading partner in the Middle East. That same year, the two countries recorded bilateral trade of 116.04 billion USD, up 33.1% YoY, and in the first quarter of 2023, this number reached 27.33 billion USD, up 9.7% YoY. As one of the world's largest chemical companies, SABIC has played

an important role in fostering China-Saudi economic and trade cooperation and promoting the BRI.

For almost 40 years in China, SABIC has enjoyed rapid expansion to include not only a technology center in Shanghai but also three compounding plants in Shanghai, Guangzhou, Chongqing and two joint ventures - one established with SINOPEC in Tianjin and the other with Fujian Energy Petrochemical Group in Fujian, with operations in 17 cities across the country. Thanks to the support of the BRI, SABIC's



SABIC and SINOPEC announced the commercial operation of a new PC plant





SABIC Technology Center Shanghai

cooperation with China has further deepened. Among them, SINOPEC SABIC Tianjin Petrochemical Co. Ltd. (SSTPC), a joint venture of SABIC and SINOPEC, is one standout example.

In 2005, eyeing great potential in the Chinese market, SABIC made original approaches to SINOPEC and the two companies began meeting on a regular basis to negotiate the ultimate form of the venture. Finally, at the end of 2005, the efforts between both SABIC and SINOPEC bore fruit with the approval of the SINOPEC Tianjin Refining and Chemical Integration Project by the National Development and Reform Commission. In 2008, SABIC and SINOPEC signed an investment agreement that outlined the scope of the joint venture for the first time. In 2009, SSTPC was officially established, and in 2010, the first facility was put into commercial operation focusing on products including chemicals and polymers to be supplied to different major domestic markets.

Grasping the emerging opportunities fostered by the BRI, in 2017, SABIC further deepened partnership

with SINOPEC – in the presence of the leaders of both China and Saudi Arabia, SABIC and SINOPEC signed another strategic agreement to study JV petrochemical projects in China and Saudi Arabia targeting downstream key markets.

In 2019, the SSTPC's major production facility underwent its first expansion and upgrade, building on a cumulative production of more than 10 million tons of ethylene. Supported by nine sets of advanced, world-class large-scale production equipment, the annual production capacity of the facility jumped from 1 million to 1.3 million tons following the expansion and upgrade, putting the production capability of a single device at the plant among the highest within China.

Since then, capitalizing on the ongoing development of the BRI, 260,000-ton-per-year polycarbonate (PC) project has been put into construction with a total investment of more than 10 billion renminbi. PC is a transparent, high-impact, and strong yet lightweight material, used widely in sectors such as electrical and electronics, consumer goods, automotive, building and construction, and healthcare. In September 2023, SABIC and SINOPEC announced the commercial operation of this new PC plant, marking the arrival of SABIC's advanced PC technology to China where future PC products will be prioritized for supply within the Greater China region.

The operation of the plant will not only create more investment opportunities across the petrochemical industry and spur high-quality economic growth in Tianjin and beyond, but it will also meet the growing needs of the Chinese public and emerging industries, renewing SSTPC's ongoing contributions to the BRI by providing more high-end, innovative materials to the Chinese market. [↓](#)

## Yili Builds Dairy Silk Road for World Health

### Inner Mongolia Yili Industrial Group Co., Ltd

The Belt and Road Initiative (BRI) created an unprecedented opportunity for Chinese enterprises to go global. In line with the BRI, Pan Gang, chairman and president of Yili Group, proposed the vision of sharing health with the world and called upon all parties involved to hold talks on health topics, jointly build a health ecosystem, and share health achievements, ultimately forming a global health biosphere with all partners on the global industry chain. By doing so, Yili aims to open up a dairy silk road that will bring health to everyone in the world with Yili's quality products, the healthy lifestyle Yili advocates, and the kindness Yili holds out to all.

In the company's attempts to build this dairy Silk Road, Yili adheres to high standards, sustainability, and localized operation so that more value can be shared by partners. Currently, Yili has 15 R&D centers, 81 production bases, and over 2,000 partners in 39 countries and regions across six continents in the world. Its products sell to more than 60 countries and regions worldwide.

