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AMRO Annual Consultation Report

China - 2019

The ASEAN+3 Macroeconomic Research Office (AMRO)

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Acknowledgments

1. This Annual Consultation Report on China has been prepared in accordance with the functions of AMRO to monitor and assess the macroeconomic status and financial soundness of its members; identify relevant risks and vulnerabilities; report these to member authorities; and if requested, assist them in mitigating these risks through the timely formulation of policy recommendations. This is being done in accordance with Article 3(a) and (b) of the AMRO Agreement.

2. This Report is drafted on the basis of the Annual Consultation Visit of AMRO to China from July 08 – 16, 2019 (Article 5(b) of the AMRO Agreement). The AMRO Mission team was headed by Dr Chaipat Poonpatpibul, Group Head and Lead Economist. Members included Dr Ong Li Lian (Lead Economist), Dr Simon Liu Xinyi (Economist), Dr Zhiwen Jiao (Economist), Mr Foo Suan Yong (Senior Expert), Dr Wei Sun (Financial Sector Specialist) and Mr Justin Lim (Researcher). The Report is approved by Dr Hoe Ee Khor, AMRO Chief Economist.

3. The analysis in this Report is based on information available up to 31 August 2019.

4. By making any designation of or reference to a particular territory or geographical area, or by using the term "member" or "country" in this Report, AMRO does not intend to make any judgments as to the legal or other status of any territory or area.

5. On behalf of AMRO, the Mission team wishes to thank the Chinese authorities for their comments on this Report, as well as their excellent meeting arrangements and hospitality during our visit.

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Executive Summary

1. The Chinese economy continues to face downward pressure, but the growth moderation has been gradual as a result of stimulus measures. The China-U.S. trade tensions and the deleveraging process have continued to weigh on the Chinese economy. The authorities responded by cutting taxes and fees and easing monetary conditions, and growth has held up relatively well through H1 2019 at 6.3 percent year on year (yoy), albeit slower than the 6.5 percent in 2018.[1]

2. Consumption has also moderated, but continues to be the main source of support for the economy. Export growth, after adjusting for imports, has declined sequentially due to the trade tensions. Investment has also moderated, with manufacturing and infrastructure investment slowing down substantially, in part due to the deleveraging. Consumption has been moderating at a slower pace, with consumption in services showing resilience.

3. Consumer price index (CPI) inflation has picked up due to rising food prices, but it is expected to remain contained amid tepid demand. CPI inflation rose to 2.8 percent in July 2019 from 2.1 percent in 2018**.** Pork prices have shot up due to the African swine fever outbreak and will remain high over the near term. However, core CPI inflation has been low and stable due to subdued demand and this will likely continue moving forward.

4. The unemployment rate has ticked up and the pressure on employment is increasing. Employment has continued to grow, predominantly in the services sector. However, because of the slowing economy, the unemployment rate has edged up slightly. It will be more challenging in terms of creating good jobs if the economic slowdown is significant, but the unemployment rate is likely to remain stable, given declines in working age population and labor participation rate.

5. The current account has remained in surplus, and foreign reserves are stable and adequate. Although exports declined, weak imports of both goods and services lifted the current account surplus in H1 2019 to 1.6 percent of GDP. Inflows of foreign direct investment have remained resilient. Portfolio investment inflows have been strong due to China's further opening-up of the capital account and financial sector.

6. Total social financing (TSF) growth has picked up. The People's Bank of China (PBC) has used a combination of broad-based and targeted instruments, such as the reserve requirement ratio and the Targeted Medium-term Lending Facility (TMLF), to support expansion of credit to targeted segments and provide liquidity to the financial market. These measures have eased monetary conditions while offering support to small and medium enterprises (SMEs) and the rural economy. As intended, TSF growth was lifted to 10.7 percent (yoy) in August 2019, and loans to SMEs have been growing more quickly, reversing the trend in 2018.

7. Government expenditure has grown at a more rapid pace to support the economy, while government revenue has slowed markedly due to the significant tax and fee cuts. The overall general government fiscal deficit is expected to rise from 2.6 percent of GDP in 2018 to 2.8 percent in 2019. On the other hand, infrastructure financing, most of which is not included in the general government budget, has been supported by an increase

[1] Regarding the analysis of the impact of COVID-19 on China's economy and policy implications, please refer to the analytical note "The Impact of the Coronavirus Epidemic on the ASEAN+3 Economies"

in Local Government Special Bond financing, but constrained by statutory budget revenue of the government.

8. Overall risks have increased in the near term and will potentially persist into the medium term, attributable to both external and domestic factors:

- **The economy could weaken more significantly** if the trade tensions were to escalate further, with a greater impact on export-oriented manufacturing firms.

- Weaker growth could **impact employment**, particularly in the traditional manufacturing sector and SMEs.

- The trade tensions will **accelerate the relocation of labor-intensive production activities and some parts of the electronics industry** away from China, to ASEAN economies with lower wages and abundant skilled workers. The impact on production which involves global value chains (GVCs) and has been centered in China so far will likely be long lasting, as the tensions have extended beyond the trade area to technology and intellectual property rights (IPR).

- Given the high level of corporate debt, a further slowdown of the economy could cause **higher defaults and difficulties for some corporates** in refinancing.

- **The overall risks of Chinese small and medium-sized banks should be manageable, though the credit and liquidity risks of some of them are high, and the spillovers could be significant** as these banks are interconnected among themselves as well as with non-bank financial institutions (NBFIs). This was demonstrated by the disruption in the interbank market during the Baoshang Bank incident in May-June 2019.

- **To contain the economic slowdown while guarding against macroeconomic and financial stability risks, China has adopted a set of comprehensive measures:** (1) proactive fiscal policy measures, (2) easing of monetary and liquidity conditions, (3) increasing credit to SMEs, (4) continued financial deleveraging and (5) maintenance of tight macroprudential policy settings. These measures are aimed at ensuring that growth would stay within the target range, emerging macroeconomic and financial risks would be adequately contained to mitigate their impact on growth, and the property market would be relatively stable.

9. The strong fiscal policy package has provided support for the economy and averted a sharp slowdown, and its impact on consumption and investment is expected to increase in the later part of 2019 and 2020. We assess that the tax and fee cuts will lift GDP growth by about 0.5 percentage point on an annualized basis. Looking ahead, any additional fiscal stimulus measures to mitigate the impact on growth of a further escalation in trade tension should be targeted and aimed at maximizing its multiplier effect.

10. Authorities should ease monetary policy further if growth were to slow significantly in the near term. In our view, the authorities' current monetary policy mix is appropriate but it could be more accommodative if the economic outlook worsened. The PBC has also enhanced monetary policy transmission by strengthening the role of the loan prime rate as the benchmark for banks to set their own lending rates. Such ongoing reforms on the interest rate front should be strengthened further, to ensure that adjustments in the policy rate are transmitted through the financial system effectively.

11. The authorities should continue to be mindful of the risk of contagion among the small but highly-interconnected financial institutions, while pressing ahead with efforts to further reduce moral hazard in the financial sector and to continue the financial deleveraging. This risk should be further addressed through well-coordinated efforts by all relevant regulators. AMRO welcomes the authorities' efforts to enhance the soundness of the banking system by facilitating the strengthening of banks' capital and risk management practices.

12. Local governments should issue more special bonds to support the development of public welfare projects with certain economic and social returns. We welcome the authorities' decision to use proceeds from special bonds issuances for infrastructure investment, instead of using them for industrial projects or debt swaps.

13. The allocation of fiscal resources including transfer payments to poorer economies, should be strengthened further to enhance inclusiveness. This is essential for some poorer regions where it is challenging for the local governments to attract private investment. Moreover, the recent policy shift to enhance the role and capacity of key cities and city clusters may widen income gaps between them and the less developed local economies.

14. Authorities need to monitor and resolve the fiscal risk of regions with weak debt repayment capacity. Amid downward pressure on the economy, the authorities need to tackle the risk posed by LGFVCs in a timely and decisive manner to contain the fiscal burden, reduce moral hazard, and contain the risk.

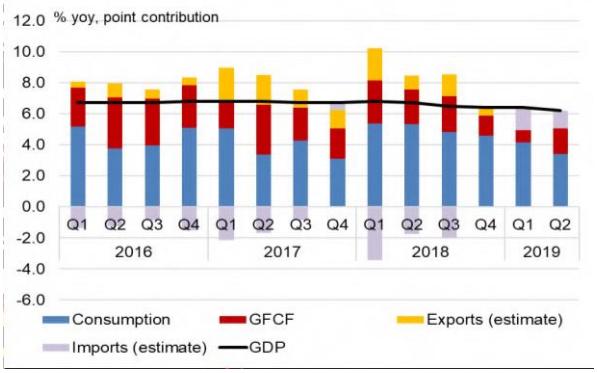
15. For the longer term, economic policy should facilitate the transition to a technology and innovation-driven economy and address the challenges of an ageing population. China is developing a few world-class city clusters, such as the Greater Bay Area, which will spur economic development as well as innovation. At the same time, China should further strengthen state-owned enterprises (SOEs) and market-oriented reforms to improve governance and resource allocation. We support the authorities' commitment to uphold the rules-based multilateral trading system, strengthen the IPR protection framework, and accelerate the opening-up of the economy.

A. Recent Developments and Outlook

A.1 Real Sector Developments and Outlook

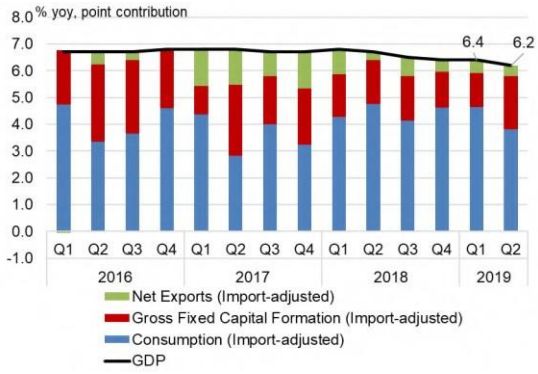
1. **The Chinese economy is facing significant downward pressure that will continue to weigh on growth.** Since mid-2018, there has been a series of shocks stemming from the China-U.S. trade conflict. In particular, the United States has imposed four rounds of additional tariffs, and even higher tariffs may become effective on December 15 of 2019 if the ongoing negotiations falter. The domestic economy has also been affected by a financial deleveraging process pursued by the government to maintain stability of the financial system and ensure the sustainability of economic growth over the longer term. Recent high-frequency data, including trade, the purchasing managers' index (PMI), industrial production and profits, suggest that the growth momentum is still weakening.

Figure 1. Real GDP Growth, Conventional Method



Source: WIND, NBS, AMRO staff estimates

Figure 2. Real GDP Growth, Import-Adjusted



Source: WIND, OECD Trade in Value Added, AMRO staff estimates

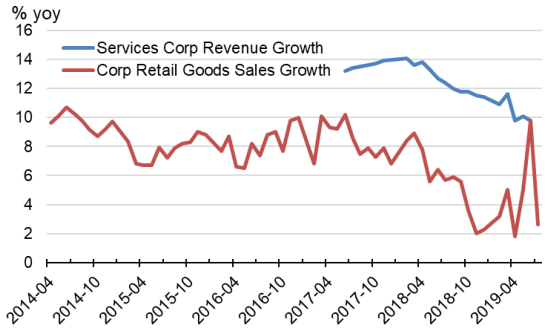
2. **Growth has moderated but held up relatively well through H1 2019 despite external headwinds, as a result of stimulus measures.** The Chinese authorities responded to the downward pressure by cutting taxes and fees and easing monetary conditions. As a result, growth moderated only slightly from 6.5 percent in H2 2018 to 6.3 percent in H1 2019 (Figure 1). After adjusting for imports of each component of GDP, the contribution of exports, which had peaked in H1 2017 at 1.4 percentage points, declined sequentially to 0.4 percentage points in H1 2019, as shown in Figure 2. We project that the Chinese economy will grow by 6.2 percent in 2019 and 5.9 percent in 2020.

2. **Consumption has moderated at a slower pace, with domestic services consumption demonstrating resilience.** A conventional breakdown of GDP indicates that consumption has edged down since the middle of 2018 (Figure 1). Import-adjusted consumption has moderated more slowly on account of a bigger decline in imports for consumption (Figure 2).[2] Within domestic consumption, services consumption has remained more resilient than goods consumption, as reflected by the higher growth of corporate revenue for the services sector compared with retail sales (Figure 3). Goods consumption would have held up better had it not been pulled down by auto sales, which were impacted by the

[2] Notably, on nominal basis, the spending of Chinese outbound tourists declined by USD13 billion, or 0.2 percent points of China's GDP, yoy in H1 2019.

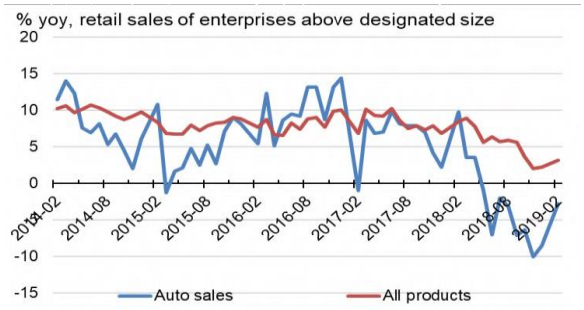
expiration of previous tax incentives and a wait-and-see attitude with regard to upcoming emission standards (Figure 4). Going forward, the moderation of the economy and softening labor market will weigh on consumption, but the impact on consumption of domestic services will continue to be less pronounced on account of robust demand for quality services, some of which are still in short supply.

Figure 3. Corporate Revenue, Services and Goods



Source: WIND

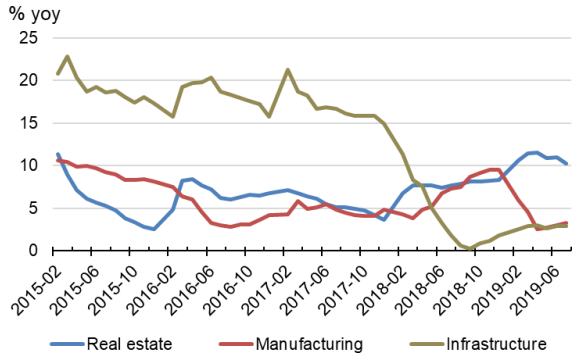
Figure 4. Retail Sales



Source: WIND

4. **Investment growth has slowed but is likely to improve slightly.** Reflecting the weak business sentiment and uncertainty surrounding the China-U.S. trade conflict as well as the deleveraging process, manufacturing investment has weakened since 2018 (Figure 5), particularly in the export and auto sectors. In addition, many corporates may be either using the tax savings from the government's tax and fee cuts to pay off their debts, or keeping them as reserves rather than to invest. On the other hand, some high-tech corporates are investing actively, particularly in 5G technology, although infrastructure investment has been slowed by the deleveraging process. In the coming quarters, growth in both manufacturing and infrastructure investment is expected to improve moderately, as a result of policy support, while real estate investment will slow down due to targeted macroprudential measures keeping a rein on financing for property developers.

Figure 5. Fixed Asset Investment Growth

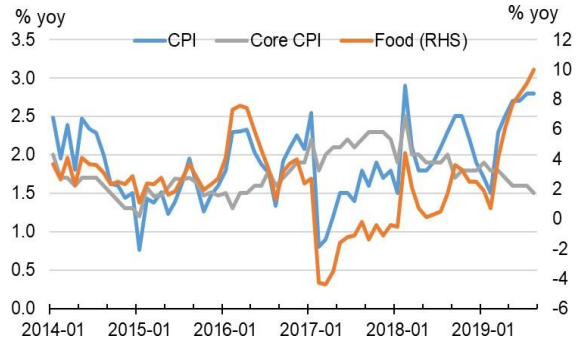


Source: WIND, AMRO staff estimates

5. **Consumer price index (CPI) inflation picked up slightly to 2.8 percent in July 2019 due to rising food prices, but should remain contained.** Food prices increased by 10.6 percent year on year (yoy) as a result of the swine fever epidemic and poor vegetable and fruit harvests. The population of pigs has declined sharply since the end of 2018 by about one third. As it will take time to build better pig farms and restore pork supply, food inflation will likely remain elevated over the next few quarters. However, core CPI Inflation has moderated to a low level owing to tepid demand (Figure 6). At the same time, moderating demand has also dampened producer price index (PPI) inflation, which fell from 3.5 percent

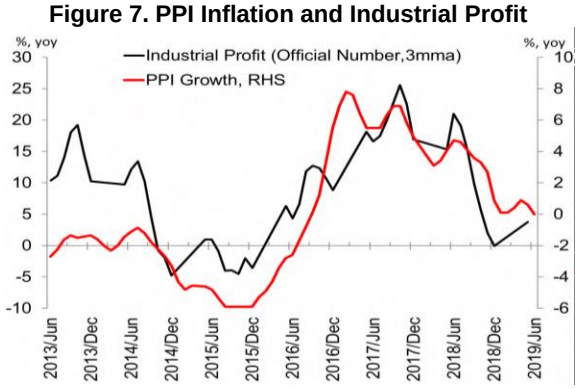
in 2018 to a contraction of 0.3 percent in July 2019, eroding the profit margins of industrial producers (Figure 7). Both CPI and PPI inflation is expected to be subdued due to tepid demand moving forward.

Figure 6. CPI Inflation



Source: WIND, NBS

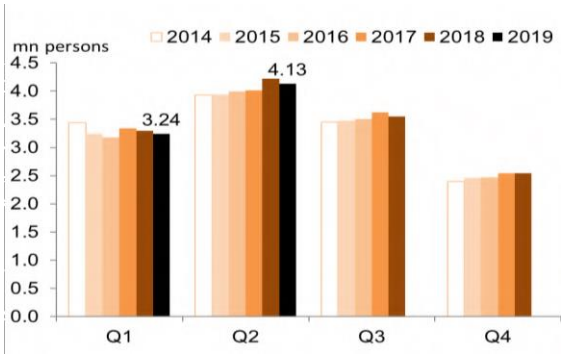
Figure 7. PPI Inflation and Industrial Profit



Source: WIND, NBS

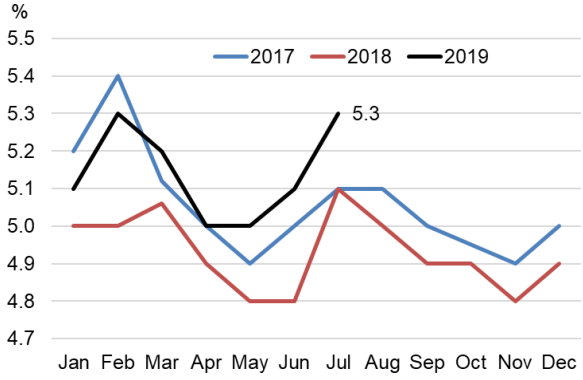
6. **Employment has continued to grow, remaining buoyant in the services sector.** China's newly added urban jobs increased steadily in 2019 and remained above 13 million persons (Figure 8). Booming mega cities in central China have helped to absorb some displaced workers from the coastal region. According to the National Bureau of Statistics (NBS), an increasing share of residents was employed in the services sector during 2014 to 2017, particularly in leasing and commercial services, hotel, food and beverage services, residents services, while the share of employment in manufacturing declined. The official data is supported by a survey on college graduates and a survey on blue-collar workers;[3] both surveys suggest that the employment outlook for services has been buoyant.

Figure 8. Newly Added Urban Jobs



Source: WIND, Ministry of Human Resources and Social Security

Figure 9. Surveyed Urban Unemployment Rate



Source: WIND, NBS

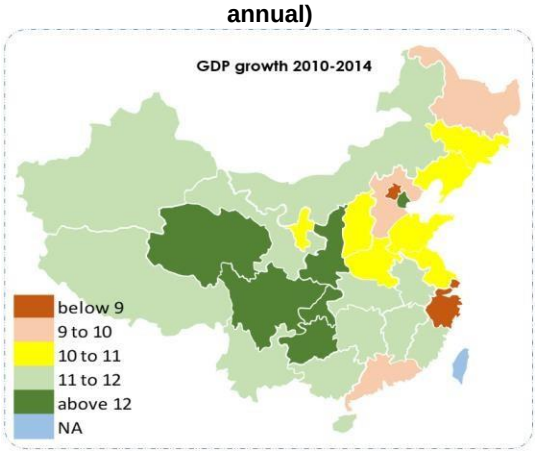
7. **However, there has been an uptick in the unemployment rate reflecting increasing numbers of entrants into the labor force and a weakening economy.** The unemployment rate, according to the NBS labor force survey data, rose from 4.9 percent in 2018 to 5.1 percent in H1 2019, reaching 5.3 percent in July 2019, close to the government's

[3] The surveys were carried out by mycos.com and 58.com respectively.

expected target of 5.5 percent, although it was partly due to the seasonal factor of a record 8.3 million college graduates joining the labor force. It will be more challenging in terms of creating good jobs if the economy were to slow down significantly. The authorities have put employment as the top priority among their "Six Stability Areas".[4] However, the unemployment rate is likely to remain stable, given the aging population, decline of working age population and labor force participation rate.

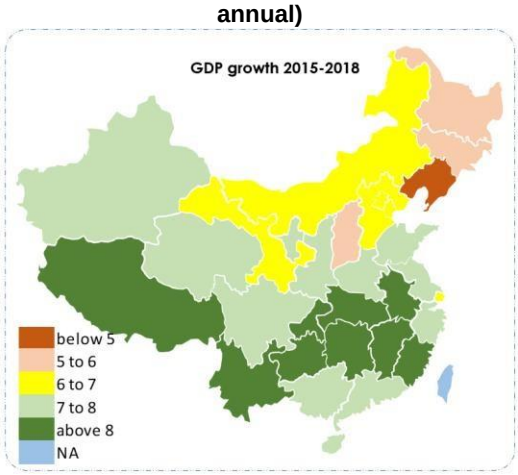
8. **Western and central regions have maintained the momentum of higher-than-average GDP growth, as had been the trend in the past decade.** In H1 2019, GDP in Western and Central China, particularly the southwest, grew faster than in Eastern China, the most developed region in China. This was a continuation of the trend between 2010 and 2018, when both regions were already growing at a faster pace than Eastern China, led by Western China during 2010 to 2014 (Figure 10), then Central China from 2015 to 2018 (Figure 11). In particular, a few provincial capital cities, including Wuhan, Chengdu, Chongqing, Xi'an, Changsha, Zhengzhou and Hefei, have rapidly climbed up the value chain, participating in the GVCs of some high-tech sectors. In terms of employment, anecdotal evidence suggests that labor migration to Eastern China has eased in recent years and migrant workers have been returning to Western and Central China, particularly to those cities mentioned above. In contrast, Northeast China's growth has continued to stay at the bottom over the past decade, including in H1 2019.

Figure 10. GDP Growth 2010 to 2014 (percent, annual)



Note: Please refer to Appendix 3.1 of Annex 3 for the definition of different regions of China.
Source: WIND, NBS, AMRO staff estimates

Figure 11. GDP Growth 2015 to 2018 (percent, annual)



Source: WIND, NBS, AMRO staff estimates

Authorities' Views

10. **Despite the mounting challenges, China's economy has remained resilient, and will continue to grow within a reasonable range.** Overall economic development has been stable, steady and progressive. Structural adjustments have continued to advance. Overall

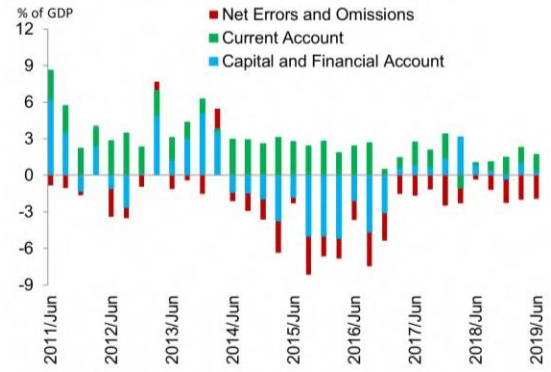
[4] According to a meeting of the Communist Party of China's Central Committee Political Bureau in August 2018, the "Six Stability Areas" are (1) employment, (2) finance, (3) trade, (4) foreign investment, (5) investment and (6) expectations.

supply and demand have been largely balanced. Consumption and investment growth has been stable, albeit moderating. Price and employment conditions have remained stable, although pork prices will remain high for quite some time with a moderate impact on inflation. However, external and internal uncertainties have increased, and the downward pressure on the economy is expected to persist in the near term. While growth is expected to be within the target range of 6.0 to 6.5 percent this year, the authorities have continued to emphasize the shift in policy focus from quantity to quality of growth.

A.2 External Sector

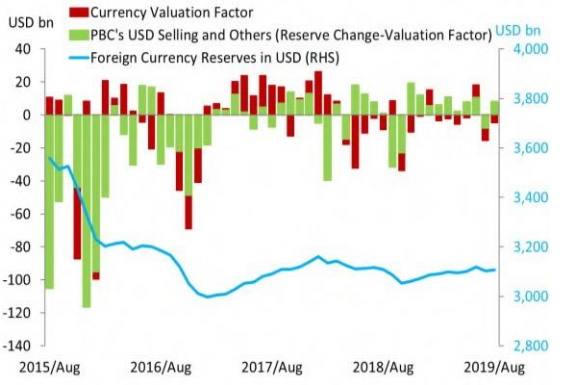
11. **The current account has remained in surplus, and foreign reserves are stable and adequate.** The current account surplus increased from 0.4 percent of GDP in 2018 to 1.3 percent of GDP in H1 2019. There were net inflows in the capital and financial account, mostly due to foreign direct investment (FDI) and portfolio investment, and these largely offset the outflows in (negative) errors and omissions, which could in part reflect illicit capital outflows (Figure 12). As a result, China's foreign reserves have remained stable and adequate at a high level of USD3.1 trillion (Figure 13). The People's Bank of China (PBC)'s US dollar (USD) buying and selling transactions, estimated by AMRO (Figure 13), show no indication of large-scale FX intervention.

Figure 12. Balance of Payment



Note: Capital and financial account here excludes reserve change.
Source: WIND, PBC, AMRO staff estimates

Figure 13. Foreign Reserves



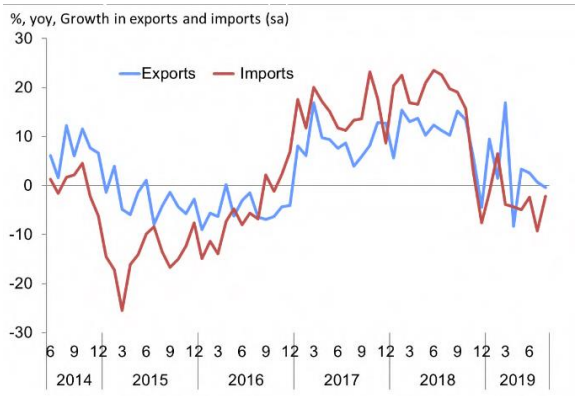
Note: Both currency valuation factor and PBC's USD selling and others are based on AMRO estimates.[5]
Source: WIND, PBC, AMRO staff estimates

12. **Weak imports of both goods and services widened the current account surplus in H1 2019.** The trade conflicts with the U.S., weaker domestic demand, and a slowdown of the global economy have dampened China's trade. For goods trade, exports were largely flat while imports contracted (Figure 14). Between January and August 2019, exports to the U.S.

[5] We assume that all PBC's foreign reserves were invested in foreign government bonds. We also do not consider the return arising from coupon payment and yield curve change. Therefore, the valuation factor is totally driven by changes in FX rates. We assume that the weights of currency in PBC's portfolio are the same as World Currency Composition of Official Foreign Exchange Reserves, Q2 2018 (compiled by the IMF): USD(62.4%), EUR(20.3%), JPY(4.9%), GBP(4.5%), AUD(1.7%), CAD(1.9%), other(4.3%).Then we estimate the valuation factor. Finally, we estimate PBC's USD selling and others based on the change in foreign reserves and the valuation factor.

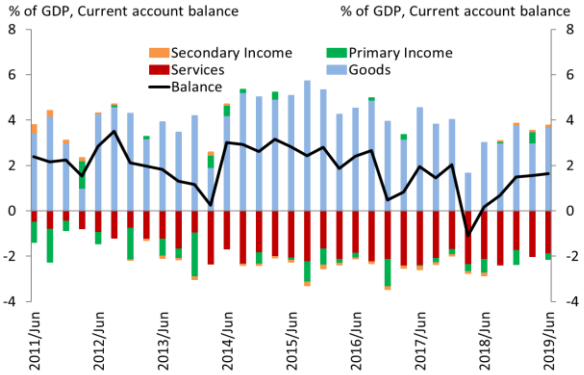
declined by 9.3 percent.[6] At the same time, Chinese outbound tourist spending declined, leading to a reduction of the services account deficit (Figure 15).

Figure 14. Goods Trade Growth, Seasonally Adjusted



Source: WIND, AMRO staff estimates

Figure 15. Current Account

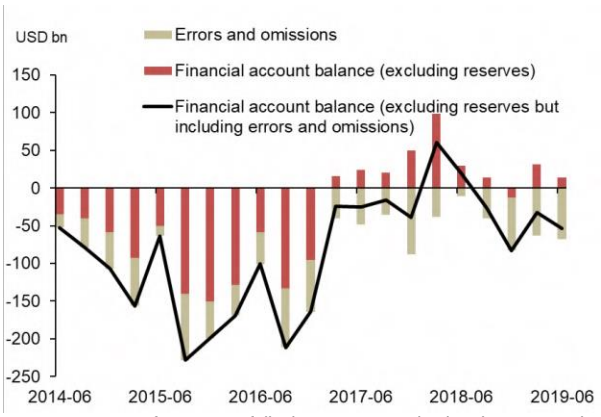


Source: WIND, AMRO staff estimates

13. **China's capital flows and exchange rate movements have been largely driven by developments in the trade tensions with the U.S. since mid-2018**. The uncertainty related to the trade tensions has significantly impacted market sentiments and led to increased outflows and heightened volatility in short-term capital flows. In particular, the financial account, excluding reserves, has generally oscillated between negative and positive since Q3 2018 (Figure 16). Meanwhile, there have been increased outflows through illicit means, as indicated by the larger errors and omissions in the BOP. In total, the financial account, excluding reserves but including errors and omissions, registered an outflow of USD194.5 billion over the past four quarters as of Q2 2019. The large swings in sentiments due to the trade tensions and the resulting capital flow volatility were mirrored by RMB exchange rate movements (Figure 17). The onshore RMB against the U.S. dollar depreciated sharply from 6.3 in mid-2018 to near 7.0 at the end of 2018, and then swung back to around 6.7 on hopes of a trade deal between China and the U.S. It had hovered around that level until early May 2019, when trade tensions suddenly intensified, pushing the RMB exchange rate beyond the 7.0 level.

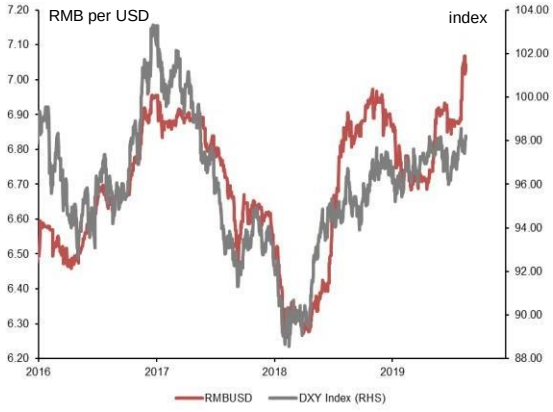
[6] The trade tensions have also led to trade diversion, with China's exports to ASEAN and the European Union respectively increasing by 8.8 and 5.2 percent (in USD) during January to August 2019.

Figure 16: Financial Account Balance



Note: Non-FDI refers to portfolio investment and other investment in BOP. Q2 2019 data is preliminary data and includes errors and omissions.
Source: Wind, AMRO.

Figure 17: RMB Exchange Rate

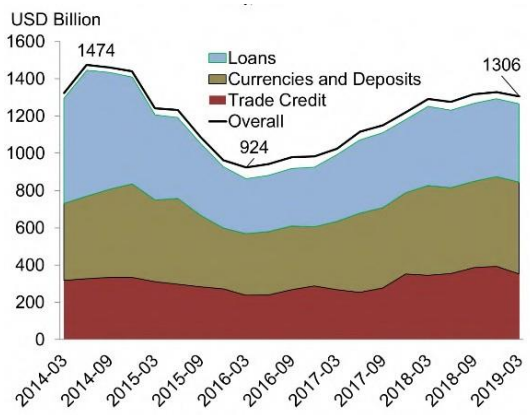


Source: Wind

14. **FDI inflows have remained resilient despite the trade tensions.** Notwithstanding the decisions of some foreign firms to put their investments in China on hold or divert them to other economies, China was still the second largest FDI recipient in 2018, according to the United Nations (UN)' world investment report. From January to August 2019, FDI to China increased by 3.2 percent yoy (in USD), with FDI in the high-tech sector growing particularly rapidly. Anecdotal evidence indicates that the new FDI is more oriented towards serving domestic consumption. China's further opening-up, particularly in the services sector, is expected to boost FDI going forward. Outward direct investment (ODI) from China to overseas markets also increased by 2.7 percent yoy between January and August 2019, after a 9.6 percent yoy decline in 2018.

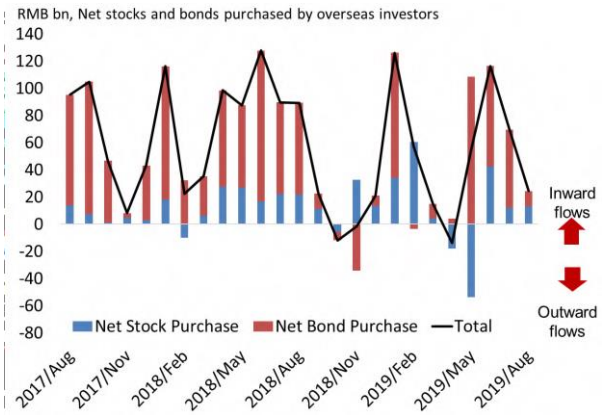
15. **The "other investment" account has been relatively stable.** In the past, the volatility of the financial account balance was largely driven by "other investment" balance, which was, in turn significantly driven by changes in China's overseas liabilities. The large reduction in the "other investment" account in 2015 (Figure 18) was due to the repayment of loans and reduction in deposits due to concerns over the rapid depreciation of the RMB at the time. The PBC was able to stabilize the exchange rate by introducing a currency basket mechanism in 2016 and since then, China's "other investment" liabilities have increased steadily through 2017 and 2018. Going forward, the continuing trade tensions, a weaker RMB in H2 2019, and tightened regulations on real estate firms' overseas borrowing may lead to some drawdown of these liabilities. Nonetheless, this will likely be modest, provided that the market does not expect a significant RMB depreciation.

Figure 18. International Investment Position (IIP) of "Other Investment" Account



Source: WIND, AMRO staff estimates

Figure 19. Foreign Buying of Chinese Securities

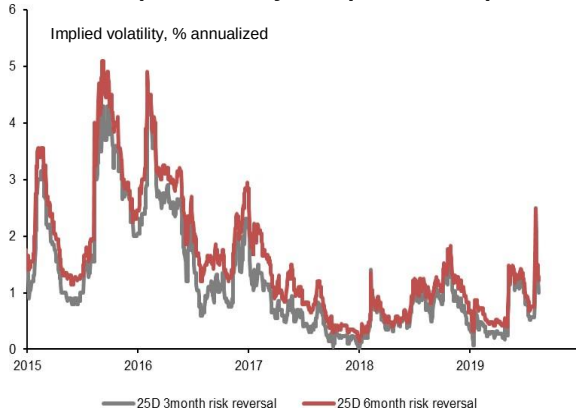


Source: WIND, AMRO staff estimates

16. **Foreign investors' portfolio investment in China has also been growing steadily, due to China's further opening-up of its financial markets to foreign investments, its increased weights in major global stock and bond market indices, and favorable valuation.** Foreign investors have been steadily increasing their asset allocations to China's onshore bond markets, primarily in government securities. The major global investment index providers are increasing the weights of China's capital markets in their flagship indices, which will cause foreign investors to allocate even more funds to Chinese stock and bond markets, as Chinese financial assets in their portfolios are still below the new benchmark weight. This momentum will likely accelerate given the weakening global economy and the relatively high yields of China's treasury bonds. At the same time, some global and emerging markets equity funds have also significantly increased their allocations to China's onshore A-shares market due to attractive valuations.

17. **Capital outflow pressure arising from the trade tensions may occur moving forward, but it is likely to be tempered by these portfolio investment inflows.** RMB-denominated bonds remain attractive to foreign portfolio investors, as RMB interest rates are high among the major economies'. As for capital outflow, the FX swap markets and the option markets also do not expect large RMB depreciation against the USD (Figure 20). Therefore, disorderly capital outflows are unlikely. Having said that, market sentiment will continue to be driven by developments in the trade tensions, and reflected in bouts of exchange rate and capital flow volatility.

Figure 20: Market Expectation of RMB Exchange Rate (Reflected by FX Option Prices)



Note: Data was valid as at August 16, 2019.
Source: Wind, AMRO

A.3 Monetary Conditions and Financial Sector

Monetary Policy

18. **Chinese authorities have been using both broad-based and targeted monetary policy measures to ensure adequate liquidity in the economy.** The PBC has lowered the reserve requirement ratio (RRR) several times for different types of banks by an average of about 350 basis points since early 2018. In 2019, the PBC introduced a Targeted Medium-term Lending Facility (TMLF). Most of these measures have been deployed in a targeted manner to provide support to SMEs and the rural economy.

19. **Overall corporate financing cost[7] showed some decline.** Since March 2019, the weighted average interest rate of seven-day interbank borrowing has hovered around 3.2 percent, 20 basis points lower than at the end of 2018 and 50 basis points lower than a year ago. The weighted average bank loan rate dropped from 5.92 percent in Q3 2018 to 5.62 in Q3 2019, and there might have been a bigger decline in lending to corporate. [8] The existing bank loans were priced based on the old benchmark policy lending rate, while the market-based loan prime rate (LPR) has been used to price new loans, the lending rate to corporate would fall further.

Authorities' Views

20. **Despite the mounting challenges, China's economy has remained resilient, and will continue to grow within a reasonable range.** Overall economic development has been stable, steady and progressive. Structural adjustments have continued to advance. Overall supply and demand have been largely balanced. Consumption and investment growth has been stable, albeit moderating. Price and employment conditions have remained stable,

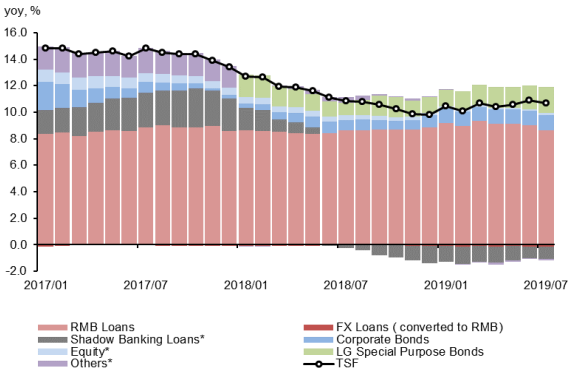
[7] In some cases, the bank lending rate only reflects part of corporates' overall financing cost, which may also include financing cost for bridging loans from non-bank entities, among others.
[8] This is because the housing loan rate had remained stable, and the decline of the overall loan rate was mostly due to lending to corporates.

although pork prices will be high for quite some time with a moderate impact on inflation. However, external and internal uncertainties have increased, and the downward pressure on the economy is expected to persist in the near term. While growth is expected to be within the target range of 6.0 to 6.5 percent this year, the authorities have continued to emphasize the shift in policy focus from quantity to quality of growth.

Credit Growth

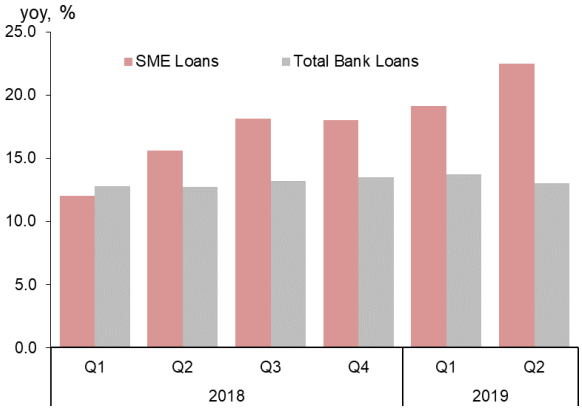
21. **Total social financing (TSF) growth has picked up slightly since late 2018 together with improvement in the lending structure.** The TSF growth decelerated from about 14.5 percent in mid-2017 to a low of 9.8 percent in December 2018 (Figure 21), as the authorities' continued financial deleveraging efforts led to a marked decline in shadow banking activities and a slowdown in borrowing from private enterprises and local government financing vehicle companies (LGFVCs). The credit tightening was gradually eased as the authorities adjusted the pace of financial deleveraging and deployed various policy tools to support the lending of financial institutions and the financial markets. Borrowing through conventional channels recovered moderately on the back of a mild pickup in banks' lending and a vigorous recovery of funding through the bond market. As a result, TSF growth edged up to 10.7 percent in March 2019, and since then, has hovered at around that level. Against this mild recovery in credit growth, banks have been extending more credit to SMEs, with such loans growing at a much faster pace than overall bank loans (Figure 22).

Figure 21: Total Social Financing Growth Rate



Source: Wind, AMRO staff estimates
Note: shadow banking loans include entrusted loans, trusted loans and undiscounted bankers' acceptance.

Figure 22: Bank Loan Growth Rate



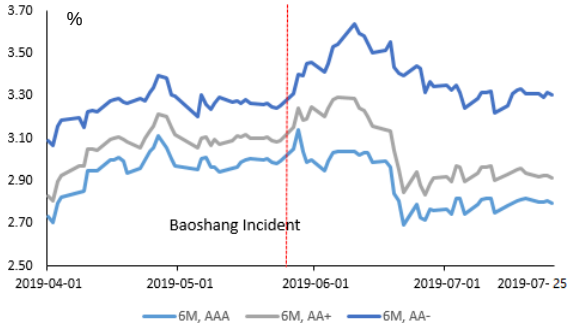
Source: Wind, AMRO staff estimates

Problems of Some Small and Medium-Sized Banks

21. Authorities have been cautious and taken active and preemptive measures in identifying potential vulnerabilities in the banking system, as well as trying to contain relevant risks before they materialize. Following a market-oriented approach, and within the legal framework, authorities addressed the risks of individual small and

medium-sized banks decisively. Financial regulators took over a troubled bank, Baoshang Bank, in May 2019, without guaranteeing full repayment to its corporate creditors.[9]

Figure 23. Interest Rates of NCDs



Source: Wind

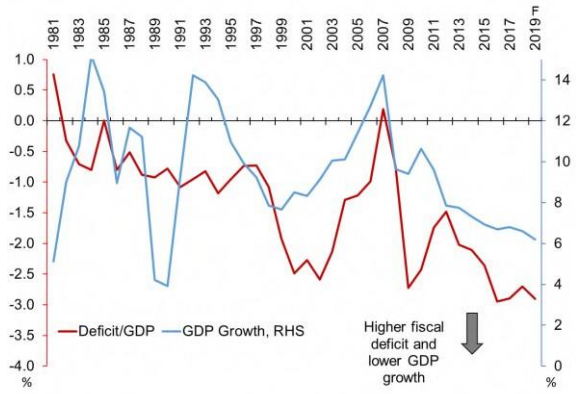
22. The Baoshang incident led to a temporary disruption in the interbank market which prompted market participants to reassess counterparty risks. The interest rates of negotiable certificates of deposit (NCDs), a measure of liquidity condition and counterparty risks among banks, rose significantly for lower-rated borrowers, and have since shown greater differentiation between higher and lower rated banks (Figure 23). Some weak banks and securities firms had trouble securing short-term funding from other banks. The regulators quickly stepped in to provide liquidity support, helping to calm market jitters, and NCD rates fell subsequently.

A.4 Fiscal Sector

23. In response to the slowdown in growth, especially from external headwinds stemming from the trade tensions and financial deleveraging, fiscal policy has become more expansionary in 2019. The targeted tax and fee cuts were increased in 2019 to RMB2.0 trillion and the official fiscal deficit is projected to rise to 2.8 percent of GDP (Figure 24). The cuts were applied to value-added tax (VAT) rates, employers' social security contribution rates, corporate income and personal income taxes, and public utility fees.

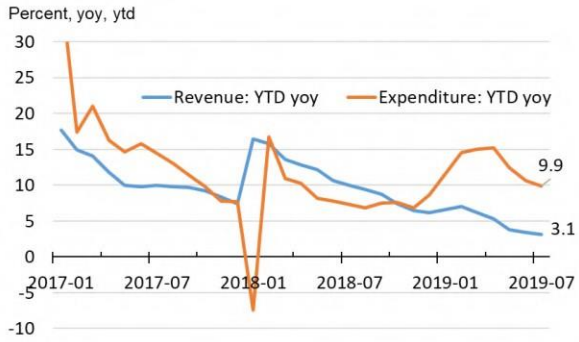
[9] Regulators guarantee Baoshang's repayment to all individual savers as well as corporate and interbank debt holders with RMB50 million of liabilities or less. Creditors that are owed more than RMB50 million are expected to initially be guaranteed for 90 percent of the debt amount on average and can continue to seek follow-up repayment. China Construction Bank has been entrusted to handle the Baoshang operations for one year.

Figure 24. Fiscal Position and GDP Growth



Note: Fiscal deficit of 2019 is based on authorities' projection.
Source: Wind

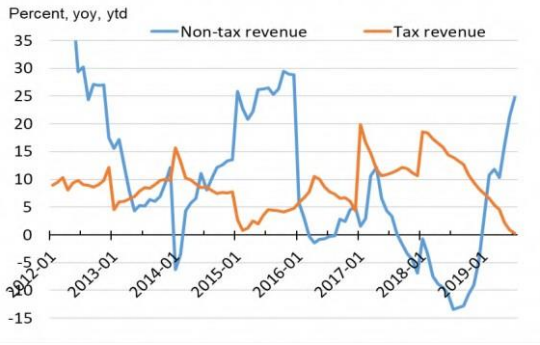
Figure 25. Government General Revenue and Expenditure Growth



Source: Wind

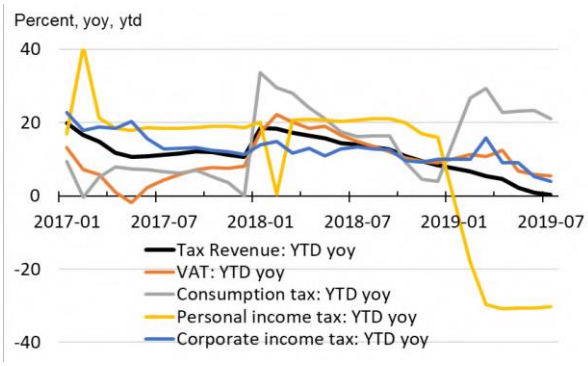
24. Government revenue will be affected by the significant tax and fee cuts and is expected to grow modestly in 2019. During January to July 2019, general fiscal revenue grew 3.1 percent yoy (Figure 25), much weaker than the 12.6 percent recorded over the same period in 2018 and falling short of the budgeted 5.0 percent growth projected for the whole of 2019.[10] Tax revenue growth fell markedly, led by a 30.3 percent decline in personal income tax (PIT) and slower growth in corporate income tax and VAT of 4.0 and 5.4 percent, respectively (Figure 27). On the other hand, non-tax revenue increased significantly (Figure 26), predominantly because of an increase in revenue at the central government level, which was in turn mainly due to higher contributions from the dividends of state-owned enterprises (SOEs) and active utilization of state-owned assets. For the whole of 2019, government revenue is projected to grow modestly at 3.5 percent as the economy is slowing and the VAT cuts, which took effect in April 2019, will lower VAT collection in H2 2019 compared with H2 2018.

Figure 26. General Fiscal Revenue, Tax and Non-tax growth



Source: WIND, AMRO staff estimates

Figure 27. Tax Revenue Growth



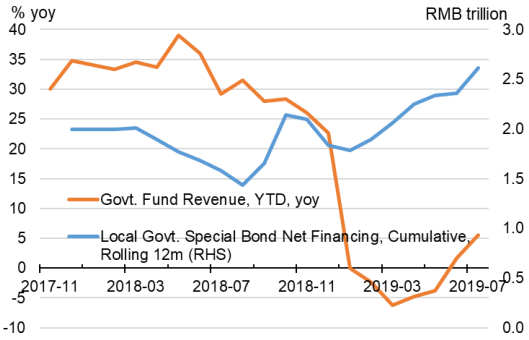
Source: WIND, AMRO staff estimates

26. **Expenditure grew at a more rapid pace**. General fiscal expenditure grew by 9.9 percent during the January-July 2019 period (Figure 25), compared with 7.1 percent over the

[10] Revenues at all levels of government have been impacted by the tax and fee cuts. In particular, the revenues of county-level governments have been affected by weaker fund revenues due to slowing land sales.

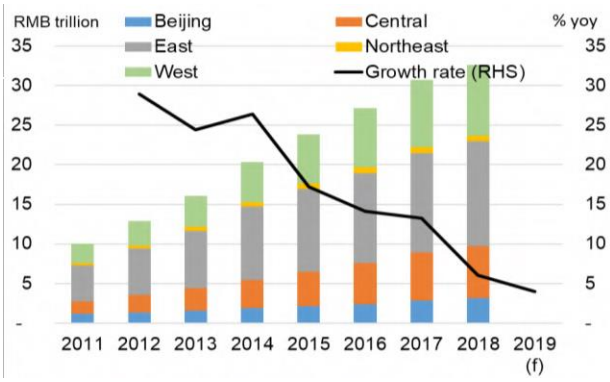
same period in 2018. The government has allocated more fiscal resources to key social and developmental areas while controlling other types of general expenditure. It has also improved the efficiency of fund management and usage, reduced inefficient and ineffective expenditures, and strengthened performance assessment and evaluation.

Figure 28. Government Fund Revenue and Local Government Special Bond Issuance



Source: WIND, Ministry of Finance, AMRO staff estimates

Figure 29. LGFVC debt



Source: WIND, AMRO staff estimates

27. **Infrastructure financing, which has been affected by weaker local government fund revenue and curb on LGFVC financing by the central government, has been supported by an increase in Local Government Special Bond financing.** In recent years, the central government has been following the principle of "closing the back door and opening the front door" (curbing illicit financing and introducing more legitimate financing) to finance infrastructure development. In 2019, as part of the efforts to shore up growth, the "front door" has been widened significantly. The quota for the Local Government Special Bond was raised by another RMB2.15 trillion to RMB10.77 trillion (11.1 percent of GDP) in 2019. In the 12 months up to July 2019, the stock of outstanding Special Bond rose by a record RMB2.6 trillion, (or 3.0 percent of GDP) (Figure 28). Meanwhile, government fund revenue barely increased (Figure 28) due to weak land sales, particularly in lower-tier cities. At the same time, LGFVC debt growth continued to decline (Figure 29) due to stringent control, particularly on borrowing via shadow banking activities. Overall, the opening of the "front door" has partially offset the effect of closing the "back door", and infrastructure investment growth has stabilized at a lower level.

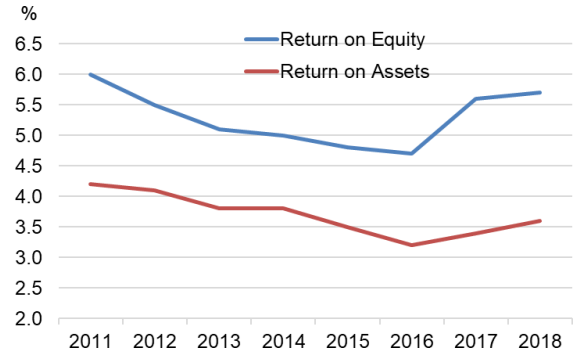
28. **Fund transfers from the central government to lower-level governments have been increased to support local governments whose fiscal revenues are weak.** At the provincial level, transfers from the central to provincial governments are expected to go up from RMB7.0 trillion (7.7 percent of GDP) in 2018 to RMB7.5 trillion (7.8 percent of GDP) in 2019. At the county level, fund transfers from the central and provincial levels will increase by RMB510 billion in 2019, which is expected to more than offset the reduced revenue from taxes and fees. As a result, the consolidated fiscal resources[11] of county-level governments are

[11] This refers to the sum of local general government revenue, local government fund revenue, and transfer payments and tax rebates from the central and provincial governments.

expected to grow by 4.0 percent in 2019, with those in less developed Western China set to grow by a more rapid 6.9 percent.