#### **1. Enhancing International Cooperation and Promoting Localized Operation with a Global Mindset**

Yili has always adhered to the strategy of "going global" by strengthening international cooperation with countries along the "Belt and Road", continuously implementing overseas mergers and acquisitions,

and focusing on promoting global operations. It builds its presence in overseas markets through trade, M&A, and or building of its own facilities, based on the economic conditions, market potential and size, bilateral trade ties and various other factors. In purchasing overseas facilities, Yili attaches high importance to the candidate's strategy and scale, as well as how well its businesses fit into Yili's portfolio, striving for strong synergy. In terms of brand building and global operations, Yili adheres to the core belief in localization, as it operates in a case-by-case approach and formulates targeted strategies.

The results of the construction of Yili's dairy production base in Indonesia and Yili's brand management after entering the Indonesian market are typical cases. The facility covers a total land area of 255 mu in Greenland International Industrial Center, Kota Bekasi, Jawa Barat, and mainly produces Joyday ice cream. With a investment of RMB 867 million in the Phase-I project, it is so far the largest production base built by a Chinese dairy company in Southeast Asia. The facility was completed and put into operation on December 10, 2021, thanks to the joint efforts of Yili Indonesia and its partners. As a major part of Yili's global network, the production base collaborates and shares resources with Yili's other production facilities in Asia, Europe, America, and Oceania in an all-round manner.



Yili's dairy production base in Indonesia

Yili Indonesia has over 700 employees, more than 97% of whom are local, with only some key positions filled by Chinese employees. In an effort to expand local procurement, the company has established partnerships with over 100 high-quality local suppliers of milk powder, sugar, oils, cocoa products, paper packaging and other materials. It has also been working to purchase more raw materials and excipients locally. Yili also plans to join hands with local distributors in the future to cover more than 200,000 sales outlets across Indonesia and march into the international market. Such localized operation has enabled Yili to better fit into the local society, economy and industrial chain, and share benefits with a wider range of stakeholders.

Early after its entry to Indonesia, Yili had to choose between promoting the Yili brand to the new market and creating a new brand for it. Analysis showed that the Yili brand, though quite influential in China, was little known in overseas markets so it would not help the marketing efforts. Moreover, since the international market is full of uncertainties, pushing a well-established brand to a new market may bring unexpected risks and tarnish the brand image and value. Finally, Yili launched the new brand

Joyday, positioned it according to insights into the local consumers in Indonesia, promoted it by hiring Indonesian stars as ambassadors, and delivered small chocolate-flavored products according to local preference.

Yili shared development opportunities with local enterprise upstream and downstream the industry chain. It has established partnerships with over 100 local suppliers to increase local procurement. In Indonesia, Yili is the only Chinese enterprises to win a special award at Bisnis Indonesia Corporate Social Responsibility Awards, an outstanding contribution award for revitalizing the economy, and two Brand Choice Awards in a row. Currently, Yili is among the top 3 in Thailand, in terms of ice cream brands, and in Indonesia, where it started from scratch, has entered the top 4.

Going global requires both forward-looking strategies and practical and well-targeted tactics. Linking these is the capability and resolution to deliver. Yili does everything in this process in a case-by-case approach and its tactics vary based on specific conditions.

## 2. Yielding Returns from “Global Smart Chain” to Enterprise Operations by Pooling Global Innovation Wisdom

Yili is in the process of creating a “Global Smart Chain” to underpin its global innovation system by pooling global innovation wisdom. This effort is also seen in multiple countries along the “Belt and Road”. In Europe, Yili established a Yili Innovation Center Europe at Wageningen University in the Netherlands; in Oceania, Yili established its Innovation Centre Oceania in New Zealand, and entered a strategic partnership with Lincoln University; in Asia, construction of Yili Southeast Asia Innovation Center and Japan Innovation Center is under way. At present, Yili has 15 innovation centers at home and abroad, which strive to make breakthroughs in global frontier health issues.

Driven by the two wheels of innovation and internationalization, Yili has seen its performance improve continually. According to its annual report of 2022, Yili registered a total operation revenue of RMB 123.171 billion, making itself the first dairy company in Asia to cross the 100 billion mark with 30 years of steady growth. In 2022, Yili further improved the management of its global supply chain and achieved highly efficient collaboration between its production



Yili's R&D center in Europe upgrade into an innovation center

bases in and out of China, pushing its international business revenue up by 52.2% year on year.

On August 29, Rabobank released 2023 Global Dairy Top 20 and Yili ranked among the global top 5 and secured top position in Asia for the tenth consecutive year as once again the only Chinese company in the global top 5. This represents another authoritative recognition that Yili has won after getting its fourth Brand Finance most valuable dairy brand title in a row. ⬇️

# Build the New Pattern of Green Energy Cooperation under the Belt and Road with All Our Strength

## China Energy Engineering Group Corporation Limited

Promoting green development within the Belt and Road cooperation is a significant step in actively addressing climate change, upholding global ecological security, and advancing the creation of a harmonious community between humanity and nature. Accelerating the clean and low-carbon transformation of energy and electricity is of overall significance to jointly cultivate a green background for the development of human society. As a global leader in the energy, power, and infrastructure construction sectors, China Energy Engineering Co., Ltd. (CEEC) offers comprehensive solutions and end-to-end services. CEEC leverages its expertise in integrating the entire energy and electricity industry chain and its core technological advantages, focuses on the core path of green, digital intelligence and integration led by innovation, systematically establishes a platform for “the three news” energy construction encompassing new energy, new infrastructure, and new industry, carries out in-depth bilateral and multilateral cooperation on green energy and infrastructure, continuously presents Chinese standards, Chinese design, Chinese technology and Chinese construction to the world, and fully supports and serves the green energy cooperation of the Belt and Road.

### **1.Enhance Innovation to Elevate the Green Energy Cooperation Level**

CEEC adheres to an innovation-driven approach, conducting comprehensive research and practical

applications. We extend the integrated development advantages of China's and even the world's most advanced technologies, standards, design, investment, construction, operations, and equipment to countries along the Belt and Road initiative. This effort aims to provide forward-thinking, systematic, innovative, and effective energy solutions to global customers, facilitating the transformation and upgrading of the global energy landscape.

#### ***1.1 Enhance Scientific and Technological Innovation to Lead in Green Energy***

CEEC is committed to addressing the bottlenecks in the green energy sector. Focusing on the central goals of carbon emissions peak and carbon neutrality, and supported by energy storage and hydrogen energy, we are conducting comprehensive research in key areas such as technology development, standards and regulations, system frameworks, financial models, and investment and construction. This approach has yielded a range of core technological breakthroughs, especially in fields like new energy storage, hydrogen production, storage, and transportation, high-altitude wind energy, deep-sea wind energy, and multi-energy complementarity.

CEEC has established think tank systems including the “30·60” research institute, the new energy storage innovation research institute, and the hydrogen energy research institute. We have also

taken the lead in forming alliances like the “three new” alliance, the new energy storage industry innovation alliance, the new energy industry alliance, and the new energy international investment alliance. CEEC plays a pivotal role as an integrated innovation platform that transcends regions and countries, serving as the China Liaison Office for the International Energy Agency and the China-EU Energy Technology Innovation Cooperation Office. This accelerates the development of a hub for green energy innovation and growth.

### **1.2 Drive Integrated Innovation to Ignite Fresh Energy Transition Momentum**

CEEC actively leverages high-end research outcomes, efficiently harnesses the distinctive advantages of “integration of wind, solar, water, fire, and storage”, “integration of source, grid, load, and storage”, “integration of investment, construction, and operation”, as well as green finance. We vigorously promote the integration of the “seven networks”, including energy, transportation, digital, water, ecology, industry, and culture. This effort culminates in the creation of an industrial ecosystem that encompasses the “four major fields integration” of energy, industry, transportation, construction, and digital intelligence. We are constructing a “big infrastructure” system and continually enhancing our capacity for green energy integration and development.