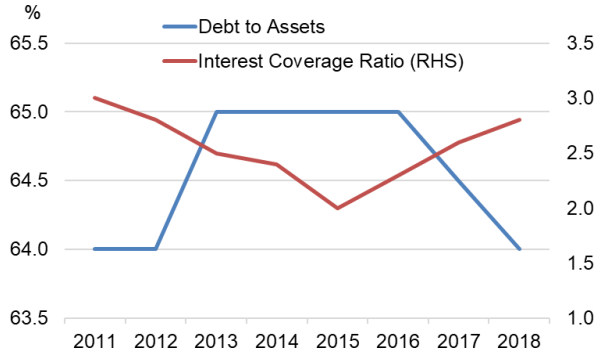
29. **SOE reforms have continued to make progress in recent years, and the share of lending to SOEs has been reduced in 2019 in favor of the private sector.** The performance of SOEs has improved in terms of increasing revenue, returns on assets and equity (Figure 30), declining leverage, and higher debt repayment capacity (Figure 31). The improvement reflects reforms to separate the roles of ownership and management, strengthen governance, and reduce the burden of social responsibility functions. Recently, the SOE sector has accelerated its pace of exit from some commercial activities, such as in real estate, hotels, and home appliances production. However, SOE profits remain weak, especially in the industrial sector. The trend of more bank lending to SOEs and away from private firms in 2018, when the economy slowed, has been reversed in 2019, due to policy emphasis and efforts.

Figure 30. State-owned Enterprises, Return on Assets and Equity



Source: WIND, SASAC(State-owned Assets Supervision and Administration Commission)

Figure 31. State-owned Enterprises, Leverage and Interest Coverage Ratio

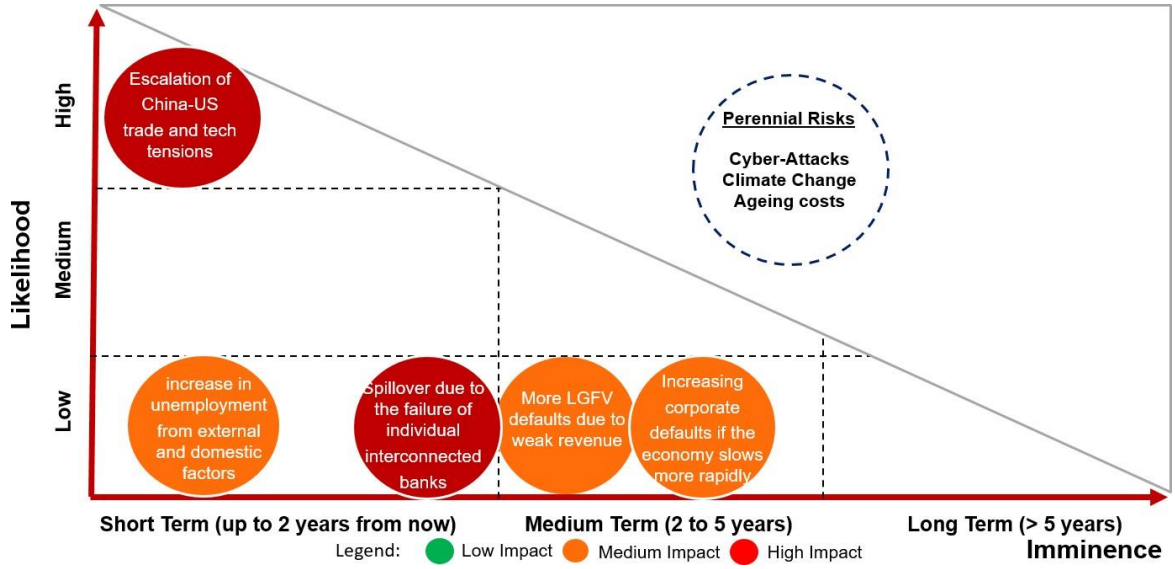


Source: WIND, SASAC

B. Risks, Vulnerabilities and Challenges

30. **Overall risks have increased in 2019, attributable to both external and domestic factors (Figure 32).** Export manufacturers, especially SMEs, were the hardest hit by the tariff increases from ongoing trade tension with the U.S. and there have been reports of retrenchments in the coastal provinces. The LGFVC debt stock has stabilized but is still large. Some LGFVCs have weak cash flows, especially in regions where the local economy is weak. Given that corporate debt is still high, if the economy were to slow sharply, there would be increasing numbers of corporate defaults, which could affect the economy further. The disruption to the interbank market during the Baoshang incident highlighted the extent to which shocks can be transmitted among interconnected financial institutions during a period of stress, affecting both banks and NBFIs,. Therefore, the incident underscored the importance of timely detection, prevention, and mitigation of spillover risks.

Figure 32. Risks Map



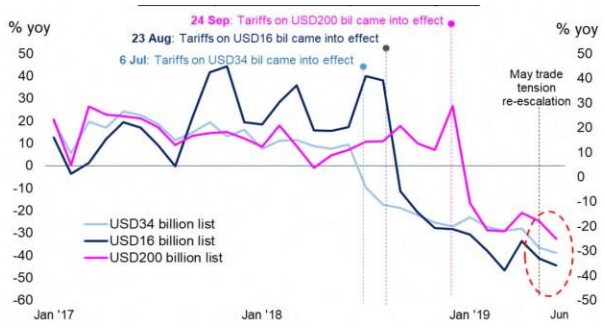
Source: AMRO staff

B.1 Risks to Growth and Employment from Trade Tensions

31. **AMRO's baseline growth projections for China could be affected by various risk factors.** The near-term risks arise mainly from external sources, in particular the heightened and ongoing China-U.S. trade tension. Domestic vulnerability, particularly a high level of corporate debt, has eased compared with the peak level in 2017, but the risk of corporate defaults has increased somewhat due to the slowing economy. Moreover, the increasing downward pressure on the economy will further impact employment.

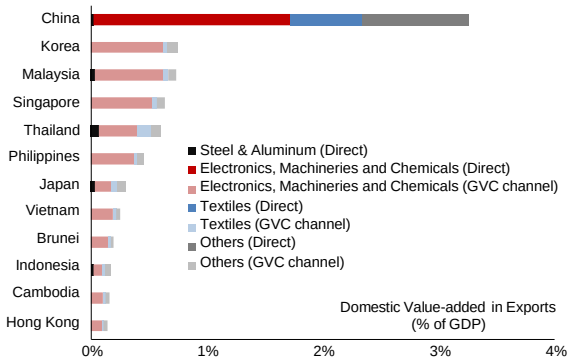
32. **The China-U.S. trade tension is the most important risk to growth.** The situation has dragged on for more than a year, with high uncertainty surrounding the outcome. There have been four rounds of U.S. tariff increases on Chinese goods, comprising three rounds of escalating tariffs set to peak at 25 percent and imposed on USD250 billion of exports, and a fourth round, launched in September 2019, involving an additional 15 percent tariff increase on an additional USD115 billion of exports and a further escalation of the earlier rounds of tariff increase to 30 percent. In return, the Chinese government has imposed similar tariff increases, which now cover the majority of imports from the U.S. As a result, China's exports to the U.S. have declined significantly (Figure 33). Most of the USD250 billion of goods that are subject to tariffs are intermediate goods, and their export volumes fell sharply. Exports of electronic products declined markedly, although this is also related to a cyclical downturn in the global electronics sector. The tariff hikes are having a significant impact on the real economy, especially manufacturing exports with significant spillovers to regional economies, which are closely linked via the regional supply chain. Figure 34 shows the value added by 12 Asian economies to the total value chain of Chinese exports to the U.S., based on the 2015 input-output table compiled by OECD. The higher tariffs also affect Korea, Malaysia, Singapore, Thailand, the Philippines, and Japan, mostly through the electronics sector GVCs.

Figure 33. Chinese Exports to the U.S.



Source: United States International Trade Commission, AMRO staff estimates

Figure 34. Regional Export Exposure (Including the Spillover Effects via GVCs) to the U.S. Tariffs



Note: Each country's exposure refers to the domestic value-added in exports, which include 1) goods that are subject to the increased tariffs (direct impact) and 2) inputs in the production process of 1) (indirect impact). The imported contents in China's exports are removed from its total exports to assess the exposure of China's domestic value-added in exports to tariffs. For example, the direct impact of U.S. Section 301 investigations on China's value-added exports (dark-colored bars) exclude the imported parts and components. Meanwhile, the light-colored bars denote regional economies' value-added exports linked to China via GVCs.
Source: OECD Trade in Value-Added (TiVA) database for the year 2015, AMRO staff estimates

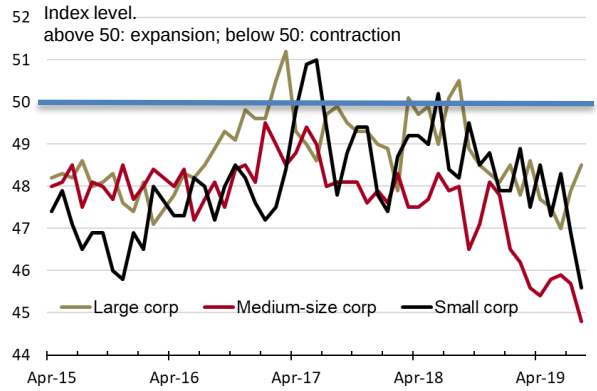
33. **The economy could slow more sharply if the trade tensions were to escalate further.** If the U.S. raises the tariffs on all of the USD550 billion of imports from China to 35 percent in 2019 and 2020, simulations by AMRO staff (which takes into account some additional policy support) indicate that China's growth could dip to 5.9 percent in 2019 and decline further in in 2020. Moreover, as the U.S. is now imposing sanctions on certain high-tech Chinese companies because of national security concerns, the impact of the new sanctions could be more long-lasting. This is especially so for GVCs of electronics products, for which China is the nexus.

34. **China's export-oriented manufacturers have been impacted by the trade tensions.** The labor-intensive manufacturing sector and some electronic firms have accelerated their relocation overseas, especially to lower-income countries in ASEAN and South Asia, to take advantage of lower factor costs, such as labor, and to avoid the trade tariffs. The relocation may also lead to a restructuring of the regional supply chain, with China moving towards the production of higher value-added intermediate and final products. Nevertheless, China will continue to be a global manufacturing hub owing to its key role in extensive and competitive industrial supply chains in high-tech electronics, its large pool of skilled labor, rapid technological progress, and its large domestic market.

35. **Weaker growth could have a more sizeable impact on employment, particularly in the traditional manufacturing sector and among SMEs.** The number of urban residents collecting unemployment insurance has increased modestly in 2019, and is still on an upward trend. Some leading indicators such as the manufacturing employment PMI fell to a 10-year low of 46.9 in August 2019, suggesting a softening of the labor market going forward. Employment sentiment among manufacturing corporates, especially SMEs has weakened

significantly since April 2019 (Figure 35). On the other hand, the Q2 2019 employment market sentiment index (CIER)[12] improved slightly to 1.89, from a low level of 1.68 in Q1, thanks to strong demand in the services sector. Employment growth could slow sharply if economic growth were to slow significantly, and this could affect SMEs considerably more than large enterprises.

Figure 35. Manufacturing Employment PMI



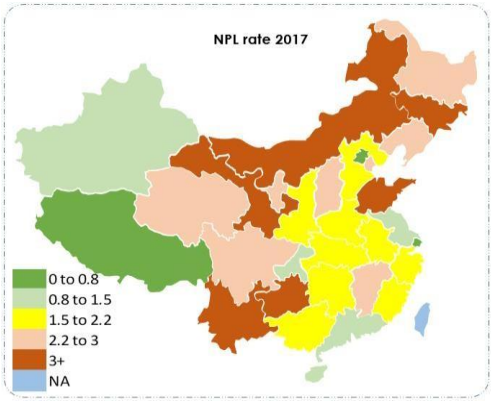
Source: NBS

B.2 LGFVC Defaults and Weak Local Government Repayment Capacity

36. **LGFVC defaults could rise, and lead to an increase in fiscal and financial risks at the local level. The number of** cases of LGFVC default related to shadow banking loans has increased in 2019, and this will likely go up amid the slowing economy. Rising LGFVC defaults can lead to increasing fiscal risks. If the local governments bail out the defaulting LGFVCs to curb the adverse impact on the local economy and financial sector,[13] then the local government debt will rise and become a burden on their budget. Meanwhile, local government debt repayment capacity[14], especially in the southwest and northeast, is significantly below the national average (see Selected Issue 3), and their ability to support troubled LGFVCs is limited. Local banks have extended significant loans to LGFVCs. While NPL ratios in these regions are still low, they are higher than other regions (Figure 36). Hence, fiscal risk may interact with banking-sector risk, bringing more challenges to both economic and financial stabilities at the local level.

[12] The CIER Index is defined by the China Institute for Employment Research as a measure of the degree of tension of the matching between supply and demand in the labor market. A CIER index of above 1.0 means job supply outweighs demand, while below 1.0 indicates the opposite.
[13] LGFVs fund infrastructural projects by borrowing from local banks. A high potential for LGFVs to default would therefore subject those banks to substantial exposure.
[14] This is based on our analysis of the ratio of overall debt to local government consolidated fiscal revenue. Local government consolidated fiscal revenue refers to the sum of (1) local government general revenue, (2) local government fund revenue and (3) transfer payments from the central government.

Figure 36. Non-performing Loan (NPL) Rate (percent) by Province (2017)



Note: The CBIRC discloses NPL data by province annually and the latest is for 2017. Based on the information provided by listed banks, the divergence in terms of NPL rate widened in 2018.

Source: CBIRC

B.3 Risks and Vulnerabilities of Small and Medium-sized Banks

37. At the individual level, notwithstanding the progress in financial deleveraging, some small banks are still vulnerable to distress due to credit and liquidity risk.

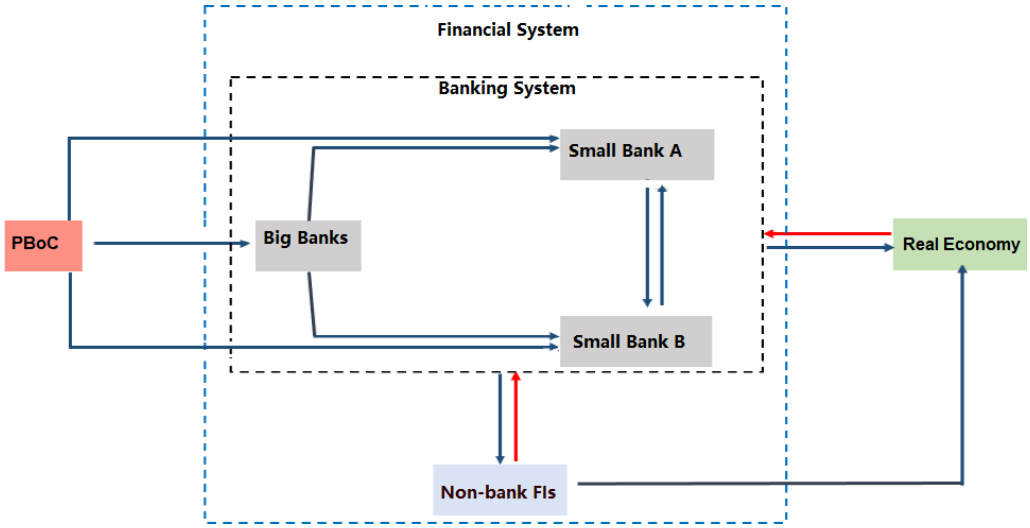
- Authorities' efforts to curb shadow banking and some highly-leveraged activities in the financial sector have improved the soundness of these banks in recent years. The size of shadow banking activities has shrunk considerably, in particular those involving complex products. Banks have also reduced their reliance on the wholesale funding market.
- Several state-owned institutions also took up 21.64 percent of the common equity of the Bank of Jinzhou[15]. Then in August, authorities also facilitated a market-oriented reform which introduced new investors and injected additional capital.
- The NPL classification standard has become stricter and more quantitative. Regulators have encouraged and facilitated banks' raising of capital and disposal of NPLs. These efforts have strengthened the soundness of the overall banking system.
- However, some small banks remain vulnerable because: (1) their NPL ratios are high; (2) the significant reliance on wholesale funding could make them susceptible to liquidity shocks; (3) their capital adequacy ratios (CAR) have fallen below, or close to, the regulatory minimum; and (4) some banks' corporate governance is still not up to the standards. Most of these banks also operate in regions with a weak economy, imposing additional challenge to their businesses.

38. **From a systemic risk perspective, some small banks are highly connected to other banks and financial institutions, and could both trigger, and be affected by, contagion.** Some small banks borrow from the interbank or wholesale money markets to supplement their insufficient deposit funding (Figure 37). They also actively invest in shadow

[15] Among state-owned institutions who took a stake in the Bank of Jinzhou, the Financial Asset Investment Company of ICBC, a fully controlled subsidiary of Industrial and Commercial Bank of China, acquired 10.82% of the common equity.

banking products structured by other banks and NBFIs. Their interconnectedness also suggests that a shock to the group could spill over to the wider financial system. Our stress test shows that the hypothetical failure of some of these small banks could cause contagion and losses to China's financial system (see Selected Issue 2).

Figure 37. Flow of Funds in China's Financial System



Source: AMRO

B.4 Risks from Rising Corporate Defaults and Household Debt

39. **The level of corporate debt has remained high, and rising corporate defaults due to a weakening economy could have an impact on the financial system and also the economy.** Non-financial corporate debt has gradually declined from a peak of 160 percent of GDP in June 2017 (Figure 38) to a still-high level of 156 percent to GDP in June 2019, mainly because of the utilities (including LGFVC debt) and real estate sectors. If growth slows sharply, corporate defaults will rise and some corporates will have difficulty refinancing their debt, which would adversely impact the economy.

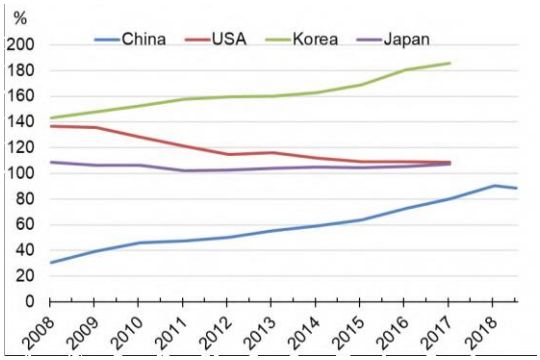
39. Household indebtedness has risen rapidly but is still at a manageable level; however, if the rapid growth continues, the debt could weigh on consumption and economic growth moving forward. Since the Global Financial Crisis, China's household-to-GDP ratio has been rising rapidly, from a low level of 18 percent of GDP to around 55 percent of GDP in 2019 (Figure 38). Looking at household debt-to-disposable income, China's level is still lower than those in the U.S., Korea and Japan (Figure 39); however, it has risen by 50 percentage points since 2008, faster than other large economies, to 89 percent of disposable income in June 2019. Strict macroprudential measures, in particular, low loan-to-value (LTV) ceilings, have ensured that households are not over-leveraged and loans are well collateralized. However, if the rapid growth continues unabated, then household debt will soon approach levels that could adversely affect consumption and become a drag on economic

growth.[16] If the debt rises too rapidly under less-than-stringent policies on credit standards, it could also have an impact on financial stability.

Figure 38. China Debt-to-GDP Ratios of Household and Corporate

Source: Wind, AMRO staff estimates

Figure 39. Household Debt-to-Disposable Income Ratio



Source: Wind, OECD, AMRO staff estimates

Authorities' Views

40. Although the authorities' strengthened efforts to reduce risks in the economy and the financial system have demonstrated good results, external risks have increased and there remain some key domestic risks to be tackled further. The authorities have been paying close attention to the following external and domestic risks. On the external front, despite considerable efforts from the Chinese government, there is still significant uncertainty regarding whether and to what extent the China-U.S. trade tension could be resolved. In addition, there has been an increasing risk of a global economic slowdown. Besides the heightened risk of growth slowdown in major advanced economies, the risks and fragility of some EMEs have increased, which could also have an impact on China. On the domestic front, there are two remaining "grey rhinos": some local governments have a large stock of hidden debts; and property prices may fall sharply from a high level in some cities and impact financial institutions. The authorities are also mindful that some currently-contained risks facing individual financial holding groups and rural financial institutions may emerge in the next few years, and that the risk of contagion in financial markets is still significant. Last but not least, they recognize that black swan events cannot be overlooked.

C. Policy Discussions and Recommendations

41. At this challenging juncture, the authorities are vigorously addressing short-term risks to growth while sustaining efforts to derisk the economy from high financial and corporate leverage. Amid downward pressure on growth, slowing but still high financial leverage and increasing debt in the property sector, the current policy mix is a combination of (1) proactive fiscal policy, (2) easing of monetary and liquidity conditions, (3) increasing credit

[16] Marco Lombardi, M. Mohanty and I. Shim (2017), BIS Working Paper No 607, found from a sample of 54 economies over 1990-2015 that the effect of increasing household debt on consumption would be negative in the long run and tended to intensify as the household debt-to-GDP ratio exceeded the threshold of 60 percent. The negative household debt effect on growth would intensify as the household debt-to-GDP ratio exceeded 80 percent.

to SMEs, (4) continued financial deleveraging and (5) maintenance of tight macroprudential policy settings. The goals are to ensure that growth will not slow sharply and will stay within the target range, and that emerging macroeconomic and financial risks will be sufficiently addressed to curb any impact on growth. At the same time, the authorities are also attempting to signal that they will not reverse the financial deleveraging efforts. These policy efforts are challenging as the effectiveness of the policy is uncertain and a delicate balance needs to be struck to avoid undesirable effects. For example, ensuring that further financial deleveraging will not lead to a sudden eruption of banking-sector risk, and the loosening of monetary policy will not lead to exuberance in the real estate markets.

C.1 Calibrated Stimulus Package to Support Growth

42. Drawing lessons from past experience, the authorities have rolled out a calibrated stimulus package to shore up growth. China experienced three major downturns in the past decade: during 2008-2009, 2015-2016 and the current episode. The causes of each downturn, impacts on the economy, institutional settings, policy space and policy effectiveness are different in these three episodes (see Selected Issue 1 "China's Current Stimulus Policy: A More Targeted and Measured Approach" for a detailed discussion). While the progress made in strengthening a wide range of institutional settings should enhance policy effectiveness, China's policy space has narrowed substantially, due to the high corporate leverage level (including LGFVC), high housing prices, as well as higher local government debt. The authorities can no longer rely on boosting infrastructure and property investments as the most important tools to support the economy.

43. The strong fiscal policy package, with an emphasis on tax and fee cuts, has helped avoid a sharp economic slowdown. The fiscal authorities have adopted a more targeted approach to support the economy, focusing on tax and fee reductions and a measured increase in infrastructure spending. We assess that the tax and fee cuts would lift GDP growth by about 0.5 percent point on an annualized basis (see Selected Issue 1 "China's Current Stimulus Policy: A More Targeted and Measured Approach" for the estimates).

44. Thus far, these policy measures have improved business, investor and consumer confidence, although the confidence indicators have taken a dive following each round of escalation of the trade tensions. Most of the additional tax and fee cuts took effect only in April and May 2019. The effects of the measures are expected to work their way through the economy, supporting economic activity and employment in the coming quarters.

45. Looking ahead, any additional fiscal stimulus measure to mitigate the impact of a further escalation in trade tensions on growth should be carefully designed and aimed at maximizing its multiplier effect. In particular, the authorities should monitor and examine the impact of the ongoing tax and fee cuts, and use the results to calibrate further fiscal measures if needed. These cuts will lead to a reduction in fiscal revenue in the short term. It is therefore necessary to make up for the revenue reduction, such as by mobilizing idle funds and dividends of SOEs. In the longer term, it is important to further broaden the tax base to enhance revenue collection. As such, it may be difficult to achieve a marked revenue increase

quickly, and fiscal authorities should closely track and analyze the trend of fiscal revenue in the coming periods to assess implications for spending and fiscal sustainability. A higher threshold for taxable income will benefit lower-income households, who have greater marginal propensity to spend.

46. Authorities could recalibrate monetary policy measures to support the economy should growth slow significantly in the near term, while continuing to improve policy transmission and credit allocation. We support the authorities' current policy mix, which has become more accommodative to support growth by ensuring an adequate supply of liquidity in the banking system to extend credit to the economy, particularly SMEs, while curbing financial leverage in the shadow banking sector. Given the recent easing in global financial conditions, the PBC could also consider a further reduction in the RRR and an easing of the policy rate if the economy were to slow significantly. At the same time, the PBC has enhanced the monetary policy transmission process by further reforming the interest rate mechanism to shift banks away from linking their lending rates to the old benchmark lending rate and toward the loan prime rate (LPR), which is based on the PBC's MLF rates. Such reform needs to be followed through so that loan rates will be more responsive to the MLF rate, which could lead to lower financing costs for firms. This, together with incentives to banks such as the TMLF and rediscount window, would improve financial intermediation and credit allocation.

47. Macroprudential measures should continue to be tight to contain excessive borrowing by households and prevent a rapid rise in property prices. A set of tight macroprudential measures would be appropriate if the authorities were to further ease monetary policy in the event of sharper growth slowdown. For 2019, the regulatory authorities have tightened real estate developers' financing through shadow banking activities, onshore and offshore bond issuances and ABS products. This will help contain the amount of credit to the real estate sector, and ensure that any easing in monetary and credit policy will not have the unintended consequence of spurring an increase in credit to the real estate sector.

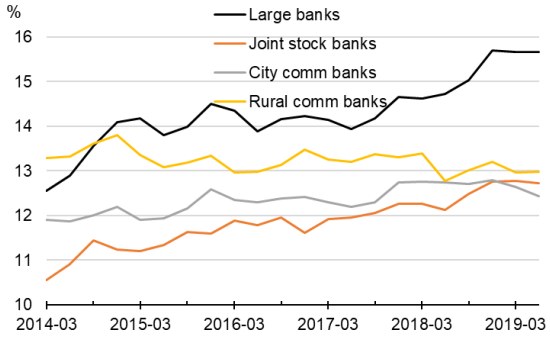
C.2 Risk Prevention in the Financial System

48. The authorities should continue to be mindful of contagion risk while continuing with efforts to further curb shadow banking and some highly-leveraged activities in the financial sector. Regulators have been scrutinizing risk-taking behavior of banks and encourage them to improve their risk management framework and capabilities while strengthening their capital buffers. These efforts should continue. Authorities should also continue to enhance the banking resolution framework, in such a way that (1) in the case of default, degrees of recovery should vary for different types of investors and different debt seniorities, and (2) post resolution, the functioning of the financial system would be intact. This will help to reduce moral hazard on the part of both banks and investors. Going forward, with the slowing economy, authorities need to carefully calibrate the sequence and timing in handling any troubled banks, given the potential contagion risk. PBC's 2018 financial stability report highlighted the challenges and measures to enhance contingency and resolution plans in the case of bank default, and these needs to be followed through. As China's financial

markets open up further, regulators should also pay attention to the changing configuration of the financial network, assess its implications for systemic risk, and ensure cohesive cross-agency coordination.

49. We welcome policymakers' efforts to enhance the soundness of the banking system by facilitating banks' efforts to strengthen their capital buffers (Figure 40)**.** The increased pace of capital raising has kept the CARs of most banks stable. With facilitation by the regulators, banks have raised a substantial amount of capital recently, and plan to raise more in the coming quarters. However, the CARs of city commercial and rural commercial banks need to be further augmented with high-quality tier-1 capital, which needs to be done in a decisive manner, in order to shore up confidence in those banks and enable them to better support the real economy. As for tier-2 capital, to enhance the quality of capital, regulators have also taken steps to restrict banks' cross-holding of subordinated bonds and hybrid bonds issued by other banks. Mutual funds and insurance companies are the major investors of these bonds. These efforts should be continued.

Figure 40. CARs of Different Types of Banks



Note : Although the capital adequacy level of joint-stock banks is similar to that of city commercial and rural commercial banks, they have stronger risk management capabilities and have more means to replenish capital.

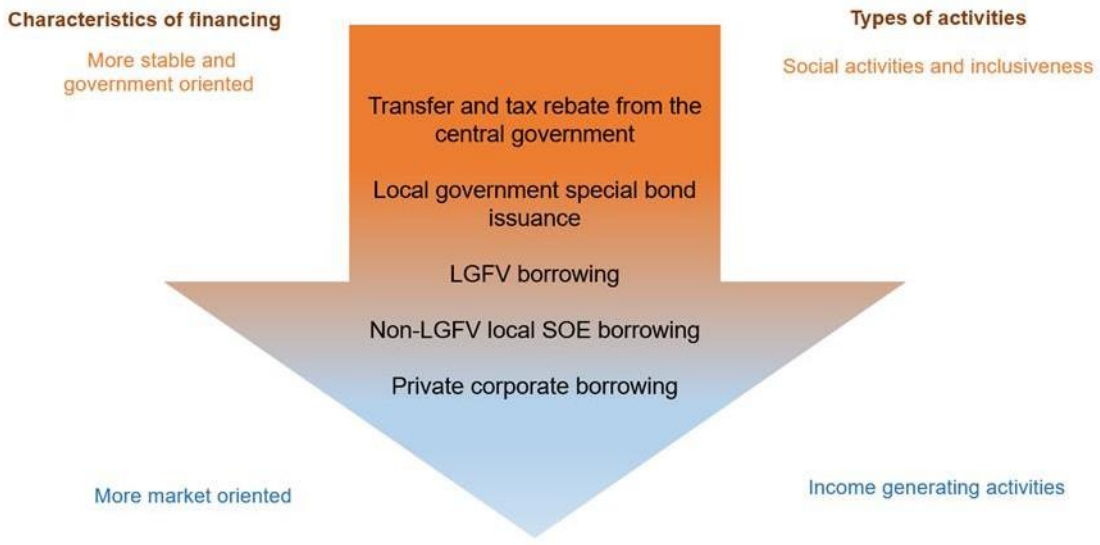
Source: Wind, CBIRC

C.3 Fiscal Policy Reform and Risk Prevention

50. Local governments should issue more special bonds to support productive infrastructure investment. It is important for local governments to be selective and invest in only infrastructure projects with high social and economic returns. In order to mitigate fiscal and financial risks, the central government has tightened fiscal discipline over the local governments. To support financing for infrastructure projects, local governments have been allowed to issue more special bonds instead, and recently, the authorities have stipulated that proceeds from special bonds must be used for productive infrastructure projects, and should not be used for land reserve accumulation and shanty town redevelopment. This policy is in the right direction and should be enforced. In addition, to support economic development and ensure fiscal sustainability, local governments which have a good track record in using the special bonds should be allocated greater fiscal resources in infrastructure development. Such policies will also encourage local governments to ensure sound project preparation, construction and management.

51. Allocation of more fiscal resources to the local governments should be further strengthened to enhance inclusiveness. For the local governments, there are currently several funding sources, and we have ranked them according to the degree of market orientation and type of activity in Figure 41. In recent years, the central and provincial governments have provided more resources for activities that are non-commercial but support people's livelihood and government operations, such as basic health care and education, and have increased fiscal transfers to lower-level local governments. This is essential for some poor regions, where bank credits are hard to obtain. This policy should be further strengthened to reduce the burden of local governments. In addition, there has been a recent policy shift toward increasing the role and capacity of key cities and city clusters. While this may benefit China's growth potential through the pooling of resources, it may reduce resources for projects at the national level and widen the disparity between the key cities and city clusters and other less developed cities and regions. Therefore, it is essential to increase transfer payments to less developed regions to prevent the disparities from getting worse.

Figure 41. Selected Funding Sources of Local Economies



52. Authorities need to monitor and resolve the fiscal risks of weak regions, and increase spending and transfer payments if necessary. AMRO analysis (see Selected Issue 3: An Analysis of Local Government Debt and Debt Repayment Capacity) shows that disparities in terms of fiscal position between the rich and poor provinces are significant. The aggregate government debt is moderate and manageable at the national level, but is challenging for some provinces to service. Given the downward pressure on the economy, the exposure of regional small banks to LGFVC debt, and the overall vulnerability of these banks, the authorities need to be careful in addressing LGFVC debt problems so that they will not trigger contagion in the financial markets.

C.4 Reform and Opening Up

53. Long-term economic policy should facilitate China's transition to the new economy, support enterprises and workers affected by business model disruptions,

spur the development of world-class city clusters, and strengthen social security for the aged and vulnerable. Given the prospect of a gradual slowdown in the pace of China's economic growth as it moves towards the technological frontier, policy needs to retain a strong focus on supporting research and development, promoting innovation, embracing the application of new technologies, and facilitating the transition of businesses to the new economy. As the new technology is likely to be disruptive to old business models and lead to a retrenchment of workers, the government should strengthen programs to help those workers in retraining, upskilling, and finding new jobs. The development of the world-class city clusters, namely the Beijing-Tianjin-Hebei region, the Yangtze River Delta, and the Greater Bay Area (GBA) (see Selected Issue 4), will help pool resources, enhance the role of the market, support further economic development and spur innovation. Efforts to enhance the social security safety net and health care should also continue in view of the ageing population.

54. Further SOE and market-oriented reforms should be strengthened to improve resource allocation. While significant progress has been made on SOE reforms, further work on strengthening the performance evaluation and incentive mechanism should be developed to improve productivity and foster sustainable growth. We should level the playing fields and improve the efficiency of resource allocation. SOEs should also consider further withdrawing from non-strategic sectors to allow the private sector to play a bigger role in the economy.

55. We support the authorities' commitment to uphold rules-based multilateral trade, strengthen the IPR protection framework, and accelerate the opening up of the economy, especially for the services sector. China has been promoting a more level playing field for all entities, including SOEs, private enterprises and foreign investors. In particular, the pace of opening up the financial services sector has picked up in 2018 and 2019, which will help to improve efficiency by enhancing competition with entrance of foreign financial institutions. It will also raise the services standard by compelling financial institutions to offer more diverse products and services. In addition, major global investment index providers are increasing the weight of China's capital markets in their flagship indices, which will cause foreign investors to increase their allocation to China's onshore markets. However, the opening up of the economy will also bring more challenges to policymakers, particularly in areas such as capital flow volatility and financial sector risks. Hence, the authorities need to enhance their capacity to deal with these risks.

Authorities' Views

56. Fiscal policy to support growth. Downward pressure on the economy has increased in 2019. The authorities adopted an expansionary fiscal policy by cutting taxes and fees. The move helped to stabilize market expectations, and encouraged enterprises to strengthen their research and increase investment and employment. China will continue to implement tax and fee reduction with the combined and coordinated efforts of all related authorities.

57. Monetary policy remains sound and prudent, with timely and fine-tuned adjustments to support growth. Authorities have maintained reasonable and adequate liquidity level in the financial markets, improved the transmission mechanism of monetary

policy, and supported the development of equity and bond financing. Authorities have also been supporting private enterprises and small and micro enterprises, creating a level playing field in financing for enterprises of all types and sizes.

58. To anchor stability in the property sector, a tight stance of macroprudential measures has been maintained. Authorities have also reiterated that regulations on the real estate sector would adhere to the principle that "property shall be used for living, not for speculation".

59. Addressing LGFVC default risks. China will address head-on risks related to implicit local government debt, including those arising from the imminent maturity of some LGFVC debts. This will entail close monitoring, analysis and assessment of the viability of local governments' implicit debt and greater enforcement of a robust accountability mechanism.

60. Reducing and mitigating financial sector risks. Authorities viewed that the emerging problems of few small banks were isolated incidents. The overall situations in the financial system were well under control. They took over Baoshang Bank and tackled the problems of few other banks in accordance with the law. These efforts successfully contained the spread of liquidity strain among small and medium-sized banks and helped support broader confidence in different segments of the banking system. Hence, market stability has been maintained and spillover risks averted. As part of their continuing efforts to strengthen the banking system, the regulators will facilitate commercial banks' tier 1 capital-raising efforts, especially through issuing perpetual bonds.

61. Inclusive fiscal measures. China will continue to strengthen the inter-regional coordination of policy measures to improve people's livelihood. While the faster-growing regions are encouraged to take the lead, the central government will also work with all local governments to strengthen their fiscal positions and avoid excessive differences in the supply and quality of basic public services among regions. The government will allocate more fiscal resources overall to improve people's livelihood, in order to generate improvements across areas such as employment, education, pension, and medical care.

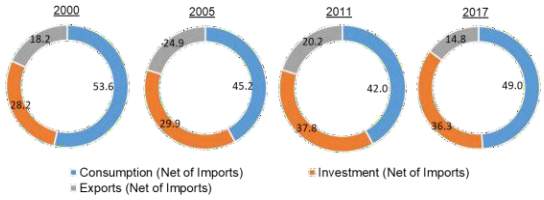
62. Prevent and resolve fiscal risk. China will continue to improve the institutional setup for fiscal policymaking, risk assessments, and work with local government to strengthen their debt management capacity. China will strictly control local governments' expenditures, strictly adhere to the pre-set fiscal policy, and robustly enforce rules for budget execution. China will resolutely curb increases in local government debt while actively mitigating risks from the built-up debts.

Appendix 1. Selected Figures for Major Economic Indicators

Figure 1.1. F al Sector

In value-added terms, the share of exports has declined but remained sizable, and the share of consumption has increased substantially.

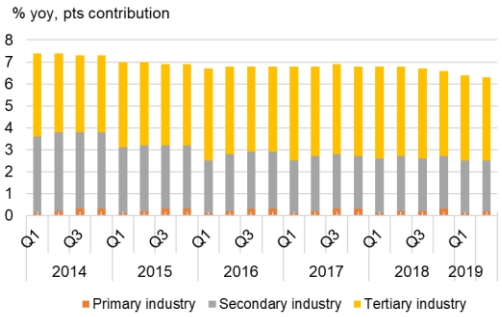
Import-Adjusted GDP



Source: CEIC, OECD TiVA, AMRO staff estimates

Tertiary industry, mostly services, has contributed to more than half of the growth, while secondary industry, mostly manufacturing, has been moderating.

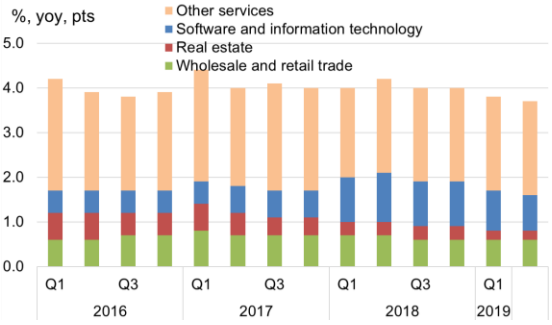
GDP by Production



Source: CEIC, AMRO staff estimates

For the growth of the services sector, the contribution of real estate has declined, while the contribution of software and information technology has risen.

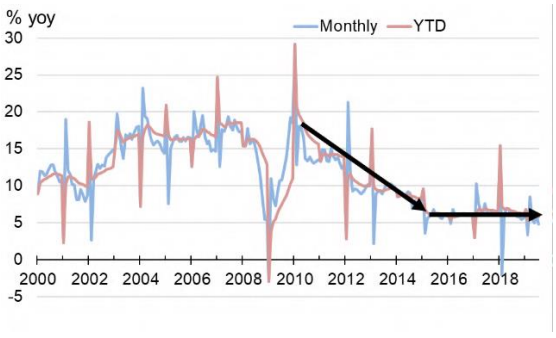
Services Sector Contribution to GDP Growth



Source: CEIC, AMRO staff estimates

Industrial production growth has been much lower as compared to the period before 2014.

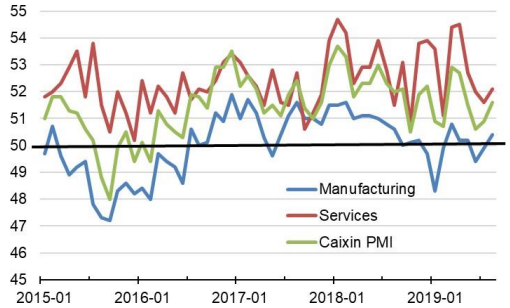
Industrial Production Growth



Source: CEIC

The Caixin PMI, which covers SMEs as well as large corporates, suggests lackluster confidence in the manufacturing sector.

Caixin PMI



Source: CEIC

An increasing number of fresh college graduates have been joining the services sector.

College Graduates Survey

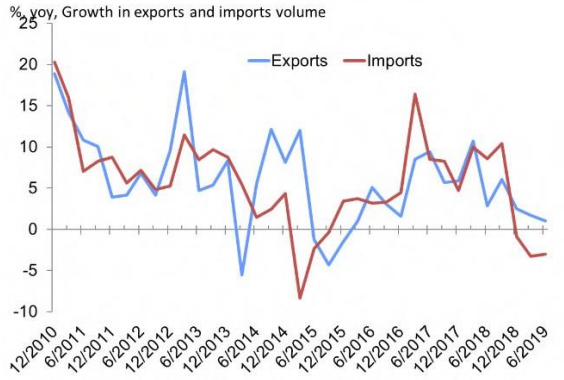
Employment Sector	Share of 2018 College Graduate (%)	Difference between 2018 and 2014 (%)
K12 schools and education institutions	12.7	4.1
Information technology and software	8.8	2.0
Medical and social care services	6.2	1.4
Mechanical equipment manufacturing	2.4	-1.9
Transportation equipment manufacturing	1.9	-1.5
Electrical and electronic equipment manufacturing	5.6	-1.5

Source: mycos.com.cn, China's 2014-2018 graduates' employment evaluation

Figure 1.2. Exte rnal Sector

In terms of volume, goods imports declined while goods exports managed to grow slightly in H1 2019.

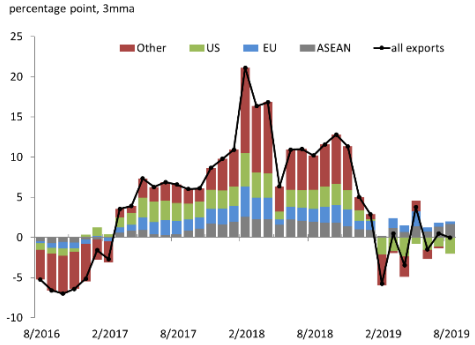
Chinese Goods Exports and Imports



Source: CEIC

In USD terms, goods exports to the U.S. declined, while those to other regions grew slowly.

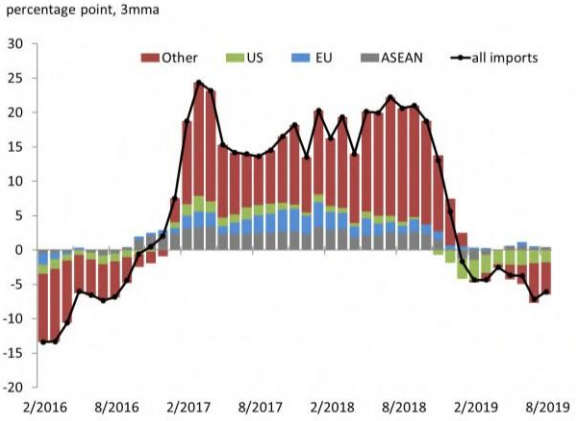
Chinese Exports in USD



Source: CEIC, AMRO staff calculations

In USD terms, goods imports declined, especially imports from the U.S.

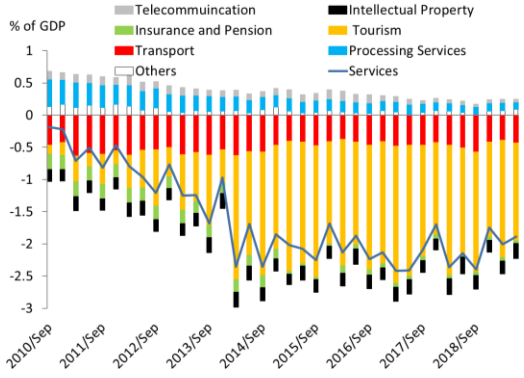
Chinese Imports in USD



Source: CEIC, AMRO staff calculations

Services sector trade deficits declined due to weaker Chinese tourist spending overseas.

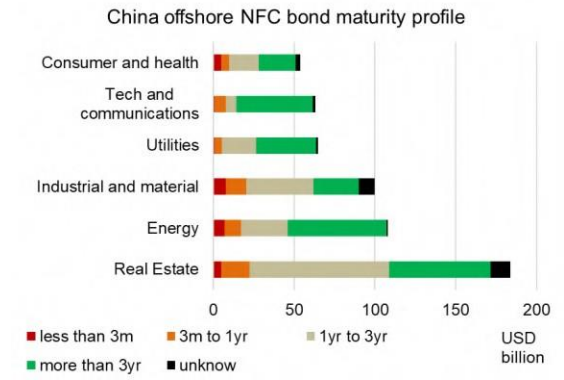
Services Trade Surplus/Deficits



Source: CEIC

For non-financial Chinese corporate offshore borrowings, sectors with weaker credit profiles, such as real estate, material and industrial businesses, also have a shorter maturity.

Maturity Profile of Non-Financial Chinese Corporate Overseas Bond

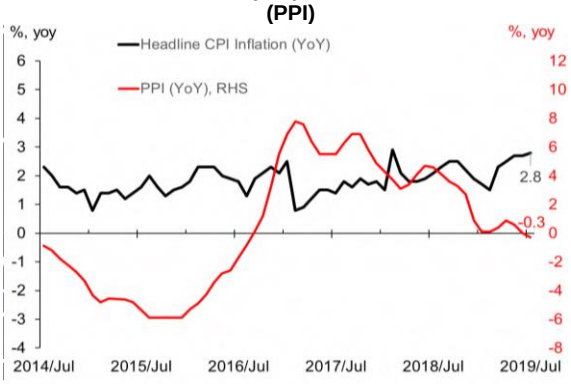


Note: the data is based on all bonds issued by overseas entities whose parent companies are domiciled in China.
Source: Wind, AMRO staff estimates

Figure 1.3. Monetary and Financial Sector

Headline CPI increased due to pork prices, while PPI declined slightly due to tepid demand.

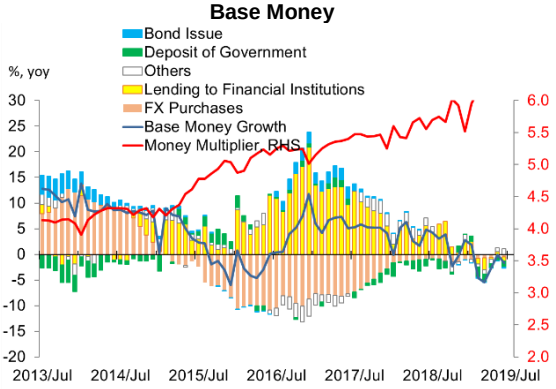
Consumer Price Index (CPI) and Producer Price Index (PPI)



Source: Wind, NBS

Base money has remained stable, but money multiplier has increased, supporting M2 growth.

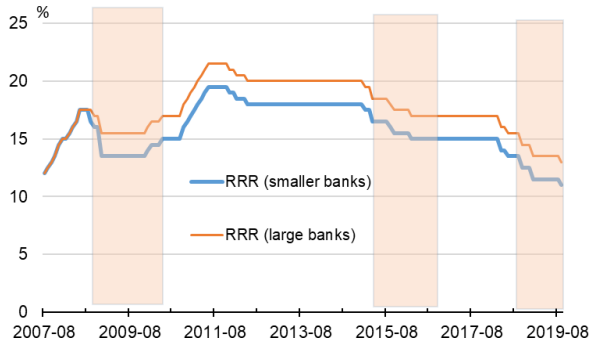
Base Money



Source: Wind, PBC

PBC has cut the reserve requirement ratio (RRR) multiple times to ensure sufficient liquidity.

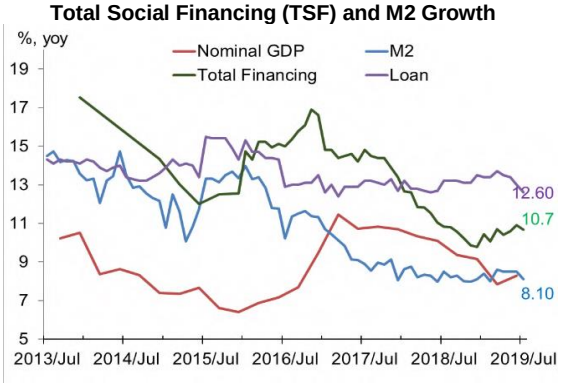
Reserve Requirement Ratio (RRR)



Source: Wind

Total social financing growth has picked up modestly, remaining slightly higher than nominal GDP growth.

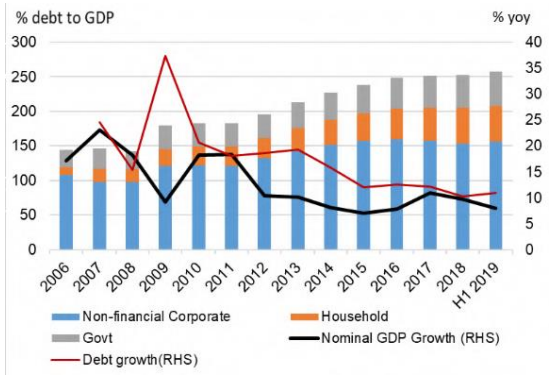
Total Social Financing (TSF) and M2 Growth



Note: Monthly data of TSF is interpolated with annual data prior to 2016.
Source: Wind, PBC

Although non-financial sector corporate debt-to-GDP has stabilized for the past few years, the level is still high.

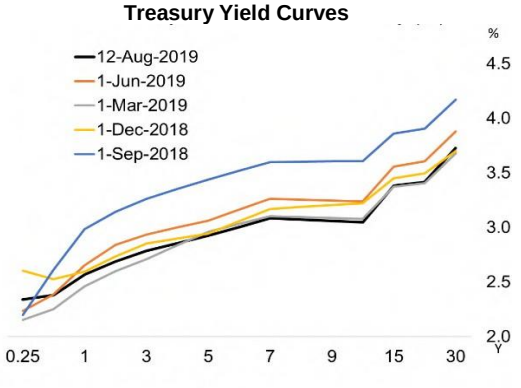
Non-Financial Sector Debt-to-GDP Ratio



Source: Wind, AMRO staff estimates

Long-term treasury interest rates have fallen, following the global trend.

Treasury Yield Curves

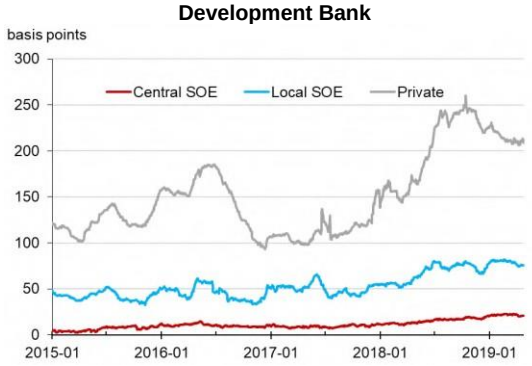


Source: Wind

Figure 1.4. Monetary and Fi ancial Sector (Continued)

In the onshore RMB bond market, the credit spread of private firms increased in 2018, but has eased somewhat since late 2018.

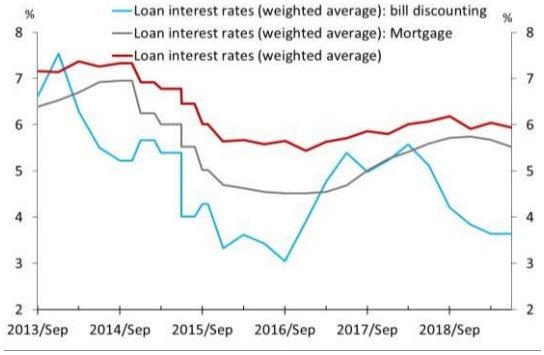
Credit Spreads over Bonds Issued by China Development Bank



Source: Wind

The bill discounting rate has been following the bond market interest rate more closely, but the bank loan rate has not moved down much.