In countries along the Belt and Road, CEEC is dedicated to pioneering green and low-carbon



**Bukhara 1GW Wind Power Project, Uzbekistan**

development through the “green energy +” model, innovating integrated development models with new infrastructure, and establishing a value symbiosis system with “new industries.” This approach accelerates the path of transformation and development that is led by innovation, characterized by green, digital intelligence, and integration, and continuously amplifies the advantages of “three new” integrated development on a global scale.

## **2. Deepen Demonstrative Practices to Establish Exemplary Models for Green Energy Cooperation**

China Energy Construction has leveraged its high-end planning and consulting research capabilities and the integration of the entire energy and electricity industry chain. The company has invested in and constructed a significant number of influential landmark projects in countries and regions along the Belt and Road. Through tangible actions, it has driven global energy conservation and emission reduction, crafting intricate “fine brushwork” in the realm of green energy.

### **2.1 Contribute to the “Belt and Road” Energy Cooperation Plan**

CEEC took the lead in compiling and releasing the white paper on the “double carbon” solution, comprehensively docking with the long-term development plans and visions of countries along the Belt and Road, focusing on the new pattern and new trend of world energy development, relying on the resource endowments of various countries, and providing a series of original views, transformative paths and breakthrough solutions. CEEC also has led the completion of the Belt and Road energy cooperation planning research, the international production capacity cooperation planning research in the energy field, and the energy cooperation planning of which are between China and other more than 10 countries including Laos, Mongolia, Russia, and Vietnam, providing decision-making reference and effective support for international energy cooperation. CEEC wholly-owned acquisition of European well-known engineering design enterprises Empresarios Agrupados Internacional, S.A. and Ghesa Ingenieria y Tecnologia, S.A. and use its sound market channels, perfect project development system and European and American technical standard system,



Energy China took the lead on establishing International Investment Alliance for Renewable Energy

effectively driving the coordinated development of China Energy Construction in Europe, America, the Middle East, North Africa and other regions. Under the front-end traction of planning and design, in 2022, new energy investment projects with total value of more than CNY 100 Billion were carried out in Uzbekistan, Kazakhstan, Myanmar, Vietnam, Azerbaijan, Egypt, Brazil and other countries, overseas new energy contracts with total value of more than CNY 65.7 billion which account for more than 30% of the group's new international contracts were signed, ranking second in the ranking of overseas solar (photovoltaic) projects and overseas wind power projects signed by Chinese enterprises in 2022. So clearly, CEEC is a veritable main force to serve the construction of the "Green Silk Road".

## 2.2 Build "Big-Comprehensive-New" Green Boutique Project

CEEC proactively aligns itself with the global trend of green energy transformation and, in the realm of green energy cooperation, has been driving the implementation of several highly representative and influential projects. Currently, CEEC is involved in the construction of over a hundred green energy projects in countries along the Belt and Road, spanning fields such as new energy, water resources, hydropower, and ecological and environmental protection. The total contract value for these projects exceeds 150

billion CNY, accounting for approximately 40% of the total contract amount for projects currently under construction.

Among these endeavors, the Gis  Hydropower Station in Argentina stands out as the largest cooperative project between China and Argentina. The 950MW solar thermal photovoltaic power plant project in Dubai, United Arab Emirates, is currently the world's largest in terms of investment, installed capacity, and molten salt tank heat storage, constituting a "solar thermal + photovoltaic" hybrid power generation project. In the Middle East and North Africa region, the Saudi PIF 2.6GW photovoltaic power plant project takes the lead in terms of scale. The Tenger Reservoir Water Photovoltaic project in Singapore ranks among the world's largest floating photovoltaic projects. In Central Asia, the 1GW wind power project in Bukhara, Uzbekistan, is the largest of its kind. The desalination project in Um Quwain, United Arab Emirates, is the largest in Asia. These significant projects have become symbols of 'green' along the Belt and Road.