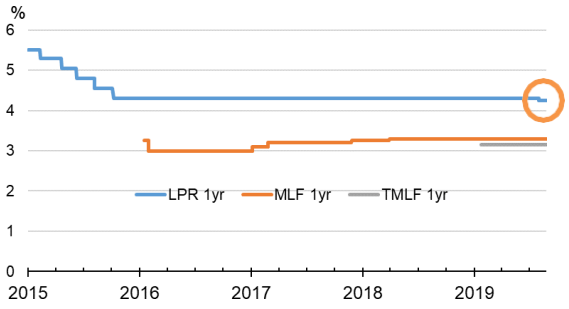
Various Loan Interest Rates



Source: Wind

In August 2019, PBC linked the Loan Prime Rate (LPR) to the 1-year Medium-term Lending Facility (MLF) rate, and LPR edged down slightly.

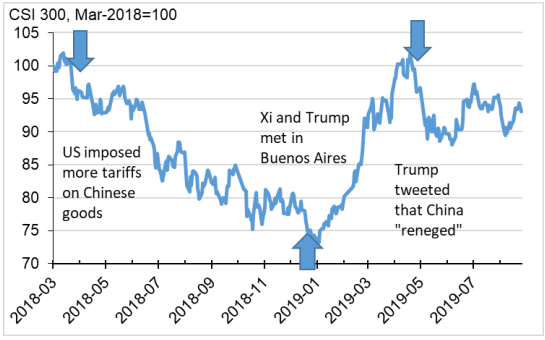
Loan Prime Rate



Source: Wind

The stock market is sensitive to the progress of the trade negotiations.

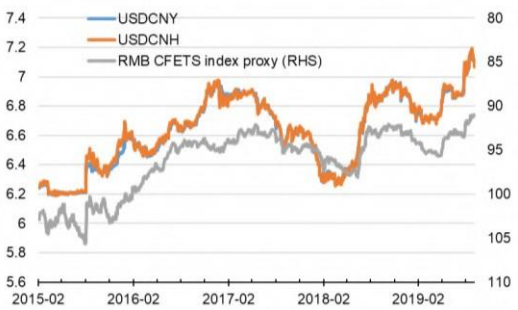
Stock Index



Source: Wind

Similarly, the RMB exchange rate is also sensitive to the progress of the trade negotiation. RMB has weakened against the USD since May 2019.

RMB Exchange Rate



Note: RMB CFETS index is estimated by AMRO daily and the source is not Chinamoney.com.cn.
Source: Wind

However, the FX forward and swap market's prices suggest a stable RMB exchange rate in the next 12 months.

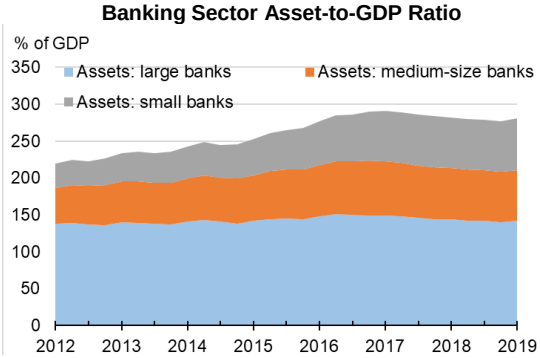
12-month Forward Points of CNY and CNH

Source: Wind

Figure 1.5. Banking Sector

Banking sector asset size is large (as percent of GDP).

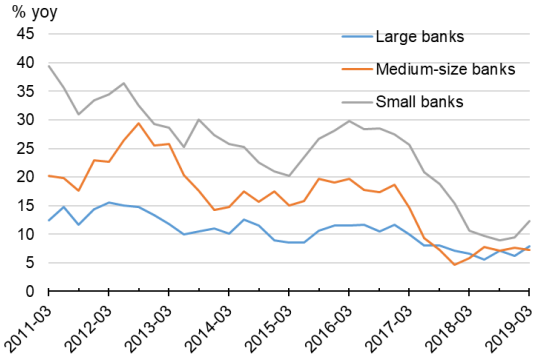
Banking Sector Asset-to-GDP Ratio



Source: Wind, CBIRC

Small and medium-sized banks' assets increased rapidly from 2012 to 2017, but their growth rates have moderated since 2017 due to deleveraging efforts.

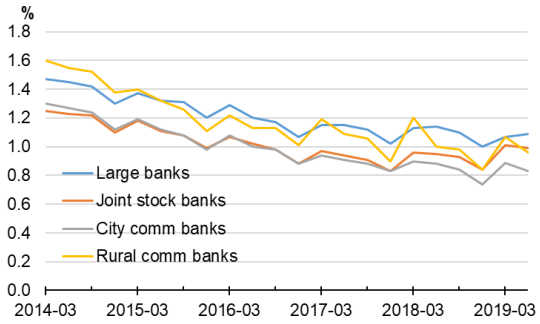
Banking Sector Assets Growth



Source: Wind, CBIRC

Banks' return on assets (ROAs) have declined, though large banks have fared better due to more sufficient deposits and hence lower funding rates.

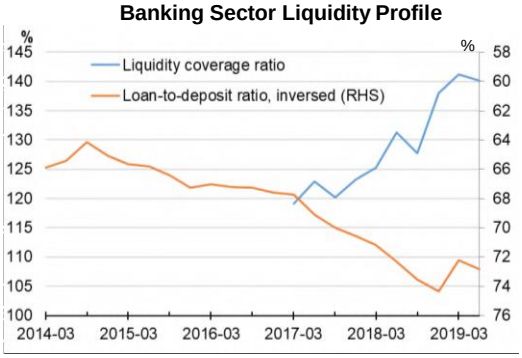
Banking Sector Return on Assets



Source: Wind, CBIRC

Although the banks' loan-to-deposit (LTD) ratio has increased recently, their liquidity coverage ratio (LCR) has continued to improve, in part due to reduced shadow banking activities.

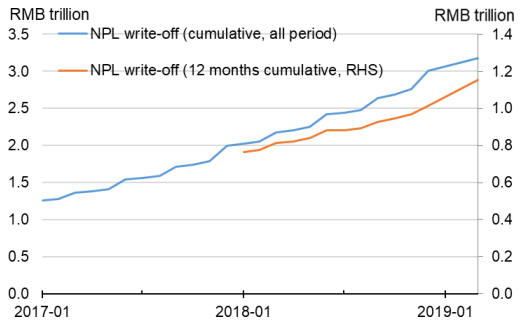
Banking Sector Liquidity Profile



Source: Wind, CBIRC

NPL disposal has been sizable and growing, through multiple channels including loan write-offs.

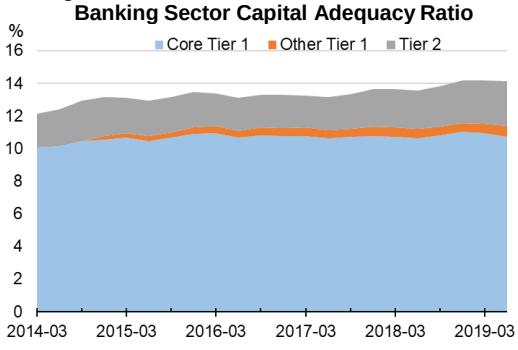
NPL Write-offs



Source: Wind, PBC, AMRO staff calculations

The banking sector's capital adequacy ratio (CAR) has increased. Although the share of "other tier 1" capital is lower than that of international peers, further perpetual bond issuance is expected to lift it moving forward.

Banking Sector Capital Adequacy Ratio



Source: Wind, CBIRC

Figure 1.6. Fiscal Sector

Budget 2019 is expansionary, and revenue growth is budgeted to grow more slowly than expenditure, particularly in the area of government fund.

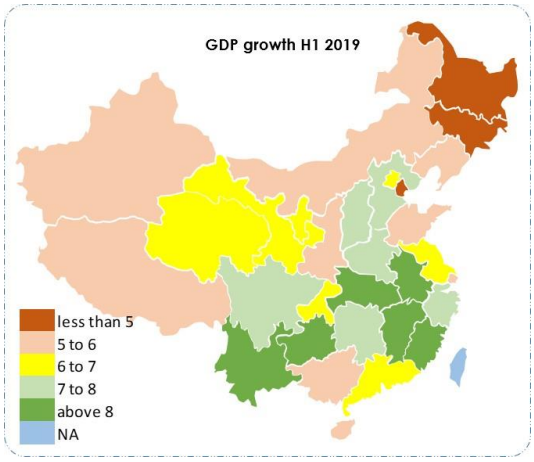
Budget 2019, National Aggregate, Four Books

	2019 Budget (National)	
	Revenue (RMB trillion)	Expenditure (RMB trillion)
General govt.	19.3	23.5
Government fund	7.8	10.0
SOE capital	0.34	0.24
Social insurance fund	8.0	7.4

Source: Wind

In H1 2019, some provinces in Southwestern and Central China have been growing the most rapidly, while the northeast has lagged behind.

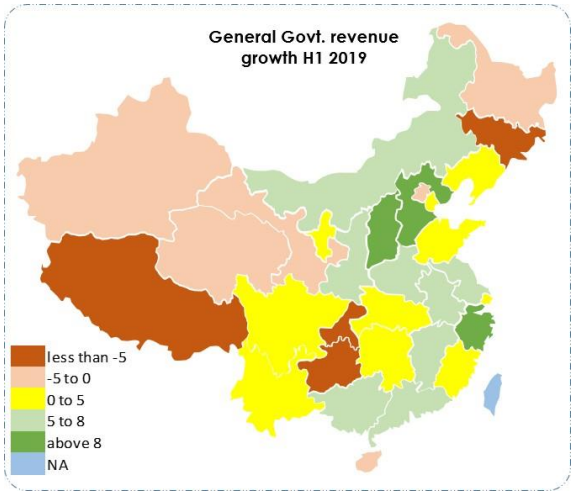
Provincial GDP Growth



Source: Wind

Over the same period, general government revenue declined in the northeast and grew modestly in the southwest despite its rapid GDP growth.

General Government Revenue Growth in H1 2019

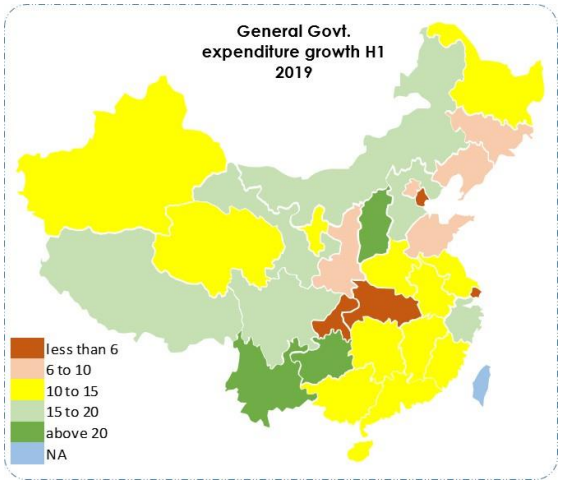


Note: The data for all provinces is from January-June 2019.

Source: Wind, Provincial Governments

General government expenditure grew faster than revenue in most provinces, the most rapid growth being in the southwest.

General Government Expenditure Growth in H1 2019



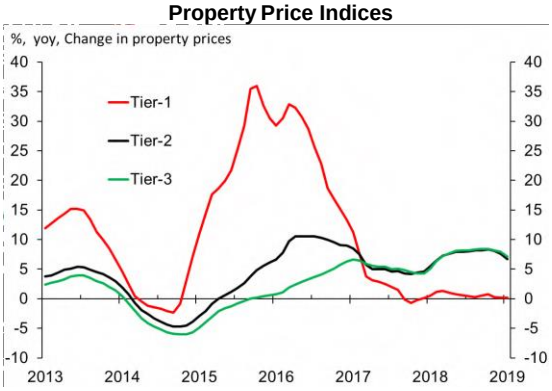
Note: For Heilongjiang, Jilin, Guangdong, Tianjin, Shandong, Liaoning, Sichuan, and Inner Mongolia, the data is from January-May 2019.

Source: Wind, Provincial Governments

Figure 1.7. Property Sector

Property price growth has been stable. In Tier-2 and Tier-3 cities, their price growth is similar to nominal GDP since 2018.

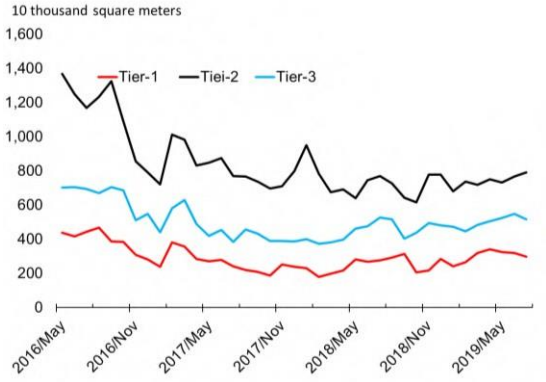
Property Price Indices



Source: CEIC

Transaction volume has been stable across different tiers.

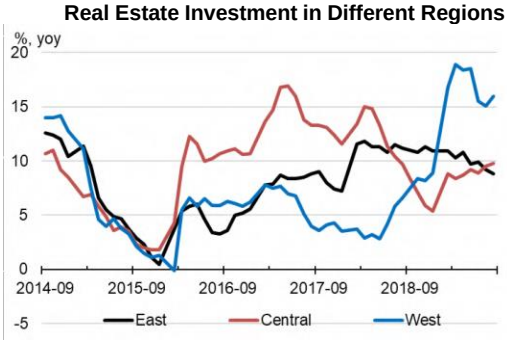
Property Transactions



Source: CEIC

But there is regional divergence. Transactions have edged up in the central region and increased sharply in the west, where the macroprudential measures have not been as tight as in eastern China cities.

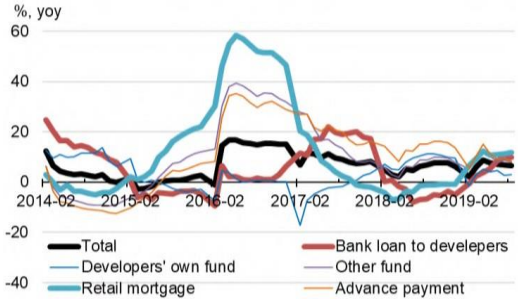
Real Estate Investment in Different Regions



Source: Wind

For property developers, overall funding has been stable. Of all the sources, bank loans and retail mortgages have increased in 2019, in part, due to an ease of the monetary policy.

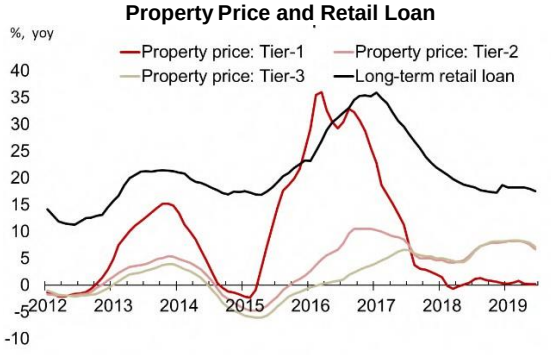
Funding Sources for Real Estate Projects



Source: Wind

Mortgage loan growth (proxied by long-term retail loan) has moved in tandem with property prices, and it has been growing at a rapid pace.

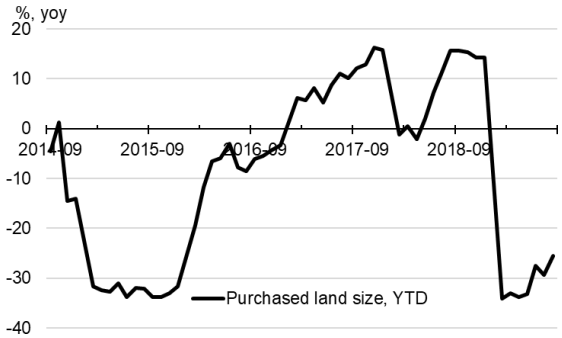
Property Price and Retail Loan



Source: Wind

Growth of land purchases by developers has contracted sharply in 2019, indicating that property transaction and investment will likely moderate in 2020.

Size of Land Purchased by the Developers



Source: Wind

Appendix 2. Selected Economic Indicators for China

	2014	2015	2016	2017	2018	2019 Projection	2020 Projection
Real Sector							
Nominal GDP (RMB trillion)	64.13	68.60	74.01	82.08	90.03	*97.86*	*106.08*
Nominal GDP (USD trillion)	10.41	10.92	11.14	12.16	13.61	*14.79*	*16.03*
Real GDP (% yoy)	7.3	6.9	6.7	6.8	6.6	*6.2*	*5.9*
Consumption (% yoy)	7.2	8.3	8.4	7.4	7.2	*6.8*	*6.4*
Gross Capital Formation (% yoy)	7.1	6.0	6.0	4.8	4.6	*5.0*	*4.0*
PMI (Mfg)	50.7	49.9	50.3	51.6	49.4	*49.5*	
PMI (non-Mfg)	54.4	53.6	53.7	54.6	55.6	*53.8*	
Labor Market							
Newly-hired Urban Population (Person mn)	13.2	13.1	13.1	13.5	13.6	*12.5*	*12.5*
Average Surveyed Unemployment Rate: Urban, %)	NA	NA	NA	NA	4.9	*5.1*	*5.0*
Average Wages (RMB)	56,360	62,029	67,569	74,318	82,461		
Growth in Average Wages (% yoy)	9.5	10.1	8.9	10.0	11.0		
External Sector							
Exports (% yoy, USD)	6.0	-2.6	-6.4	6.7	9.7	*1.0*	*2.0*
Imports (% yoy, USD)	0.7	-14.4	-5.4	15.9	15.8	*-1.0*	*2.0*
Trade Balance (% of GDP)	2.1	3.3	2.3	1.8	0.8	*2.8*	*2.5*
Current Account (% of GDP)	2.3	2.8	1.8	1.6	0.4	*1.0*	*1.0*
Financial and Capital Balance (% of GDP)	-1.6	-0.8	0.2	0.1	0.8	*0.3*	*0.2*
FDI (% of GDP)	2.6	2.2	1.6	1.4	1.5	*1.5*	*1.5*
ODI (% of GDP)	1.2	1.6	1.9	1.1	0.7	*0.8*	*1.1*
External Debt, Gross (% of GDP)	17.0	12.3	12.6	14.6	14.4		
Foreign Reserves (USD bn)	3843.0	3330.4	3010.5	3139.9	3072.7	*3107.2*	
Exchange Rate (Against USD, Period Average)	6.16	6.28	6.64	6.75	6.62	*7.12*	
Money and Prices							
M2 (% yoy)	12.2	13.3	11.3	8.1	8.1	*8.3*	*7.9*
Total Social Financing (% yoy)	14.3	12.6	16.6	13.4	9.8	*10.7*	
Total Loan (% yoy)	13.3	14.5	12.8	12.1	12.9	*12.8*	
Lending Rate (1y, Period End, %)	5.6	4.4	4.4	4.4	4.4	*4.4*	
CPI (Period Average, % yoy)	2.0	1.4	2.0	1.6	2.1	*2.8*	*2.5*
Core CPI (Period Average, % yoy)	1.6	1.5	1.6	2.1	1.9	*1.6*	*1.4*
Producer Price Index (Period Average, % yoy)	-1.9	-5.2	-1.4	6.3	3.5	*0.0*	*-1.0*
Fiscal Sector							
Revenue (% yoy)	8.6	5.8	4.5	7.4	6.2	*3.0*	*7.0*
Expenditure (% yoy)	8.3	13.2	6.3	7.6	8.7	*9.0*	*8.0*
Revenue (% of GDP)	21.9	22.2	21.6	21.0	20.4	*19.9*	*20.0*
Expenditure (% of GDP)	23.7	25.6	25.4	24.7	24.5	*25.0*	*24.0*
Overall Balance (% of GDP)	2.1	2.4	2.9	2.9	2.6	*-2.8*	*-2.9*
Government Debt (% of GDP)*	38.8	36.9	36.7	36.4	37.0	*38.0*	*39.0*
Financial Sector and Property Markets							
Shanghai Stock Exchange Composite Index	3235	3539	3104	3307	2494	*2960*	
Shanghai Interbank Offered Rate, Overnight (%)	3.53	1.99	2.23	2.84	2.55	*2.05*	
10 Year Treasury Bond Yield (%)	4.16	3.37	2.86	3.58	3.63	*3.14*	
Banking Capital Adequacy Ratio (%)	13.2	13.5	13.3	13.7	14.2	*14.1*	
NPL Ratio (%)	1.25	1.67	1.74	1.74	1.83	*1.81*	
New Constructed Home Prices (Average, %, yoy)	2.6	-3.8	6.2	8.3	6.2	*7.0*	
Second-hand Home Prices (Average, %, yoy)	1.1	-2.8	5.3	6.9	5.5	*7.0*	

Note: (i) The data is as of 31 August 2019
(ii) Government debt includes both central and local government debt
(iii) Number is blue cells is the latest, not forecast
Source: National Bureau of Statistics, Ministry of Finance, People's Bank of China, Ministry of Commerce, Ministry of Human Resources and Social Security, China Customs, China Banking Regulatory Commission, State Administration of Foreign Exchange, AMRO

Appendix 3. Balance of Payments

	2014	2015	2016	2017	2018
	(In percent of GDP)				
Current account	**2.3**	**2.8**	**1.8**	**1.6**	**0.4**
Goods	4.2	5.3	4.4	3.9	2.9
Exports	21.6	19.6	17.9	18.2	17.8
Imports	17.4	14.4	13.5	14.3	14.9
Services	-2.1	-2.0	-2.1	-2.1	-2.1
Exports	2.1	2.0	1.9	1.8	1.7
Imports	4.2	4.0	4.0	3.9	3.9
Primary income	0.1	-0.4	-0.4	-0.1	-0.4
Credit	2.3	2.0	2.0	2.4	1.7
Debit	2.2	2.4	2.4	2.4	2.1
Secondary income	0.0	-0.1	-0.1	-0.1	0.0
Capital and financial account	**-1.6**	**-0.8**	**0.2**	**0.1**	**0.8**
Capital account	0.0	0.0	0.0	0.0	0.0
Financial account	-0.5	-4.0	-3.7	0.9	1.0
Direct investment, net	1.4	0.6	-0.4	0.2	0.8
FDI	2.6	2.2	1.6	1.4	1.5
ODI	1.2	1.6	1.9	1.1	0.7
Portfolio investment, net	0.8	-0.6	-0.5	0.2	0.8
Liabilities (net inflow)	0.9	0.1	0.5	1.0	1.2
Assets (net outflow)	0.1	0.7	0.9	0.8	0.4
Other investment, net	-2.7	-4.0	-2.8	0.4	-0.6
Liabilities (net inflow)	0.5	-3.2	0.3	1.3	0.9
Liabilities (Currency and deposits)	0.8	-1.1	0.1	0.9	0.4
Liabilities (Loans)	-0.3	-1.5	-0.2	0.4	0.2
Liabilities (Trade credit)	0.0	-0.6	0.1	0.0	0.3
Assets (net outflow)	3.2	0.8	3.1	0.8	1.5
Reserve assets	-1.1	3.1	4.0	-0.8	-0.1
Net errors and omissions	**-0.6**	**-2.0**	**-2.1**	**-1.8**	**-1.2**
Overall Balance of Payments	**1.8**	**-1.2**	**-1.9**	**2.5**	**1.3**
Memorandum Items:					
Export growth (in USD, percentage change)	**4.6**	**-4.2**	**-6.9**	**10.5**	**9.1**
Goods (contribution)	4.0	-4.1	-6.5	10.3	8.3
Services (contribution)	0.5	-0.1	-0.4	0.2	0.8
Import growth (in USD, percentage change)	**5.7**	**-10.7**	**-3.0**	**13.9**	**15.2**
Goods (contribution)	0.9	-10.8	-3.3	12.3	12.7
Services (contribution)	4.8	0.1	0.3	1.6	2.4
External debt (percentage of GDP)	**17.0**	**12.3**	**12.6**	**14.6**	**14.4**

Source: Chinese authorities, AMRO staff estimates

Appendix 4. Statement of Central/ General Government Operations

	2014	2015	2016	2017	2018	2019 budget
	(In RMB trillion)					
National General Budget Revenue	**14.0**	**15.2**	**16.0**	**17.3**	**18.3**	**19.3**
yoy	*8.6*	*5.8*	*4.5*	*7.4*	*6.2*	*5.0*
Tax Revenue	11.9	12.5	13.0	14.4	15.6	
Consumption	0.9	1.1	1.0	1.0	1.1	
VAT	3.1	3.1	4.1	5.6	6.2	
Business	1.8	1.9	1.2	0.0	0.0	
Corporate Income	2.5	2.7	2.9	3.2	3.5	
Personal Income	0.7	0.9	1.0	1.2	1.4	
Others	3.0	2.8	2.9	3.4	3.5	
Non-Tax Revenue	2.1	2.7	2.9	2.8	2.7	
Carry Over Balances and Transfer Funds	0.1	0.8	0.7	1.0	1.5	
Total National General Budget Revenue	**14.1**	**16.1**	**16.7**	**18.3**	**19.8**	
National General Buget Expenditure	**15.2**	**17.6**	**18.8**	**20.3**	**22.1**	**23.5**
yoy	*8.3*	*13.2*	*6.3*	*7.6*	*8.7*	*6.5*
General Public Services	1.3	1.4	1.5	1.7	1.8	
National Defense	0.8	0.9	1.0	1.0	1.1	
Public Safety	0.8	0.9	1.1	1.2	1.4	
Education	2.3	2.6	2.8	3.0	3.2	
Science and Technology	0.5	0.6	0.7	0.7	0.8	
Social Security and Employment	1.6	1.9	2.2	2.5	2.7	
Health Care and Family Planning	1.0	1.2	1.3	1.4	1.6	
Urban and Rural Community Affairs	1.3	1.6	1.8	2.1	2.2	
Transportation	1.0	1.2	1.0	1.1	1.1	
Others	4.4	5.3	5.4	5.6	6.1	
To Supplement Central Govt Stability Fund	**0.1**	**0.1**	**0.1**	**0.3**	**0.1**	
Total National General Budget Expenditure	**15.3**	**17.7**	**18.9**	**20.6**	**22.2**	
General Budget Balances	**-1.1**	**-1.6**	**-2.2**	**-2.4**	**-2.4**	
	(In percent of GDP)					
National General Budget Revenue	**21.9**	**22.2**	**21.6**	**21.0**	**20.4**	**19.8**
Tax Revenue	18.6	18.2	17.6	17.6	17.4	
Consumption	1.4	1.5	1.4	1.2	1.2	
VAT	4.8	4.5	5.5	6.9	6.8	
Business	2.8	2.8	1.6	0.0	0.0	
Corporate Income	3.8	4.0	3.9	3.9	3.9	
Personal Income	1.2	1.3	1.4	1.5	1.5	
Others	4.6	4.1	3.9	4.1	3.9	
Non-Tax Revenue	3.3	4.0	4.0	3.4	3.0	
Carry Over Balances and Transfer Funds	0.0	1.2	1.0	1.2	1.6	
Total National General Budget Revenue	**21.9**	**23.4**	**22.5**	**22.3**	**22.0**	
National General Buget Expenditure	**23.7**	**25.6**	**25.4**	**24.7**	**24.5**	**24.2**
General Public Services	2.1	2.0	2.0	2.0	2.0	
National Defense	1.3	1.3	1.3	1.3	1.3	
Public Safety	1.3	1.4	1.5	1.5	1.5	
Education	3.6	3.8	3.8	3.7	3.6	
Science and Technology	0.8	0.9	0.9	0.9	0.9	
Social Security and Employment	2.5	2.8	2.9	3.0	3.0	
Health Care and Family Planning	1.6	1.7	1.8	1.8	1.7	
Urban and Rural Community Affairs	2.0	2.3	2.5	2.5	2.5	
Transportation	1.6	1.8	1.4	1.3	1.3	
Others	6.9	7.7	7.3	6.8	6.8	
To Supplement Central Govt Stability Fund	**0.1**	**0.1**	**0.1**	**0.4**	**0.1**	
Total National General Budget Expenditure	**23.8**	**25.8**	**25.5**	**25.2**	**24.6**	
General Budget Balances	**-2.1**	**-2.4**	**-2.9**	**-2.9**	**-2.6**	**-2.8**

Notes: Some number of 2019 budget are available on the central government level, but not at the national level.
Source: Chinese authorities, AMRO staff estimates

Appendix 5. Monetary and Banking Survey

	2014	2015	2016	2017	2018
Money supply	(Annual percentage change, unless otherwise specified)				
Broad money (M2) (percent of GDP)	383.1	405.9	418.9	411.9	405.8
Broad money (M2)	12.2	13.3	11.3	8.1	8.1
M1	9.3	3.2	15.2	21.4	11.8
M0	7.1	2.9	4.9	8.1	3.4
Money multiplier (times)	4.2	5.0	5.0	5.2	5.5
Reserve requirement ratio (RRR) (percentage of deposit liabilities)					
Large banks	20.0	20.0	17.5	17.0	17.0
Small and medium-sized banks	18.0	18.0	15.5	15.0	15.0
Total social financing	(Annual percentage change, unless otherwise specified)				
Total social financing (percent of GDP)	189.8	202.2	227.1	227.6	227,5
Total social financing	14.3	15.0	19.8	14.4	10.2
Bank loans (contribution)	9.2	8.8	8.5	8.1	7.9
Shadow banking (contribution)	2.3	0.6	0.9	2.1	-1.5
Net corporate bond financing (contribution)	2.2	2.4	2.3	0.3	0.9
Others (contribution)	0.6	3.2	8.1	3.9	2.9
Banks	(Annual percentage change)				
Deposits	9.1	19.2	11.0	9.0	8.2
Loans	13.6	15.0	13.5	12.7	13.5
Small and Micro Enterprise Loans	NA	NA	13.8	15.1	8.9
Major bank loans					
Real estate (RMB loan)	18.9	21.0	27.0	20.7	20.2
Mortgage (RMB loan)	17.6	23.1	35.0	14.4	17.6
Manufacturing (all currency)	8.0	5.0	2.9	5.1	6.0
Infrastructure (all currency)					
Water conservancy, environment and public facilities	NA	NA	NA	25.9	6.1
Transportation, warehousing and postal services	13.1	10.3	6.3	10.3	10.5
Banking sector soundness indicators	(In percentage, unless otherwise specified)				
Non-performing loan ratio	1.3	1.7	1.7	1.7	1.8
Special-mention loan ratio	3.1	3.8	3.9	3.5	3.1
Provision coverage ratio (provisions/NPLs)	232.1	181.2	176.4	181.4	186.3
Loan-to-deposit ratio	65.1	67.2	67.6	70.6	74.3
Liquidity coverage ratio	NA	NA	NA	123.3	138.0
Net interest margin	2.7	2.5	2.2	2.1	2.2
Return on assets	1.2	1.1	1.0	0.9	0.9
Return on equity	17.6	15.0	13.4	12.6	11.7
Capital Adequacy Ratio	13.2	13.5	13.3	13.7	14.2
Tier 1 capital adequacy ratio	10.8	11.3	11.3	11.4	11.6
Core Tier 1 Capital Adequacy Ratio	10.6	10.9	10.8	10.8	11.0

Source: Chinese authorities, AMRO staff estimates

Appendix 6. Data Adequacy for Surveillance Purposes: A Preliminary Assessment

Criteria/Key Indicators for Surveillance	Data Availability[i]	Reporting Frequency/Timeliness[ii]	Data Quality[iii]	Consistency[iv]	Others, if Any[v]
National Accounts	Available	Quarterly GDP, monthly CPI and PPI, monthly industrial production, monthly fixed asset investment, monthly retail trade	China has implemented a new quarterly GDP accounting measurement since 2015	-	More real quarterly GDP data for expenditure sides is welcomed
Labor market	Available	Quarterly data for newly-hired workers and unemployment	-	-	There is room to improve accuracy
Balance of Payments (BOP) and External Position	Available	Quarterly BOP data released within 3 months after the quarter ends, monthly trade data within 3-4 weeks after the month ends.	Errors and omissions can sometimes be large.	-	Earlier release is welcomed
State Budget and Government/ External Debt	Available	Monthly fiscal data released within 3-4 weeks after the month ends. Quarterly foreign debt data released within 3 months after the quarter ends. Yearly government outstanding debt data released within 6 months after the year ends.	-	-	
Money Supply and Credit Growth	Available	Monthly data release within 2-4 weeks after the month ends	-	-	-
Financial Sector Soundness Indicators	Available	Quarterly data release within 3 months after the quarter ends.	-	-	Earlier release is welcomed
SOE Statistics	Some key data available	Monthly data release within 2 months after the month ends	-	-	More detailed data is welcomed

Notes:
(i) Data availability refers to whether official data is available for public access by any means.

(ii) Reporting frequency refers to the periodicity at which the available data is published. Timeliness refers to how up to date the published data is relative to the publication date.

(iii) Data quality refers to the accuracy and reliability of the available data, considering the data methodologies used.

(iv) Consistency refers to both internal consistency within a data series and its horizontal consistency with other data series of either the same or different categories.

(v) Other criteria might also apply, if relevant. Examples include but are not limited to potential areas of improvement for data adequacy.

Source: AMRO staff compilation. This preliminary assessment will form the “Supplementary Data Adequacy Assessment" in the EPRD Matrix.

Annexes: Selected Issues

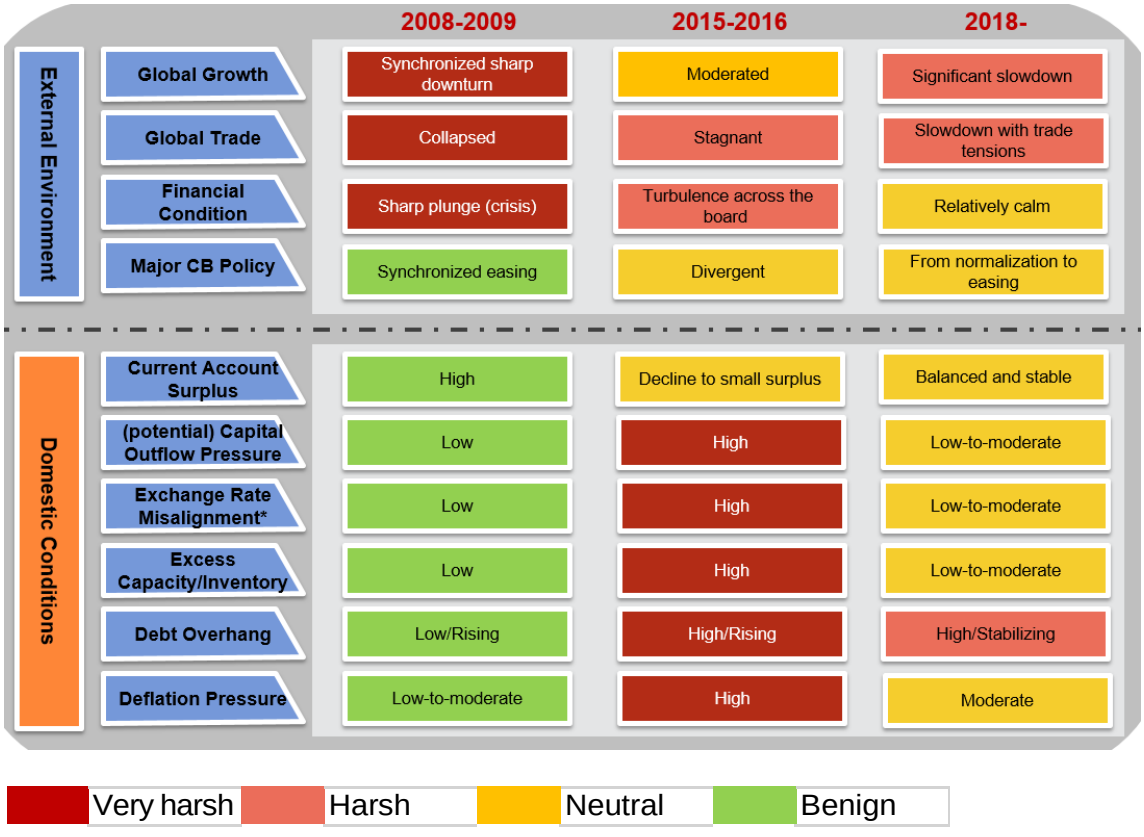
Annex 1. China's Current Stimulus Policy: A More Targeted and Measured Approach[17]

1. This analysis aims to qualitatively and quantitatively assess China's current stimulus packages. It attempts to answer the following two key questions. (1) what are the key characteristics of the current stimulus packages in comparison with two other packages during the past decade; and (2) how effective will the current stimulus package be?

Economic Slowdown and the Environments

2. **The causes of the current downturn can be traced to both domestic and external factors.** The trade tensions with the U.S. have been the main factor behind the current growth slowdown and weakened confidence. Nonetheless, the slowdown is also partly a result of a deleveraging campaign to ensure long-term financial stability, as corporates, especially private firms, have been facing tightened financing conditions. These are different from the downturn during 2008-2009, which was mainly driven by the global financial crisis (GFC) and the downturn 2015-16, which was mostly a result of domestic factors, including overcapacity in heavy industries, deflationary pressure (for producer prices), declining profitability of SOEs, as well as exchange rate and capital outflow pressures.

Figure A1.1 External and Domestic Environments Prior to the Three Downturns in the Last Decade

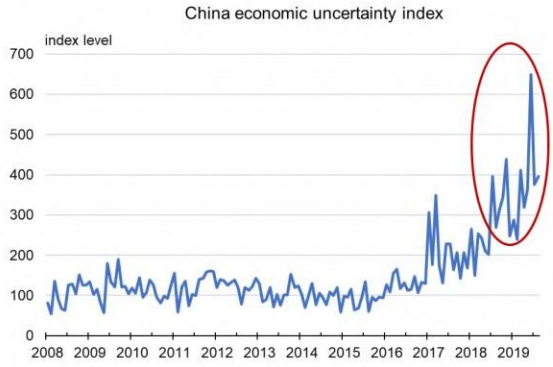


Source: AMRO staff

[17] Prepared by Jiao Zhiwen (Economist), Simon Liu Xinyi (Economist) and Justin Lim (Researcher).

3. **Current external and domestic conditions may not be as harsh as the previous two downturns (Figure A1.1), but uncertainty is much higher (Figure A1.2).** Although the external conditions including international trade have been worsening, they are still more benign compared to the GFC period, and during 2015-2016. The current domestic conditions are also more benign than the preceding downturn, albeit less so compared to the period prior to the GFC. Nonetheless, uncertainty as shown by the China policy uncertainty index, constructed based on news in Mainland Chinese newspapers, has been rising exponentially since the China-U.S. trade tensions escalated in H2 2018 (Figure A1.2).[18]

Figure A1.2 China Policy Uncertainty Index



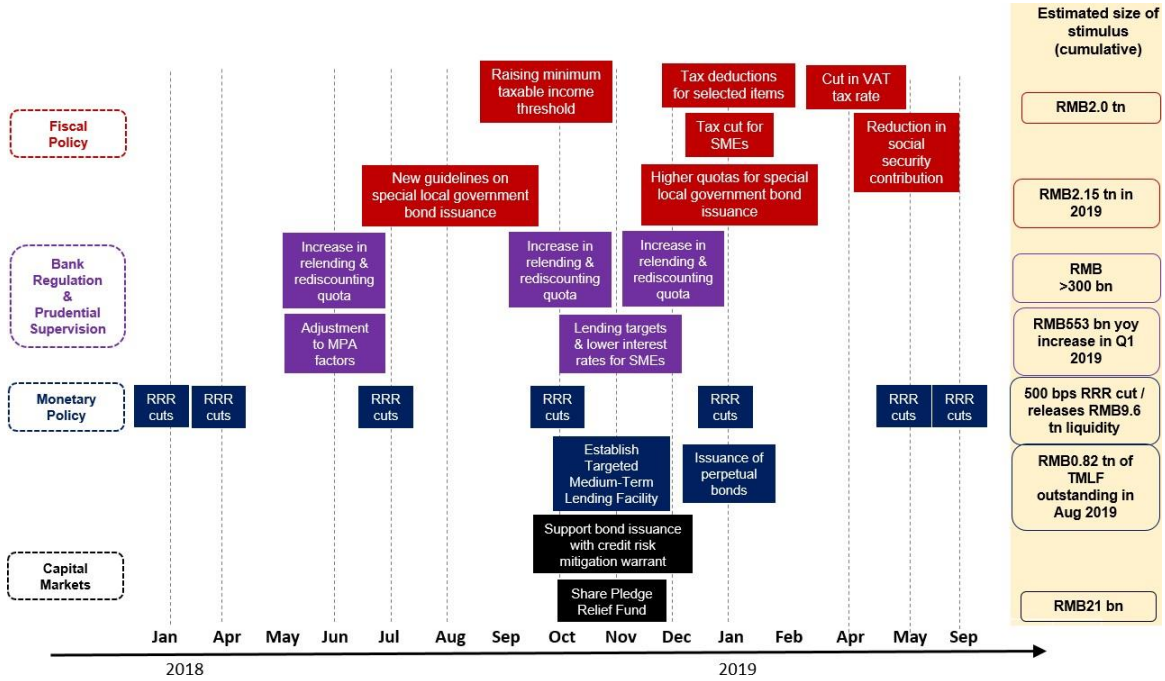
Source: "Economic Policy Uncertainty in China Since 1949: The View from Mainland Newspapers," by Steven J. Davis, Dingqian Liu and Xuguang S. Sheng, 2019.

Characteristics of the Current Stimulus Package

4. **The stimulus package has focused on tax and fee cuts, supported by moderate increase in infrastructure spending, and an easing of liquidity to the banks.** Figure A1.3 shows that the package includes various measures in the fiscal, monetary, bank regulation and supervision as well as capital market areas. Tax and fee cuts leave more incomes in the hands of the private sector, in particular, SMEs and lower-income residents. These reductions are complemented by several rounds of cuts in RRRs for banks to offset the effects of deleveraging and ensure that there is sufficient liquidity for banks to expand credit to the corporate sector, in particular SMEs, which have been badly affected by the deleveraging and the trade conflict. There are a number of other targeted measures to support SMEs.

[18] See https://www.policyuncertainty.com/china_monthly.html .The methodology is based on Steven J. Davis, Dingqian Liu and Xuguang S. Sheng, "Economic Policy Uncertainty in China Since 1949: The View from Mainland Newspapers."

Figure A1.3. Summary of Policy Measures in Different Areas

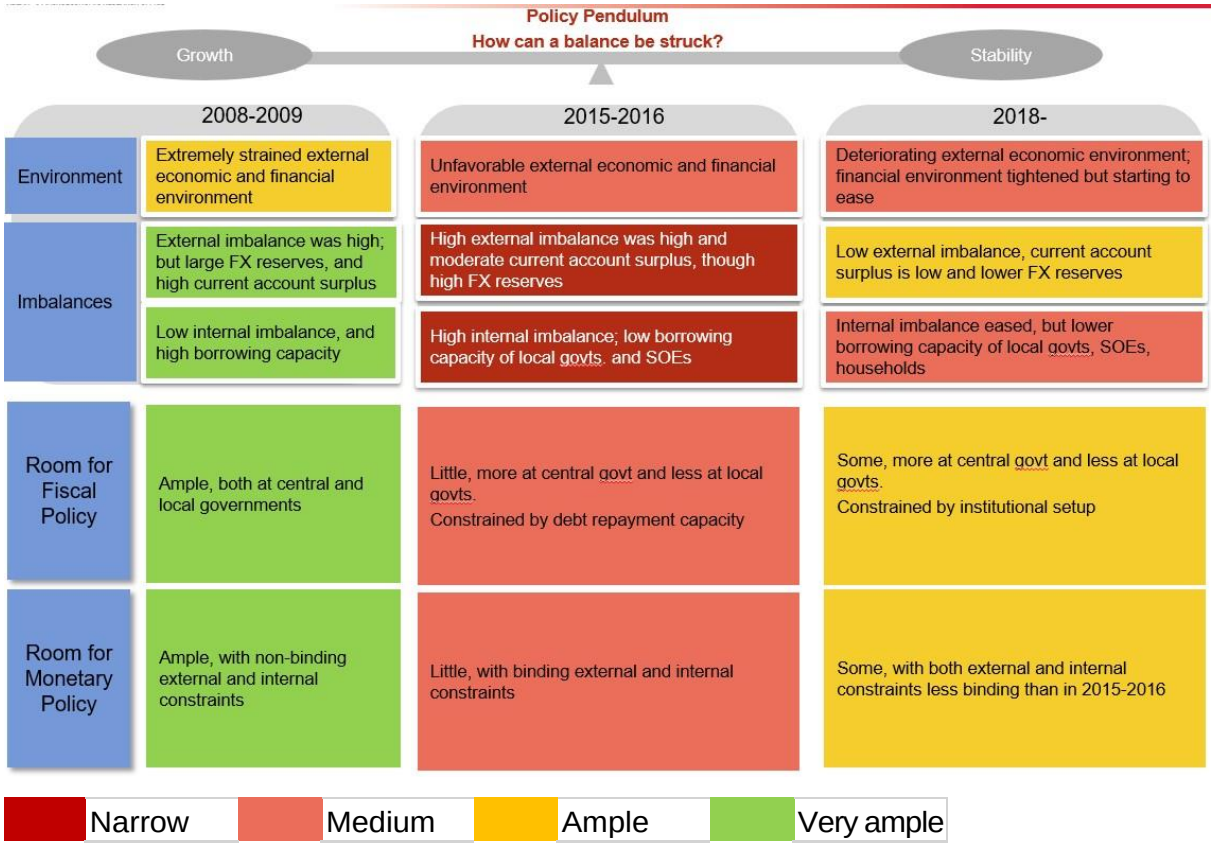


Source: AMRO staff

Policy Space

5. **The more targeted approach during the current period compared to the previous packages is prudent and practical, given narrower policy space compared to the past.** Figure A1.4 summarizes the room that policymakers have for conducting fiscal and monetary policies, given the economic environment and the constraints from external and internal imbalances. Currently, the policy space is significantly narrower compared with the 2008-2009 period, mainly due to a higher debt level especially in the corporate sector and local governments. Essentially, policymakers can no longer rely extensively on measures that would induce more borrowing by corporates and local governments without adversely affecting debt sustainability. Notwithstanding, the current policy space is somewhat bigger compared with the 2015-2016 period as the problem of overcapacity in the industrial sector has been largely resolved, the corporate sector has become more profitable, and the exchange rate has become more flexible.

Figure A1.4. Policy Space

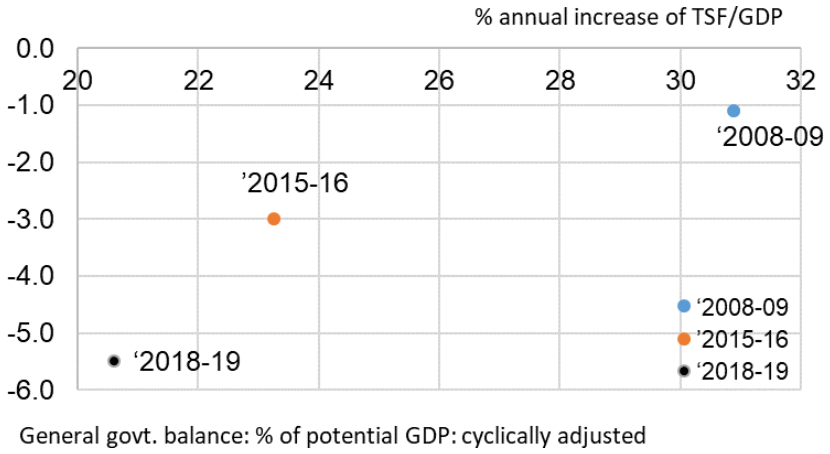


Source: AMRO staff

Size of Stimulus

6. **The current stimulus package is large in terms of fiscal stimulus but moderate in terms of credit stimulus.** It is not straightforward to measure the size of the stimulus package in China. Some elements of the fiscal stimulus in the past were not captured by general government spending. In particular, infrastructure investment could be financed by government funds revenue and LGFVC financing, which are reflected in TSF. To roughly gauge the size of the stimulus package, we created a Policy Stimulus Matrix that can capture these dimensions (Figure A1.5). The matrix shows cyclically-adjusted general government fiscal balance to GDP on the vertical axis and the (annual) increase in TSF to GDP on the horizontal axis. Figure A1.5 shows that during the GFC, the cyclically-adjusted fiscal deficit was low at slightly above 1 percent but the increase in TSF to GDP was large at over 30 percent. In contrast, while the cyclically adjusted fiscal deficit to GDP for the current package is much higher than those during the past two episodes, reflecting the tax and fee cuts, the increase in TSF to GDP ratio is expected be more modest. The important implication is that, given the smaller increase in TSF to GDP for the current package, the debt-to-GDP level is unlikely to increase substantially, unlike in the past.

Figure A1.5 Policy Stimulus Matrix



Note: General government balance (cyclically adjusted) is based on IMF estimate

Source: Wind, IMF, AMRO staff estimates

Institutional Factors and Policy Control

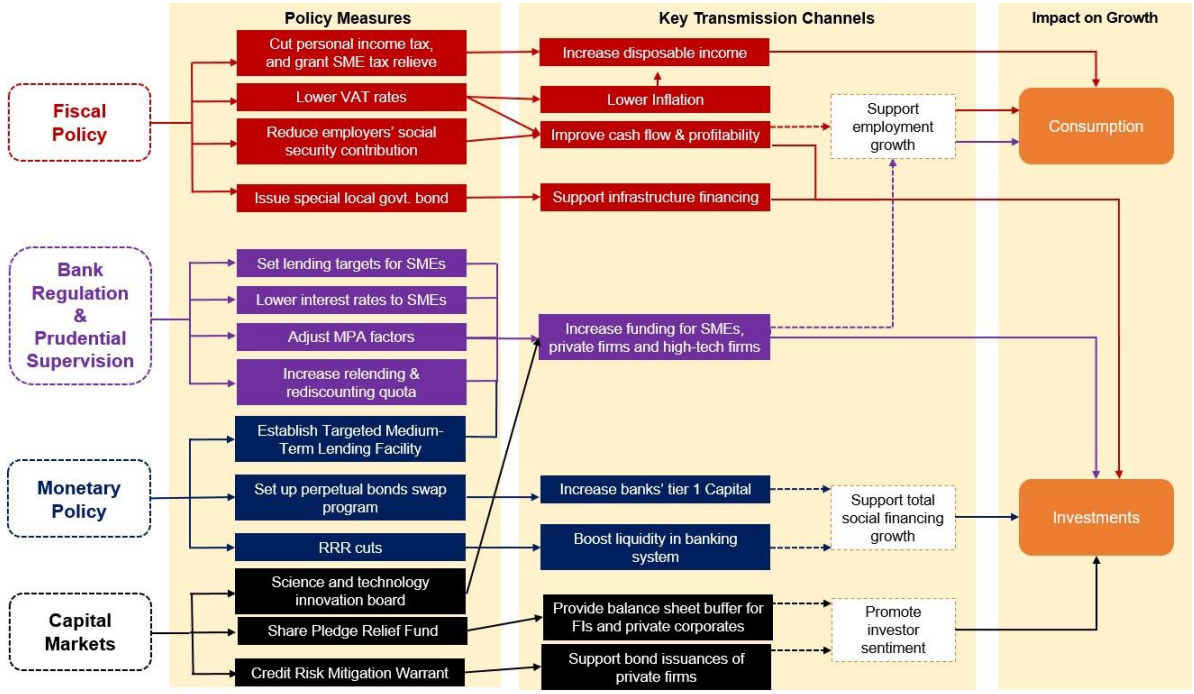
7. **Fiscal reform and strengthened financial regulation are expected to help limit the negative side effects during the past stimulus periods**:

- **The New Budget Law will help ensure that the stimulus package is more measured and can be better monitored.** China passed the new National Budget Law in August 2014 and started implementing the legislation in January 2015, laying the foundation for a more balanced and transparent government budget and financing structure. Under the law, local governments can no longer use entities such as LGFVCs to borrow from banks to finance investment projects. Instead, they need to issue local government bonds, within the quota authorized by the National People's Congress, to finance public welfare projects spending. In this way, the total size of the stimulus can be better controlled and monitored.
- **Stricter regulations on banks will help curb reliance on financing from shadow banking activities for local governments' infrastructure projects.**

Policy Transmission Mechanism

8. **The current policy mix is expected to bolster incomes and profits, which will in turn boost employment and consumption.** Tax and fee cuts and easier monetary conditions will improve the profit and cash flow of corporates, in particular SMEs, and individuals. Easing monetary and liquidity conditions together with a better capitalized banking system and capital markets will also help to support credit growth and enhance investors' sentiments. All these measures are expected to boost employment, investment and consumption (Figure A1.6).