Furthermore, CEEC actively engages in new energy hydrogen production projects in the Middle East, North Africa, and Central Asia. The company has swiftly advanced major hydrogen energy projects in countries such as Saudi Arabia, the United Arab Emirates, Egypt, and Morocco. ⚡

# Deloitte China: Connecting Belt & Road Markets to Support Chinese Companies' High-quality Development Through Comprehensive Professional Services

## Deloitte China

Since President Xi Jinping proposed the BRI 10 years ago, we have seen sustained growth in China's outward direct investment, indicating Chinese companies' rapid pace of operating in overseas markets and expanding their global footprints. According to statistics from China's Ministry of Commerce, the proportion of overseas profits retained for reinvestment increased to 55.5% in 2021, while the overseas revenue of Chinese companies surpassed USD2,402.8 billion, with overseas assets totaling USD5,500 billion.

Over the past decade, Chinese companies have shifted from going global as buyers to operating as MNCs. In the early days of going global, Chinese companies focused on exploring markets, technologies, and resources, whereas in recent years they have looked more at supply chain integration and brand building, with strategic focus areas spanning manufacturing, R&D, marketing, brand, investment, M&A, and local production and operation. This manifests China's transformation of its economic growth model and industrial upgrading. Across Belt & Road markets, Chinese companies are also extending their lead in infrastructure including transportation, power, and communications, bringing benefits to the

countries where Chinese companies do business.

Deloitte's Global Chinese Services Group (GCSG) was established in 2003 shortly after China's entry into the WTO. Chinese companies' demand for outward direct investment has strengthened since 2010. Deloitte's GCSG shifted its strategic focus to cross-border M&A services for Chinese companies. During this time, Deloitte helped leading Chinese companies, including Geely, COFCO, and Lenovo, complete a batch of iconic international M&A transactions, laying a solid foundation for them to further expand their presences from developed countries to emerging markets along the Belt and Road, and optimize industrial chains and supply chains.

However, cross-border operations are a major test of corporate capabilities. For example, after an acquisition, Chinese companies often find it challenging to refine and implement the strategies designed during the acquisition. They can also have limited sources of information about the markets and operations of acquired companies. Acquired companies, meanwhile, can find business decisions take longer and it is more difficult to adapt to the management styles of their Chinese parent companies due to different corporate cultural backgrounds.





Source: Deloitte analysis

Chinese companies need to build comprehensive capabilities for cross-border operational success and grow into world-class enterprises. Based on research and interviews with more than 200 renowned MNC CEOs and the management pyramid developed from their feedback (see figure above), Deloitte Consulting has introduced the cross-border operational capability maturity model to help Chinese companies elevate their capabilities in overseas operations.

Ongoing improvement and enhancement of cross-border operations and management capabilities play a crucial role in fostering the localization of Chinese companies. For example, in 2010, Geely acquired Volvo, supported by Deloitte's provision of a suite of professional services including financial advisory and group audits. Over the past decade, Deloitte has stood by Geely's development, offering unwavering support throughout its journey. Today, Geely has transitioned from merely going global with a single-product to participating in local industrialization. Moreover, while benefiting from overseas technology and talent, it has gradually shifted toward multidimensional outputs targeting overseas industries and markets. Geely has

progressed to the third stage of Deloitte's proprietary model of key capabilities for successful cross-border operation. It has not only succeeded in investing profits from international trade into the domestic market ahead of schedule but also emerged as a pioneer in advantageous output and efficient collaboration on a global scale.

According to Deloitte's research analysis, compared to developed countries, BRI countries require greater attention across debt risks, social stability risks, comprehensive governance risks, and other areas. Therefore, Deloitte helps Chinese clients manage key issues of asset and fund security, overseas operational capabilities, and ESG system development.

For example, Deloitte China helped a large domestic Fortune Global 500 energy and coal company optimize its debt structure, reduce financial risks, and enhance financial control over overseas subsidiaries by deploying a Chief Financial Officer. This approach, combined with the characteristics of overseas businesses and financial control priorities, played a central role in standardizing overseas financial management.



Delegates of Deloitte Global Chinese Services Group from Belt and Road markets came to Shanghai in August 2023 to share professional experiences of supporting Chinese companies going global.

An industrial equipment group supported by Deloitte adhered to the guiding principles of strategic coherence, resource sharing, and independent operation after its acquisition. It appointed professional managers to strengthen financial control and help the acquired company align with the parent company's strategy, enhancing the synergy between its global headquarters and the adaptability of its overseas localization. By improving operational management

capabilities and deepening the integration of global businesses and resources, the group consistently maintained its global leadership.