Figure A1.6 Transmission Mechanism



Source: AMRO staff

Quantitative Assessment of the Effect

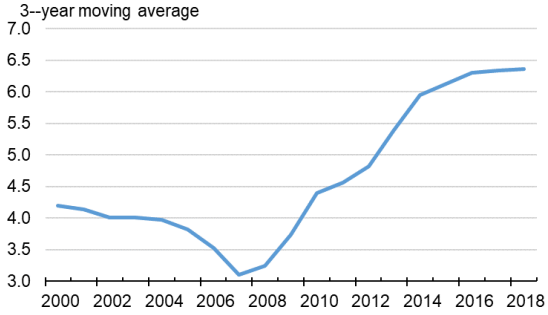
9. **We estimate that the effect of the tax and fee cuts on GDP growth would be significant, at least 0.5 percentage points annualized.** Based on imputation from the Input-Output (IO) table, we estimate that the RMB2.0 trillion tax and fee cuts would lift GDP by 0.5 percent. The results also show that the industrial sector, especially the upstream businesses, could benefit the most from the VAT cut. In another exercise based on the Oxford Economics Model, a macro-econometric model which can capture near-term dynamic effects, we found that the impact of the cuts on corporates, excluding personal income tax cuts, would be 0.32 percent annualized (See Appendix: Quantitative Assessment of the Stimulus Package for details). In addition to the direct effects, the boost to corporate and consumer confidence would also be a very important factor supporting growth. As the confidence factor is more difficult to model, our estimates do not contain this impact. Hence, the estimate of the impact that includes the confidence effect is expected to be higher.

10. **The long-term effects of the tax and fee cuts could be considerable.** Our quantitative estimates do not capture such long-term effects. However, in our view, the effects of the fiscal package could be significant over the longer term as they are likely to reduce costs, improve profitability and stimulate investment and growth.

11. **The easing monetary and credit conditions could lift GDP by about 0.6 percentage points.** We assess the effect of monetary and credit measures on growth by 1) estimating the increase in TSF and then 2) estimating the impact on growth of the higher TSF using the credit multiplier.

- **In 2019, the additional amount of TSF due to the measures is expected to be around** RMB5.4 trillion or **6.0 percent of the previous year's GDP**.[19]
- **The credit multiplier is estimated to be 0.14,** based on the result of Chen et al. (2017) and a further adjustment, which takes into account an increasing incremental capital-output ratio.
    - A study using the data from 2001 to 2008 by Chen et al. (2017) estimated the credit multiplier to be 0.17.[20]
    - However, the credit multiplier is expected to have declined in recent years due to declining investment efficiency in China. In particular, China's incremental capital-output ratio (ICOR) is estimated to have increased significantly since the GFC (Figure A1.7), from an average of 3.7 in 2001-08 to 6.4 in 2018.
    - Based on a simple assumption that the credit multiplier has declined proportionally to the increase in ICOR, we estimate that size of the current credit multiplier is 0.10 (0.17×(3.7/6.4)).
    - Therefore, the additional TSF is expected to add 0.6 (0.10*6.0) percentage point to growth.

Figure A1.7. Incremental Capital–Output Ratio (ICOR) in China



Source: Wind, AMRO staff estimate

Conclusions

12. **Drawing lessons from past experience, the authorities have carefully rolled out a calibrated stimulus package to support growth.** The strong fiscal policy package with an

[19] This is based on a simple linear extrapolation that TSF growth would have slowed by the same pace as in 2018, had there been no monetary and credit measures; it is also based on an assumption with the monetary and credit measures, TSF growth will be at about the same pace as nominal GDP growth (as intended by to the 2019 Government Work Report).

[20] They employed a joint estimation of credit and fiscal multipliers in China, by using a time series of provincial level data. The model specification is:

$$\frac{Y_{it}-Y_{it-1}}{Y_{it-1}} = \alpha_i + \gamma_t + \beta_G \frac{G_{it}-G_{it-1}}{Y_{it-1}} + \beta_{CG}\frac{CR_{it}-CR_{it-1}}{Y_{it-1}} + \varepsilon_{it}$$

where Y_{it} is the GDP, G_{it} is government expenditure, CR_{it} is credit, all in province i in year t. β_{CG} is the parameter of the credit multiplier, time fixed effects γ_t change through time, and individual province fixed effects α_i change across provinces.

emphasis on tax and fee cuts is expected to lift China's growth by about 0.5 percentage point. The easier monetary and liquidity conditions are expected to help shore up growth by 0.6 percentage point. So far, these policy measures have helped avoid a sharp economic slowdown and improved business, investor and consumer confidence, although worsening confidence indicators could be seen following each round of escalation of the trade conflict. The impact of the measures will gradually filter through over the rest of 2019 and 2020. Looking ahead, any additional measures to mitigate the impact of escalating trade tensions on growth should be carefully designed and aimed at supporting short-term growth while mitigating long-term risks.

Reference

Sophia Chen, Lev Ratnovski, Pi-Han Tsai. 2017. "Credit and Fiscal Multipliers in China", IMF Working Paper No. 17/273.

Appendix 1.1: Quantitative Assessment of the Stimulus Package

1. **This Annex discusses quantitative approaches and assessments of China's fiscal and monetary policy efforts.** First, we used two methods to obtain a back-of-the-envelope estimate on the effects of China's tax and fee cuts. Second, we also assess the effect of easing monetary and liquidity conditions, using estimates by Chen et, al. (2017).

2. **How did we quantitatively assess the effects of tax and fee reductions?** We employed two models: (1) imputation using the Input-Output (IO) table; and (2) a simulation using the Oxford Economics model.

Estimating the impact of the tax and fee cuts using the Input-Output (IO) Table

3. Using the IO table, we quantitatively examine direct impact of tax cuts on different sectors in the economy taking into account their interdependencies in the national economic system, starting from the following equilibrium equation:

$$\boldsymbol{Impact}_{tax\_cut} \quad \stackrel{D}{=} (\boldsymbol{I} - \boldsymbol{A}_{tax\_cut}^{-1}$$

where: $\boldsymbol{I}$ is the unit matrix, $\boldsymbol{A}^D$ is the matrix of China's national IO table consisting of the input-output relationships of different economic sectors, Matrix $(\boldsymbol{I} - \boldsymbol{A}^D)^{-1}$ refers to the Leontief inverse matrix and was downloaded from the OECD,[21] $\boldsymbol{F}_{tax\_cut}$ is a vector whose components correspond to the amount of tax and fee cuts for each sector, $\boldsymbol{Impact}_{tax\_cut}$ is a vector whose components correspond to the total impact on each sector, and the sum of all elements of $\boldsymbol{Impact}_{tax\_cut}$ is the total impact on GDP. As there are a few major kinds of tax and fee cuts, covering value-added tax (VAT), social security premiums, corporate income tax and personal income tax, the total impact is the sum of the impact of each of them:

$$\boldsymbol{Impact}_{total\_tax\_cut} = \boldsymbol{Impact}_{VAT\_cut} + \boldsymbol{Impact}_{personal\_cut} + \boldsymbol{Impact}_{other\_tax\_cut} ,$$

$$\boldsymbol{Impact}_{VAT\_cut} \quad \stackrel{D}{=} (\boldsymbol{I} - \boldsymbol{A}_{VAT\_cut}^{-1}$$

$$\boldsymbol{Impact}_{personal\_cut} \quad \stackrel{D}{=} (\boldsymbol{I} - \boldsymbol{A}_{personal\_cut}^{-1} \quad \boldsymbol{F} ,$$

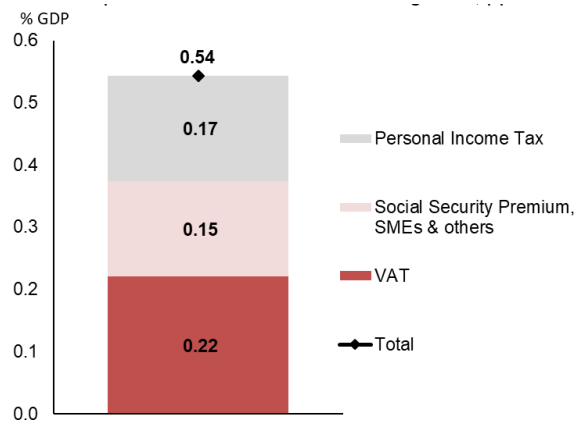
$$\boldsymbol{Impact}_{other\_tax\_cut} \quad \stackrel{D}{=} (\boldsymbol{I} - \boldsymbol{A}_{other\_tax\_cut}^{-1} \quad \boldsymbol{I}$$

4. As shown in Figure A1.1.1, the total impact on GDP growth is 0.54 percent. We also found that the industrial sector could benefit the most, in particular the upstream businesses.

[21] See https://www.oecd.org/industry/ind/measuring-trade-in-value-added.htm.

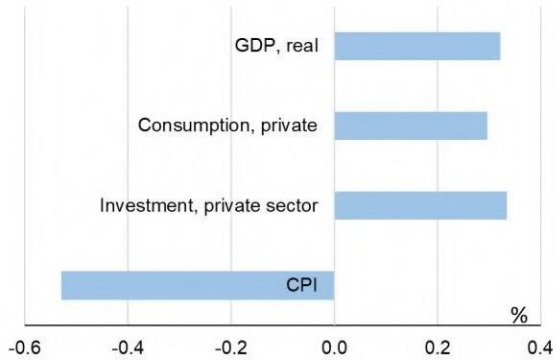
As the output of upstream businesses is used intensively in the economy, they benefit from a lower VAT rate for all its downstream businesses.

Figure A1.1.1. Impact on GDP growth, Percentage Points



Source: OECD Tiva 2015, Ministry of Finance, AMRO staff estimates

Figure A1.1.2. Impact on Key Economic Variables



Source: Oxford Economics, AMRO staff estimates

5. However, such a simple approach cannot sufficiently capture dynamics in the economy as well as the potentially enlarged tax base in the longer term. This approach assumes a static economic structure and therefore cannot exhibit the dynamic impact of the tax cuts, which could increase over time. It also rules out changes in the tax base down the road. In practice, tax cuts will effectively broaden the tax base, thereby providing more benefits to the economy in the longer term. The structure of the economy will improve as tax and fee cuts benefit the SMEs the most, and these make up arguably the most dynamic sector in terms of boosting employment.

Estimating the impact of tax and fee cuts using the Oxford Economics model

5. The Oxford Economics model captures key economic relationships both in the short- and long-run. In the short run, shocks to demand will generate an economic cycle, but over the long run, output is determined by supply-side factors.

6. We apply a shock to “total tax revenue” for China in the model by assuming that it would fall by an annualized RMB1.5 trillion every year from April 2019 onwards. The RMB1.5 trillion is our estimated sum of cuts in VAT, corporate income tax and social security premiums. The will affect “company profits” and “government revenue”, which will impact the rest of the economy.

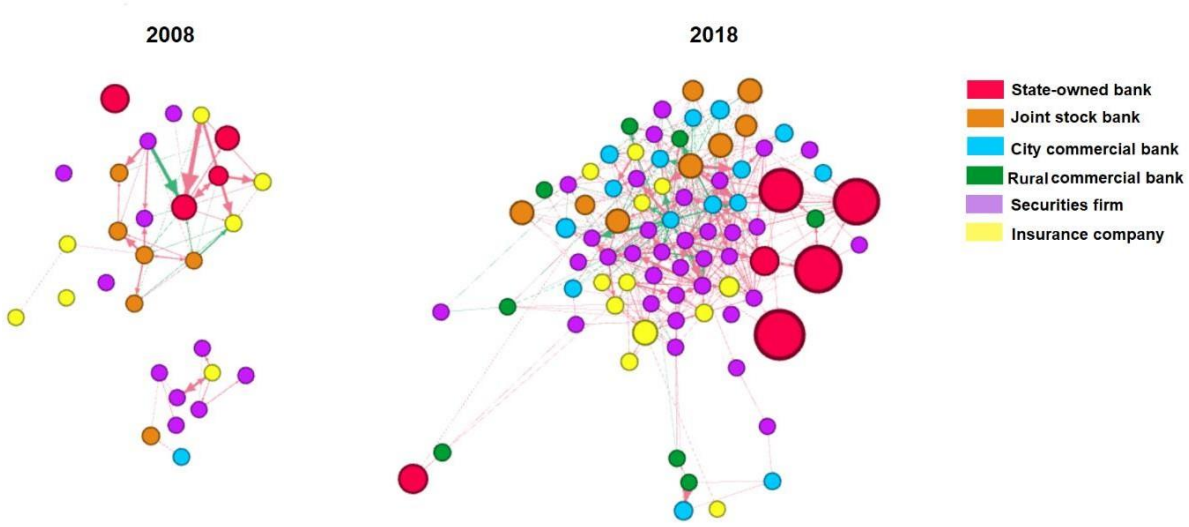
7. As shown in Figure A1.1.2, the total impact on GDP growth is 0.32 percent per year in the next two years. This decline in tax revenue lifts corporate profits and encourages corporate investment. It also lowers the prices of goods and services, and encourages consumption.

9. Although the application of this model can show the efforts over time, it cannot capture linkages across different manufacturing and services segments of the economy, as the model focuses only on the aggregate level. In addition, the results do not capture the effect of the personal tax relief as the model does not contain this type of tax. This implies that the impact of the total package of tax and fee cuts on economic growth could be higher than the above number.

Annex 2. Tackling Contagion Risk of China's Small Banks[22]

1. **China's financial system has undergone significant deepening.** Previously dominated by a few large state-owned banks, China's financial landscape has evolved into a rich ecosystem, in which homegrown local banks and insurance companies have become among the world's biggest, NBFIs provide extensive and varied services, domestic capital markets are rapidly developing, foreign participation is increasing, and fintech companies have emerged which are among the largest and most advanced in the world. Perhaps naturally, the rising number and variety of institutions and the advancements in financial intermediation have made China's financial system increasingly interconnected over the past decade (Figure A2.1; see Appendix 2.1 for data source and methodology).

Figure A2.1 China's Financial Network



Note: Each node represents a publicly listed FI in China. The size of the node indicates the FI's total liability, while the color indicates its type of business. The thickness of the arrow linking two nodes represents the extent to which the default risk of the "risk sender" affects that of the "risk receiver".
Source: Credit Research Initiative of National University of Singapore; AMRO staff estimates

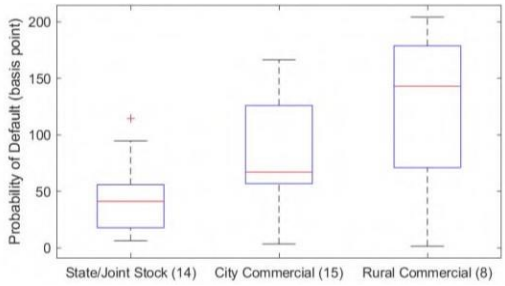
2. **Small banks—city and rural commercial banks in this context—play an important role in transforming China's financial system.** Established to advance financial inclusion and deepening, small banks lend to SMEs, which are risky in nature and typically not the preferred clients of large banks. With only limited access to central bank liquidity and stable deposits, these small banks supplement their funding by borrowing from big players, and through transacting securities and wealth management products with one another and NBFIs. Their business activities have channeled resources effectively to productive sectors that face funding challenges. They have also facilitated the price discovery function and the liberalization of interest rates, the building blocks of modern financial markets.

3. **However, the business model of small banks suggests that they are susceptible to default risk, compared to large banks.** Lower asset quality, higher funding costs and

[22] Prepared by Wei Sun (Financial Sector Specialist).

weaker capital bases suggest higher default risk.. Among the 37 exchange-listed Chinese banks in our sample, the Probabilities of Defaults (PDs)–a financial distress measure that captures the likelihood that one cannot fulfill its debt obligations–of the city and rural commercial banks are significantly higher than those of bigger banks with a more dispersed distribution (Figure A2.2). PD values correspond to the level of financial strength/weakness as measured by S&P ratings (Table A2.1). The lower creditworthiness of the small banks implies that they are more likely to be a source of shock to China's financial system.

Figure A2.2 Distribution of PDs across Bank Types



Source: Credit Research Initiative of National University of Singapore; AMRO staff calculations

Table A2.1 Correspondence between PD and Selected S&P Rating Grades

S&P Rating Grade	Range of PD (bps)
AAA	[0.0, 0.9]
A	[5.6, 6.9]
BBB	[19.2, 32.4]
BB	[71.6, 103.0]
B	[258.0, 403.5]
CCC	[779.0, 1349.0]
C	[2458.5, 10000.0]

Source: Credit Research Initiative of National University of Singapore

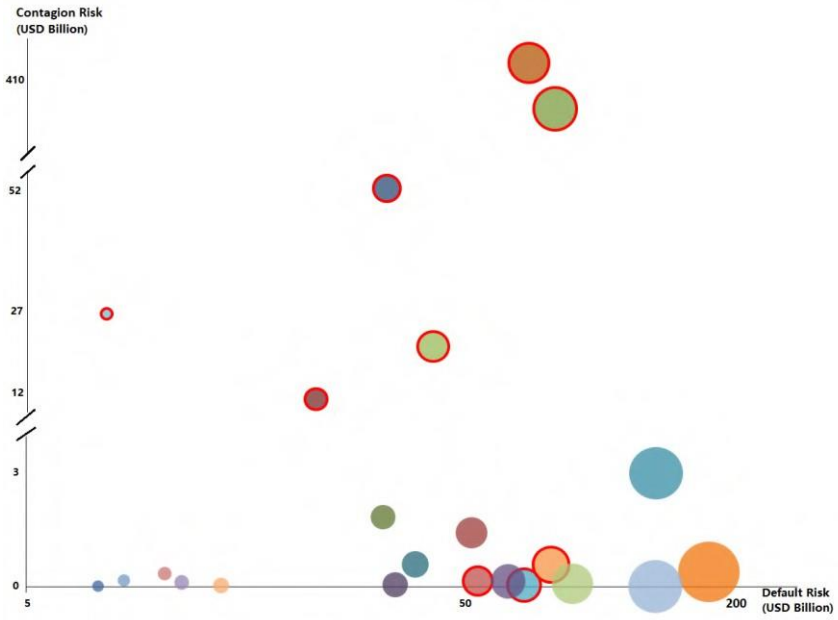
4. **The interconnection between small banks and other FIs could also transmit individual risks to the wider financial system via contagion.** A big bank could find itself in financial difficulties if its small bank debtor defaults on its interbank loan. Some smaller banks and NBFIs, which used to rely on funding from this small lender, may now struggle to sustain their businesses if unable to roll over their debts. Enterprises that hold a banker's acceptance in their accounts receivable would be affected and, in turn, pose a greater credit risk to their lenders. Financial markets could suddenly become risk averse toward the small FIs as a whole, halting their interbank activities and precipitating a funding liquidity crunch.

5. **We used the co-movement of FIs' default probabilities, underpinned by balance sheet linkages and synchronous shift of sentiments, to construct their interconnectedness.** Figure A2.1 shows that many city and rural commercial banks were at the center of the financial network in 2018 or surrounded by big state-owned banks, underscoring their strong interconnections with the rest of the financial system. Interestingly, securities firms appear to be both conduits and amplifiers for this type of risk transmission. They are not only first-hand recipients of shocks, but also propagators to other NBFIs and back into the banking system.

6. **The impact of contagion risk could be estimated through a stress test.** Given the complexity of the financial network and the state-contingent nature of contagion, it is extremely difficult to foresee which parties would be affected, and through which channels, particularly

when market conditions change rapidly. To address this challenge, we employed the market-sensitive PD measure for 2,000 financial institutions globally and used machine-learning techniques (Least Absolute Shrinkage and Selection Operator) to extract the direct and strongest link between each pair of them. We subsequently assumed the failure of a small bank, the "risk sender", in a hypothetical scenario and traced its "risk receivers" through direct and indirect connections. Assuming a 60 percent loss given default, we estimated that the collateral damage to the wider financial system via contagion could be significant, at multiples of the losses to the direct creditors due to borrower default (Figure A2.3; see Appendix 2.1 for data source and methodology).

Figure A2.3 Expected Credit Loss Due to Default vs. Contagion Risk of Small Banks



Note: Each node represents an exchange-listed city or rural commercial bank. Nodes with a red circle represent banks that are related to a financial holding company. The x-axis represents expected credit loss due to default risk according to Equation A2.1.2, and the y-axis represents expected collateral damage due to contagion risk based on Equation A2.1.3.
Source: Credit Research Initiative of National University of Singapore; AMRO staff calculations

7. **The identification and evaluation of contagion risk should take into account various transmission channels.** Historical evidence from distressed periods shows that, other than direct lending-borrowing relationship, common counterparties and stakeholders, capital market transactions and even market sentiment can contribute to the propagation of risks. Our study, leveraging the wealth of information embedded in the PD indicator, presents a novel approach to inferring such relationships, which are typically difficult to uncover. More importantly, it provides a quantitative measure of the potential collateral damage, which could be useful for policy decisions.

8. **Financial regulators should continue to deploy both micro- and macroprudential measures to mitigate contagion risk.** To prevent a small bank from triggering a systemic event, banking supervisors should continue to urge weaker banks to strengthen their capital buffers and assess the counterparty risk. These shall be integrated with their entire risk

management system to also help restrict risk-taking behavior that has not been commensurate with their risk management capabilities. Macroprudential measures could be introduced to incentivize banking institutions to internalize or reduce the risks that they pose to the system. Special attention should be given to bank subsidiaries, whose holding companies do not necessarily specialize in financial services but use them for related lending, guaranteeing, and channeling funds through complex transactions. Such businesses could involve a large number of counterparties and potentially act as conduits for spreading risk. Our findings show that the small banks that are influenced by financial holding companies (represented by nodes with a red circle in Figure A2.3) would likely cause greater collateral damage were they to fail.

9. **The timing and circumstances under which contagion risk is mitigated merit careful calibration.** To minimize costs while strengthening financial resilience, the actions to be taken should be pre-emptive, given that contagion risk tends to be pro-cyclical and could intensify quickly when conditions become adverse. Troubled entities should be restructured or resolved in a cautious manner to mitigate the impact on market sentiments, because dramatic shifts in market sentiments could have second-round effects and increase costs of resolution.

10. **It is important to monitor the structural changes in China's financial system and assess their implications for risk contagion.** The flow of funds between banks and NBFIs has become more structural, which increases spillover risks across the financial system. As China opens up its financial markets further, the increasingly active foreign participation could also reconfigure its financial networks and amplify the intensity of risk transmissions. Authorities regulating different parts of the financial sector should make a comprehensive assessment of the evolving interconnectedness of the financial system. A more holistic view would enable them to make better-informed policy decisions, prepare targeted contingency measures in case of an emergency, and act in a concerted and coherent manner to address any short-term volatilities on the way to achieving long-term financial stability.

Appendix 2.1. Technical Note on Measuring Expected Loss from Default and Contagion Risks

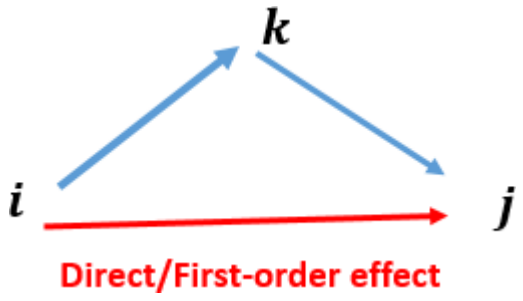
1. **Default risk is the likelihood that an entity is unable to pay off its debt obligations over a future horizon.** To capture this financial distress, we use the Probability of Default (PD) based on models by Chan-Lau et al. (2018) and Duan et al. (2012). Among the many risk factors in the model, including both firm fundamentals and market-based indicators, the price movement in the stock market embeds a wealth of information and proves useful in reflecting a shift in market sentiment. The Credit Research Initiative of the National University of Singapore compiles the dataset. It covers PDs for over 2,000 exchange-listed financial institutions around the world, including banks, insurance companies and brokerage firms.

2. **Contagion risk is defined by the change in one FI's PD in response to a one-unit change in the PD of another.** As in Equation A2.1.1, we regressed the PD of "risk receiver" $\boldsymbol{j}$ on the PD of "risk sender" $\boldsymbol{i}$, while controlling for all other global FIs to tease out any possible channel of risk transmission.

$$PD_j = \alpha + \beta_{j,1}PD_1 + \beta_{j,2}PD_2 + \cdots + \beta_{j,i}PD_i + \cdots \beta_{j,n}PD_n + e_j \quad \text{(A2.1.1)},$$

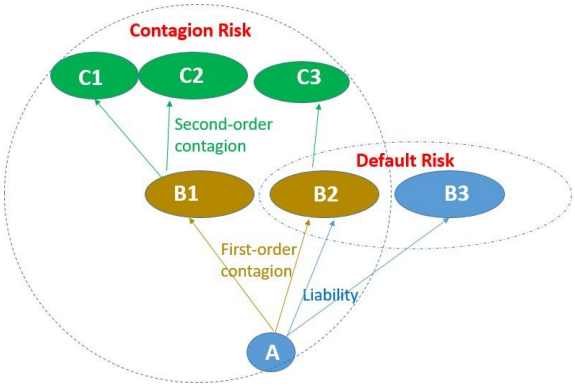
where $n = 1,2, \ldots 2000$. PD_i is the log-odds transformation of the original PD values bounded by (0,1), and the treatment is to make the variables in the $(-\infty, +\infty)$ range and suitable for regression analysis. The identification strategy disentangles a pure and direct interconnectedness between the $i - j$ pair not through any third party k (Figure A2.1.1). It also enables us to look beyond the direct linkages from i and incorporate the intricate higher-order contagion without double and triple accounting for the indirect linkages. The regression is made possible through a Least Absolute Shrinkage and Selection Operator (LASSO) approach, which suppresses insignificant coefficients on high-dimensional explanatory variables to zero.