With more than 20 years' experiences in sustainable development services, Deloitte has consistently provided Chinese companies with innovative, end-to-end sustainable development service solutions to integrate overseas investment and operations into international ESG frameworks. Among these, the creation of the Deloitte Environmentally Extended Input-Output (EEIO) China carbon emission factors database has received international recognition for its alignment with the BRI and won the 2022 GIP Best Supporting Organization Award from the Green Investment Principles (GIP) for the Belt and Road. Deloitte supported a Chinese client in the medical care industry in its establishment of an Environmental, Health, Safety (EHS) management system aligned with international standards including ISO 14001, the United Nations Sustainable Development Goals (SDGs), and the Global Reporting Initiative (GRI) Standard. This comprehensive system achieved environmental management, resource and energy conservation, and pollution prevention and control. 📌

# Agricultural Bank of China as A Joint Lead Bank in A Syndicate Loan Project for Dubai' s 950 MW Solar Photovoltaic Power Plant

## Agricultural Bank of China

**Summary:** Dubai's 950MW solar photovoltaic power plant is an exemplar for advancing the carbon emission reduction plan and clean energy transformation for 2050 in the United Arab Emirates. It is a key project of the Belt and Road Initiative, developed and built by Chinese company Shanghai Electric Group Company Limited as the main contractor, invested by the Silk Road Fund, is an important step for Agricultural Bank of China to actively support green projects of the Belt and Road Initiative, help the energy transformation, and ensure power security in the United Arab Emirates.

### 1. Background and Financial Demand Analysis

The 950MW solar photovoltaic power plant was located in the Maktoum Solar Park in Dubai, including a 100MW molten salt central tower-type plant and three 200MW trough solar thermal plants plus 250MW photovoltaic power plants. The project covered an area of 4,300 hectares. When completed, the project would be the largest single concentrated solar thermal power plant in the world, which could provide green electricity to 320,000 households and reduce carbon emissions by 1.6 million tons per year. It was an important step for the United Arab Emirates to achieve its carbon neutrality target by 2050. On July 20, 2018, the Silk

Road Fund and Dubai Electricity and Water Authority (DEWA) exchanged the investment agreement for the project.

The 950MW solar photovoltaic power plant syndicated loan was US \$2.5 billion in total provided by a syndicate comprising major Chinese banks, large international banks, and major local banks in the Middle East. Agricultural Bank of China, which was the head of the syndicate, provided a portion of US \$ 400 million in loans.

### 2. Project Highlights

**Work closely with engineering contractors.** Aiming at supporting the Belt and Road Initiative and circulating the concept of green financing of Agricultural Bank of China, the bank actively carried out follow-up marketing activities after the project information was announced, and worked closely with the Chinese contractors who won the project. Employing the commonly used international syndicated loan model, the bank joined the syndicate as a leading bank and ensured the timely commencement and construction of the project. Most of the units in the project have now been connected to the local grid. The photovoltaic power plants and the No. 1 trough solar power unit

are providing electricity to the grid, and the central tower-type unit is expected to be connected to the grid before the end of the year. The project construction runs normally.

**Explore local ways to provide financial support of combining equity and creditors's rights for major projects in the countries along the Belt and Road Initiative.** The project was undertaken by Chinese “go global” companies, with financial support from Chinese banks and direct equity investment from the Silk Road Fund, China’s sovereign wealth fund. This financing path combining equity and credit’s rights, in which Chinese financial institution support projects in the country along the Belt and Road, is helpful for Chinese enterprises to enter the clean energy market in the Middle East in the future. It has also increased the influence of the Belt and Road Initiative in the Gulf countries.

**Meet the needs of the local country for green energy transformation to increase financial return and social reputation.** The project would be the largest single concentrated solar thermal power plant in the world and provide clean electricity to 320,000 households, was a green energy transformation project promoted by the government of the United Arab Emirates. By supporting the project, Agricultural Bank of China’s philosophy of supporting green energy transformation and sustainable development has been recognized by the country, and its social reputation has been greatly enhanced.



Dubai's concentrated solar thermal power plant



The senior management and officers of Agricultural Bank of China assisted in the construction on the project site.

### 3. Achievements and Effects

Agricultural Bank of China has seized the opportunity in China’s Belt and Road Initiative and its strategy of internationalizing the RMB, and actively gave full play to its coordinated platform and extended service in the Middle East and North Africa regions. The project won the Best Electric Power Project Award in the Middle East and Africa in 2019 (Thomson Reuters’s Project Finance International (PFI), an international authoritative journal of project financing), the Renewable Energy Project Financing Award of the Climate Bonds Initiative and the Best Service and Practice Case Award in the China Beijing International Fair for Trade in Services in 2023. It has played a significant role in helping Chinese enterprises enter the clean energy market in the Middle East and in implementing the Belt and Road Initiative in the Gulf countries.

Following China’s plan for green financial development, Agricultural Bank of China has actively implemented the proposal of building the Green Silk Road put forward by the Chinese government, continuously improved the green and sustainable financial management and service system, and promoted the construction of green and renewable energy projects in the Middle East, which has provided more insights and clear objectives for the development of green financial business in the future. ⬇️

## China Taiping's "Insurance+Medical" Overseas Service Practice

### China Taiping Insurance Holdings Company Limited

In 2020, during the COVID-19 pandemic spread globally, a key power project of "the Belt and Road" invested in South Africa by a central enterprise had a group of Chinese engineers working to ensure the safe operation. To meet the need of the health and risk protection of the company's expatriate employees abroad, Taiping General Insurance Co., Ltd, a subsidiary of China Taiping, coordinated local medical resources in South Africa and assist the company in obtaining medical support from local medical insurance companies. Additionally, China Taiping has developed a specialized health insurance product called "Belt and Road Security" China Taiping health insurance for expatriate employees. This product provides high coverage amount with a large network of medical institutions. It provides high coverage for overseas medical expenses, with a maximum coverage amount of 16 million yuan. It allows direct settlement in over 100 medical institutions worldwide, without deductibles or waiting periods. Through the overseas medical direct payment solution, China Taiping has provided a total of 224 million yuan in COVID-19 related risk protection and global medical services to the company's expatriate employees.

China Taiping has implemented another important practice to safeguard the personal health of expatriate employees through the "Insurance+Medical" services, known as the "medical on-site" model, in Indonesia.

A core energy company from China has undertaken the construction and operation of multiple power plants in Indonesia. To address these challenges of high costs, low security, and difficulties in receiving medical treatment to expatriate Chinese employees, China Taiping's subsidiaries, Taiping Indonesia and Taiping General Insurance, carried out cross-border collaboration, and introduced the innovative "medical on-site" model, two "Taiping Medical Stations" were built at the Indonesian project site, which commenced operation in September and November 2020, providing over 3,800 diagnostic and treatment services.

To deliver high-quality "Medical+Insurance" services, Taiping Medical Station has selected international recognized medical institutions in



"Taiping Medical Station" provides ambulance services for the Indonesian project team

Indonesia with mature network systems, reliable rescue capabilities, and excellent service quality. Through Taiping Medical Station, high-quality medical services are provided directly to employees, bridging the “last mile” of emergency medical care and transportation. The medical stations, managed by professionals proficient in Chinese, English, and Indonesian, are equipped with advanced conventional medical testing equipment and offer 24/7 services, including emergency medical treatment, routine disease rehabilitation, medication supply and management, vaccination, health education, and safety and epidemic prevention supervision, etc.. This solution effectively addresses the medical challenges faced by expatriate employees. The Taiping Medical Station also benefit from the international SOS global medical transportation network, enabling cross-border medical transfers when necessary. Furthermore, in terms of policy design, the medical stations help mitigate the high costs associated with medical transportation,



Providing practical training on first aid knowledge for the staff of Indonesian project team

thereby assisting enterprises in cost control and enhancing their ability to fulfill responsibilities and manage risks. In addition, the medical stations engage top international risk engineers, professional safety protection experts, and internationally renowned rescue organizations to conduct regular safety protection and emergency rescue training for enterprises. ⬇

## “Digital Silk Road” Brings the Light of the Internet into Thousands of Households

### ZTE Corporation

“Decent Life” is a multi-field and multi-pronged comprehensive initiative aimed at improving the quality of life of rural residents in Egypt. The initiative was launched by Egyptian President Sisi in 2019, involving residential housing, infrastructure, medical services, education Services, environmental protection and many other aspects. Over the past four years since the initiative was launched, the Ministry of Communications of Egypt has led four major telecom operators in Egypt to make great efforts to improve the construction of optical network infrastructure, improve mobile network coverage, bridge the digital divide between urban and rural areas, and improve the lives of 58 million Egyptian people. Among them, the cooperation between ZTE and Egypt Telecom, a major fixed-network operator in Egypt, has made remarkable achievements. Through the construction of the Digital Silk Road, the light of the network has been brought to thousands of households.

Telecom Egypt is committed to promoting wired communications through the installation of fiber optic cables. Its “decent life” investment amounted to 5.8 billion Egyptian pounds, aiming to provide high-speed broadband connections for government agencies and citizens, and promote education, health, Digital services such as food subsidies have entered thousands of Egyptian families. In recent years, the Egyptian government has actively promoted the implementation of the “Decent Life” initiative in order to improve rural infrastructure construction and living standards. As

one of the important companies participating in the construction of this project, ZTE actively responded to the national “Belt and Road” initiative and the call for the construction of “Digital Silk Road”, gave full play to its own advantages in information and communication technology, combined with the needs of the national village communication plan, and cooperated with Egypt Telecom Ministry of Communications and Telecom Egypt jointly promote the innovative deployment and application of all-optical communication networks in Egypt.

By the end of 2022, ZTE has provided high-speed broadband service network coverage for more than 1,500 villages, serving nearly 10 million people in Egypt. The average Internet speed has increased from 0.95 Mbps in 2016 to 33 Mbps in 2022, which has basically met the needs of rural families. Bandwidth requirements for various usage scenarios. With the rapid progress of the project, its social benefits are also gradually revealed. Villagers access the high-speed Internet through the optical transmission network, obtain the latest information, learn and master new technologies, improve agricultural productivity and production efficiency, and use e-commerce platforms to achieve transactions, greatly improving the living standards and happiness of rural residents.

The senior leaders visited Galbia Province, Egypt, He also expressed his sincere gratitude to all the



The opening ceremony of the first village of "Decent Life" project between Telecom Egypt and ZTE

engineers and experts who participated in this great project. They overcame difficulties and obstacles, tried their best to promote and implement the project process around the clock.

In addition, ZTE attaches great importance to talent training and skill transfer, creating thousands of local jobs, and sent a large number of outstanding ICT talents to the Egyptian Ministry of Communications and Egypt Telecom. In the decent life project, local employees accounted for 90% of the total team. The company's mission of "To enable connectivity and trust everywhere" infects me and makes me more confident and passionate to realize my ideals and achievements. feelings, to help our people achieve a better life." , we all have the simple desire to strive for a happy life even though we are from different countries and speak different languages. Though separated by thousands of miles, our heart are strongly connected, which is the best embodiment of the value of the "Belt and Road" cooperation between China and Egypt. While promoting



ZTE Egypt for Communications participated in the Fifth Charity Month Activities of Ramadan

China-Egypt economic and trade cooperation, ZTE has not forgotten to give back to the local society. This act of kindness fully reflects ZTE's sense of social responsibility. The brand project of fulfilling social responsibility in Egypt has established a good image of Chinese people in Egypt.

Wu Lei, CEO of ZTE Communication, said: "Decent Life" is an important impetus to eliminate the differences in network infrastructure between urban and rural areas, promote the harmonious development of Egypt's cities and villages, and achieve mutual benefits in economic, social, cultural and other aspects. ZTE will actively participate in the "Decent Life" village communication plan in Egypt, promote the construction of an all-optical communication network, help the modernization process of rural areas in Egypt, and enable the "light" of the network, the "light" of digital, and the "light" of China-Egypt friendship shine into thousands of households. 📌