Figure A2.1.1 Direct and First-Order Interconnectedness



Source: AMRO staff

Figure A2.1.2 Default vs. Contagion Risk



Source: AMRO staff

3. **The risk transmission network, as shown in Figure A2.1 in Annex 2, is characterized by the nodes and edges.** Each node represents a unique FI. The size of the node represents its total liability, and the color its type of business. Two nodes are connected by an arrow if the PD of "risk sender" i has a non-trivial impact on that of "risk receiver" j. The strength of the edge $\beta_{j,i}$, or our measure of interconnectedness, is influenced by factors ranging from inter-banking lending, capital market transactions, to common corporate borrowers or stakeholders.

4. **The expected credit loss for each small bank is computed based on its total liabilities along with its default and contagion risks.** Figure A2.1.2 illustrates how other parties are affected if Bank A were to default. As direct creditors to A, B2 and B3 will immediately incur a loss to their assets equivalent to a proportion of A's liabilities. We applied the assumptions that A's default is characterized by a 9000bps[23] increase in its PD, it defaults on all its liabilities, and its creditors can recover only 40 percent of the defaulted obligations[24]. Equation A2.1.2 calculates the loss arising from default risk:

$$\Delta EL_{Bank^F screditors} = \Delta PD_{Bank} \times LGD_{Bank^F screditors} \times EAD_{Bank^F screditors} \quad \text{(A2.1.2)},$$

where LGD=60%, ΔPD=90%, and EAD=bank's total liabilities. Suffering a credit loss due to A's default, creditor B2 may find itself in a financial distress. Its PD could rise as a result and this change is one form of risk contagion. An unrelated party, B1, could be a victim too, even if it does not have a lending relationship with A. The two could be connected through the worsening sentiment, which makes market participants scrutinize all small FIs, squeeze their funding options, increase funding costs, and eventually force them to sell off their assets or close their businesses. The contagion could propagate from B1 and B2 to the Cs if it is not contained. We define the loss arising from such first and second-order contagion risk as collateral damage and computed the amount based on Equation A2.1.3:

$$ExpectedCollateralDamagetoSystem = \sum_{i=1}^{2} \Delta EL_{Creditors\ to\ FIs\ at\ ith\ order\ contagion} \quad \text{(A2.1.3)}$$

References

(i) Chan-Lau, Jorge A., Chienmin Chuang, Jin-Chuan Duan, Wei Sun. 2018. "Financial Network and Systemic Risk via Forward-Looking Partial Default Correlations", IMF and Risk Management Institute of National University of Singapore Working Paper.

(ii) Duan, Jin-Chuan, Jie Sun, and Tao Wang. 2012. "Multiperiod Corporate Default Prediction - A Forward Intensity Approach". *Journal of Econometrics* 170, 191-209.

[23] The assumption of a 9000bps increase in PD is based on observations around Lehman's collapse.
[24] The assumption of 60 percent Loss Given Default (LGD) is the standard in pricing of credit default swap. Exposure at Default (EAD) is assumed to equal debtor's total liabilities.

Annex 3. An Analysis of Local Government Debt and Debt Repayment Capacity[25]

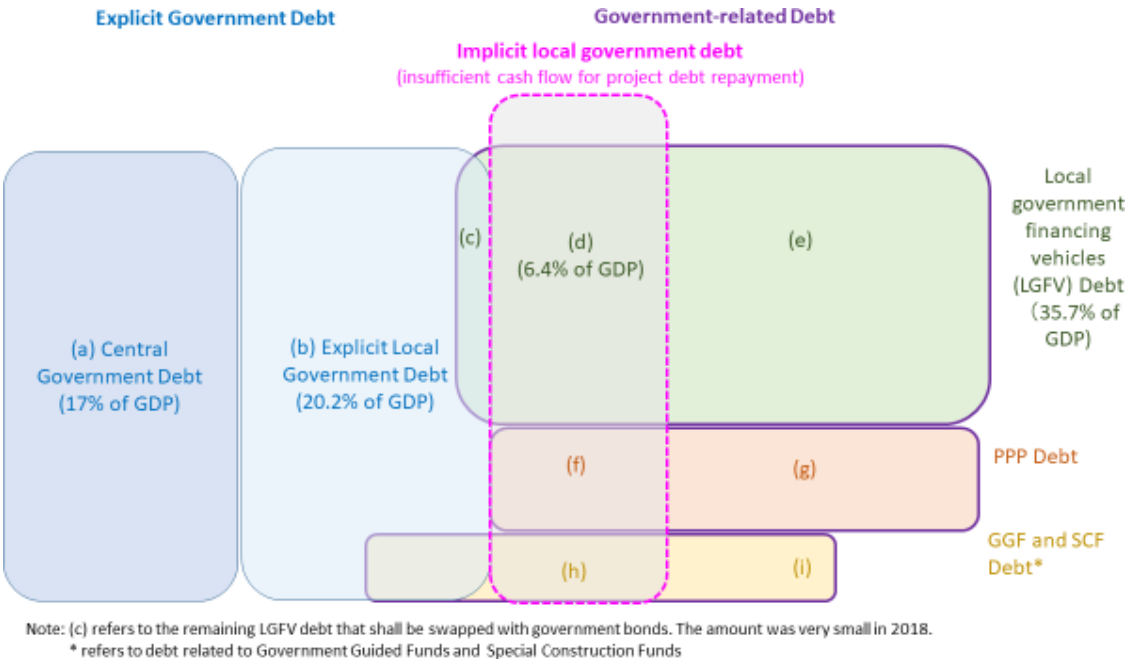
Motivation

1. **There has been a rapid growth of implicit debt.** The risks cannot be overlooked. According to PBC's China Financial Stability Report 2018, the new "Budget Law", implemented in 2015, requires all local government debts to be included in budget management. The only legitimate way of borrowing is to issue local government bonds. In this context, some local governments have a strong incentive to raise illicit debt. This, together with the incentive of FIs to lend through shadow banking activities, has resulted in a rapid growth of implicit debt. The corresponding risks cannot be overlooked.

2. **An analysis at the national level does not suffice to gauge local government debt sustainability, as the size of local government debt and repayment capacity differ vastly across different regions in China.** Furthermore, it is very challenging to estimate the implicit debt of local governments. This study attempts to estimate the implicit local government debt at the provincial level based on publicly available data and examine recent developments in terms of debt growth and debt repayment capacity. We will also identify related risks in more vulnerable regions and discuss policy implications.

Classification and Data of Implicit Local Government Debt

Figure A2.1. Explicit (Official) Local Government Debt vs Implicit Local Government Debt



Source: Ministry of Finance (MOF); NBS, WIND; AMRO staff estimates

3. **It is complicated to identify and measure implicit local government debt and therefore certain assumptions are required in making the estimations.** In Figure A2.1, areas (a), (b) and (c) represent the explicit debt of the central and local governments. Such debts are well defined, and the amounts are published frequently by the Ministry of Finance.

[25] Prepared by Simon Liu Xinyi (Economist)

However, implicit local government debt, represented by areas (d), (f) and (h), based on AMRO's definition, is more opaque and complicated (see Appendix 3.1 for the data and estimation method). In view of data limitations, we first defined government-related debt as the sum of LGFVC debt, debt related to PPP projects, Government Guided Funds (GGF) and Special Construction Funds (SCF). They are debt incurred in carrying out public services activities, predominantly in infrastructure, and we consider them government-related. Then we estimate the size of LGFVC debt (the sum of (c), (d) and (e) in Figure A2.1), which is considerably larger than the other components of the government-related debt. We estimate implicit government debt based on the size of LGFVC debt at the provincial level and an assumption that a portion of infrastructure projects could become implicit government debt due to insufficient cash flow, and also estimate local governments' debt repayment capacity by comparing the combined size of explicit and implicit local government debt with provincial GDP and revenue.

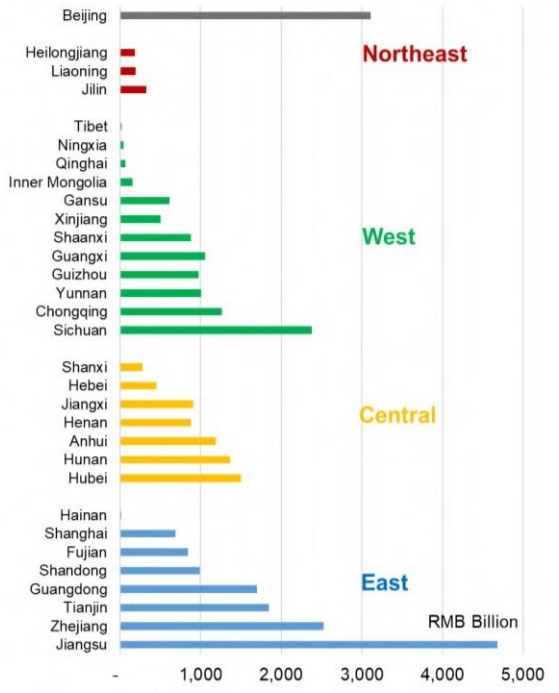
4. **LGFVC debt is government-related. If the infrastructure projects for which the debts are incurred face poor cash-flow prospects, then LGFVC debt will become implicit local government debt.**[26] It is clearly documented that debt incurred via LGFVCs after 2014 is not included in local government debt. However, LGFVCs have remained an important financing source for infrastructure projects. Anecdotal evidence in many regions indicates the existence of projects with poor prospects of creating sufficient cash flow to repay debts, even in the long run. In case of default, the projects may not be completed, and financial institutions may end up with non-performing loans. When a project reaches this stage, local governments may have to mediate, or help to pay the debt, possibly by using fiscal resources or in kind.

Regional Distribution and Dynamics of LGFVC Debt

5. **LGFVC debt growth has been moderating due to the New Budget Law and deleveraging efforts.** Figures A2.2 and A2.4 show regional and aggregate LGFVC debt. As at the end of 2018, LGFVC debt across the Mainland totaled about RMB32.7 trillion, a modest increase of 6 percent, or 1.9 trillion, from the end of 2017 (Figure A2.4). Figure A2.5 shows the percentage contribution to LGFVC debt growth by region. LGFVC debt growth moderated in 2015 due to the introduction of the New Budget Law, and further in 2018 owing to deleveraging efforts.

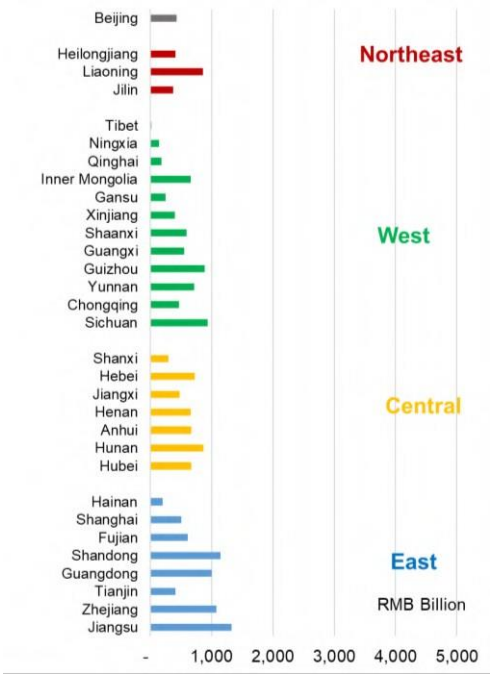
[26] The IMF uses a concept called "augmented" debt. This is estimated by IMF staff and expands the Ministry of Finance's official definition of general government debt by including new borrowing incurred since 2015 by LGFV and other entities.

Figure A2.2. LGFVC Debt Distribution, Dec 2018



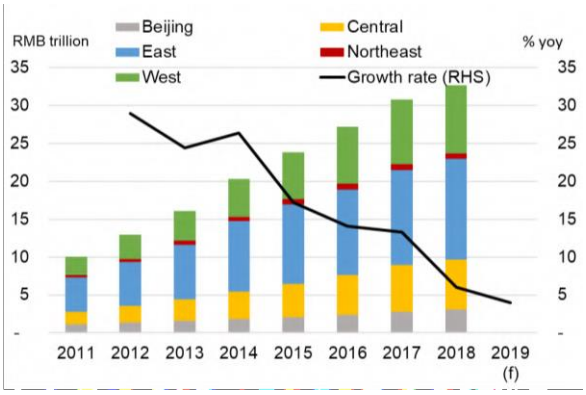
Source: WIND; AMRO staff estimates

Figure A2.3. Explicit Govt. Debt Distribution, Dec 2018



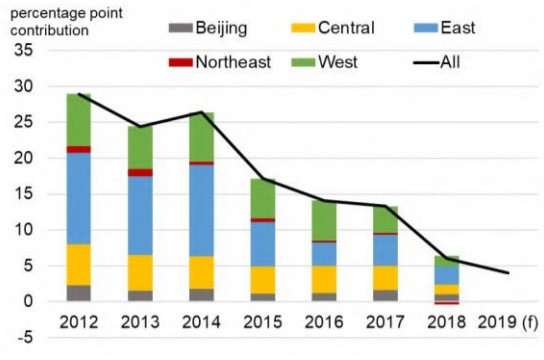
Source: WIND; MOF

Figure A2.4. LGFVC Debt Distribution



Source: WIND; AMRO staff estimates

Figure A2.5. LGFVC Debt Growth



Source: WIND; AMRO staff estimates

5. **The impact of the New Budget Law has been significant, especially in Eastern China.** The legislation requires all local government debts to be included in budget management. The only legal way for local governments to borrow is to issue local government bonds. Before the law took effect in 2015, Eastern China accounted for most of the LGFVC growth, but after its introduction, the growth of LGFVC debt in the east slowed sharply (Figure A2.5), as the infrastructure in the region had by then become relatively developed and the provinces had adopted other means of raising infrastructure funds, such as via borrowing by non-LGFVC corporates or issuing local government bonds. The new law has also led to a moderation in LGFVC debt growth in Western and Central China, though the moderation has

not been as significant (Figure A2.5). As these regions, especially the mountainous west, are still catching up with Eastern China in infrastructure development, funding needs continue to be high.

6. **The impact of deleveraging efforts has been significant for all regions.** In 2018, LGFVC debt growth slowed sharply across all regions (Figure A2.5) due to deleveraging efforts, particularly more restrictive regulation of shadow banking loans. Semi-annual data show that total LGFVC debt stopped growing between June and December 2018. We project that the growth of LGFVC debt will continue to moderate in 2019, due to continued strong regulation and a further decline in shadow banking activities.

7. **Is the overlap between LGFVC debt and official local government debt (area (c) in Figure A2.1) significant, to the extent that it could lead to serious double-counting? It was not the case in 2018.** In 2015, the central government announced a debt-for-bond swap program, which targeted swapping local government debt of RMB12.3 trillion for an equivalent amount of municipal bonds by end-2018. Through this program, local governments were able to not only roll over part of their debt but also lower interest rate costs. In 2015 and 2016, there was a significant overlap between LGFVC debt and official local government debt, and therefore adding up the two led to double-counting. By December 2018, however, the program was close to meeting its target and a negligible overlap is expected between the RMB32.7 trillion outstanding LGFVC debt and the RMB18.4 trillion explicit local government debt.

What is the size of the implicit local government debt?

8. **Some LGFVC debt will eventually become implicit local government debt.** After years of efforts to swap some LGFVC debt to explicit local government debt, and strict regulation on LGFVC borrowing, most LGFVCs now have sufficient cash flow. So, most LGFVC debt will not become implicit local government debt. If we assume that a proportion (α) of LGFVC debt would fall under the responsibility of the government, then:

Implicit local government debt = LGFVC debt * α

9. **We can infer from the 2013 National Audit Office's (NAO) "Government Debt Audit" results, and assume that α was around 18 percent for all provinces**[27]. According to the 2013 (NAO) results:

"Historically, since 2007, for the debt that government has guaranteed, the actual payment using the fiscal resource had been 19.13%; and for debt that government may be responsible for bailouts, and the actual payment using the fiscal resource had been 14.64%."

[27] Provinces with higher fiscal deficits and weaker economies will have a greater fiscal challenge, and their LGFV debt may come under higher scrutiny by lenders. It is therefore likely that the probability of risk events and the need for a bailout will be higher, and α for such provinces should also be higher in order to yield more accurate results in future studies. The reverse is true for provinces with lower fiscal deficits and strong economies.

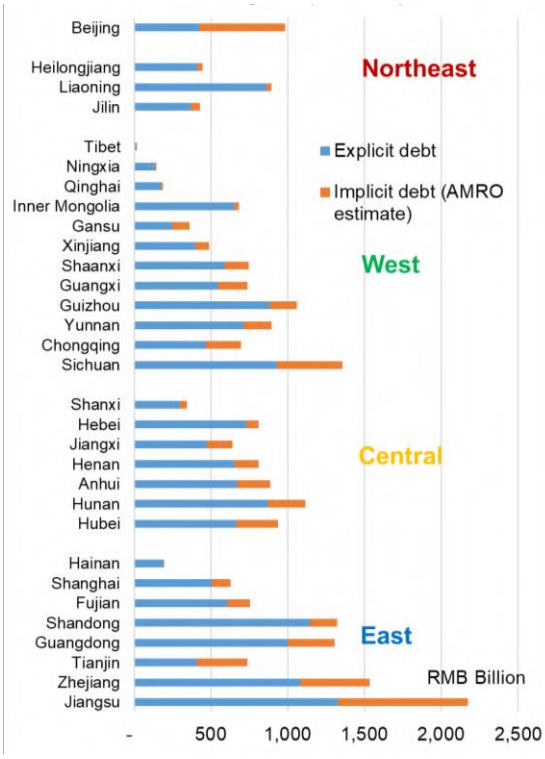
We can infer from the NAO's important survey that the upper limit of α may be somewhere between these two numbers. Due to a lack of data, and to conduct a conservative estimate, we take a number slightly above the average of the two numbers and assumed that α was around 18 percent for all provinces[28]. Figure A2.8 displays both the explicit debt and the estimated implicit debt.

Debt Repayment Capacity and Risk

Debt-to-GDP Ratio

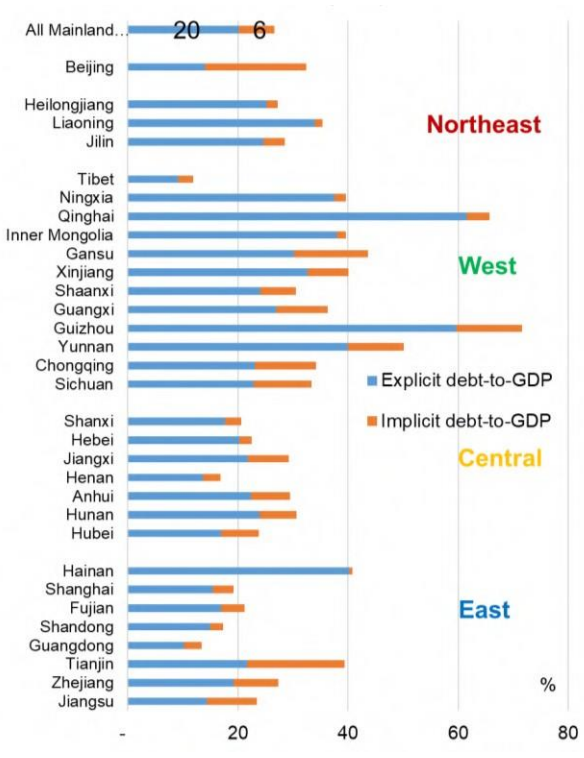
10. **The debt-to-GDP ratio is low in Eastern and Central China but high in Western China.** Nationwide, explicit local government debt-to-GDP was a low 20.2 percent in 2018 (Figure A2.7). After discounting the LGFVC debt with α at 18 percent, the implicit local government debt-to-GDP ratio was around 6.4 percent, which also seemed manageable. However, the debt-to-GDP ratio was much higher in the west, particularly Guizhou Province and Qinghai Province, than in other regions.

Figure A2.6. Local Government Debt, Dec 2018



Note: Implicit debts are based on AMRO estimates
Source: WIND; MOF; NBS; AMRO staff estimates

Figure A2.7. Local Government Debt-to-GDP, Dec 2018



Note: Implicit debts are based on AMRO estimates
Source: WIND; MOF; NBS; AMRO staff estimates

[28]Provinces with higher fiscal deficits and weaker economies will have a greater fiscal challenge, and their LGFV debt may come under higher scrutiny by lenders. It is therefore likely that the probability of risk events and the need for a bailout will be higher, and α for such provinces should also be higher in order to yield more accurate results in future studies. The reverse is true for provinces with lower fiscal deficits and strong economies.

Debt-to-revenue Ratio

10. **The debt-to-GDP ratio may not be the best measure** to gauge the debt repayment capacity of local governments, as GDP is reflective of the income of not just the government but also the private sector. So we also evaluate debt repayment capacity using the debt-to-government revenue ratio:

11. **We collate revenue data from the general government, government funds and the central government's transfer payments to measure local government revenue.** There are four accounts under fiscal revenue and expenditure: general government, government fund budget, state-owned capital operation, and social insurance fund. The amount of money that can be used to pay debts depends on the expenditure items of these four accounts. According to its mandate, the social insurance fund's budget expenditure shall be used for social security expenses only and was therefore not included in our estimate of debt repayment capacity. Likewise, we also exclude state-owned capital operating revenue.

Two Debt-to-revenue Metrics

12. **We use two metrics to measure debt-to-revenue ratios.** The first takes into consideration only locally generated revenue, whereas the second also considers fund transfers and tax rebates from the central government, as follows:

> Debt-to-income ratio_1 := (local government debt) / local government's local revenue
>
> Debt-to-income ratio_2 := (local government debt) / local government's consolidated revenue

where,

> Local government debt = explicit local government debt + implicit local government debt (LGFVC debt * α)
>
> Local government's local revenue = general fiscal revenue + fund revenue[29]
>
> Local government's consolidated revenue = general fiscal revenue + fund revenue + tax rebates and transfer payments from central government (general budget)

13. **From a national perspective, the combined explicit and implicit local government debt-to-consolidated revenue ratio seems manageable.** The explicit debt-to-consolidated revenue ratio was 77 percent (Figure A2.9). We find that, upon considering the implicit government debt and using α at 18 percent to discount the LGFVC debt, the local government debt-to-local government revenue ratio was high, at 144 percent. However, the total debt-to-consolidated revenue ratio, which takes into account fund transfers from the central government, was 102 percent (Figure A2.9), below the threshold of 150 percent that were used by the IMF for Debt Sustainability Analysis for EMEs.

[29] We faced a limitation in collecting data on government fund revenue, which was supposed to cover all cities and counties of the entire province. For a few of the provinces, the fund revenue data of some individual cities and counties was unavailable, in which case we collected only the provincial-level data and excluded fund revenue data from the lower-level governments.

Figure A2.8. Local Government Debt-to-local Revenue (2018)

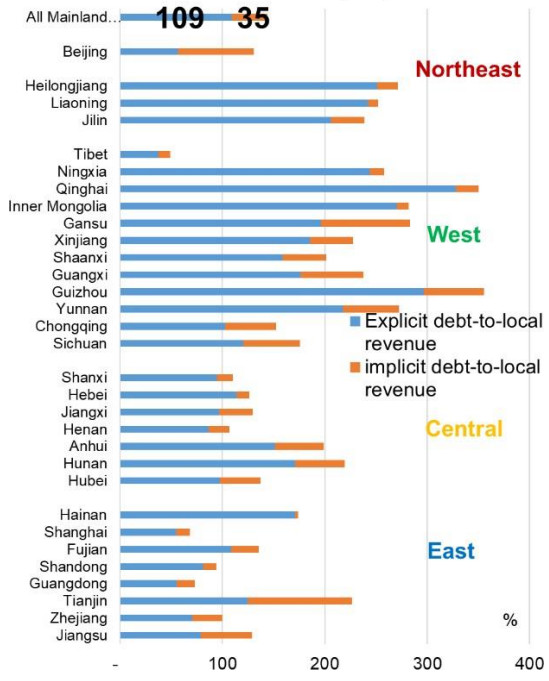


Figure A2.9. Local Government Debt-to-consolidated Revenue (2018)

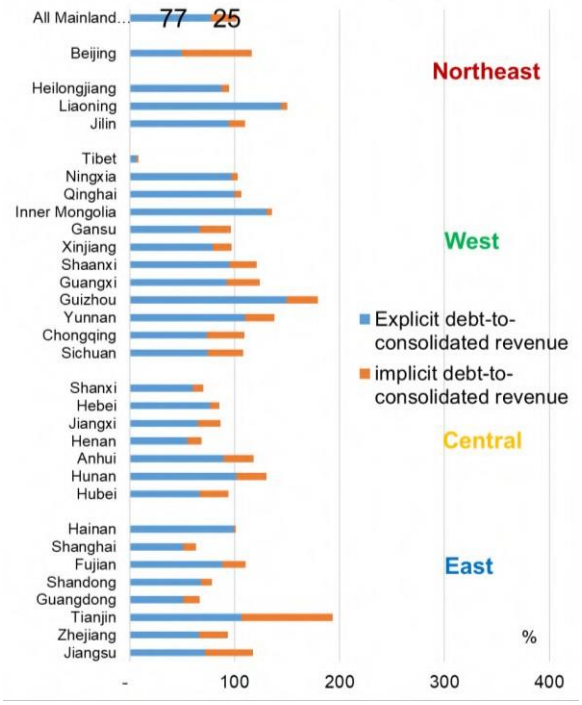
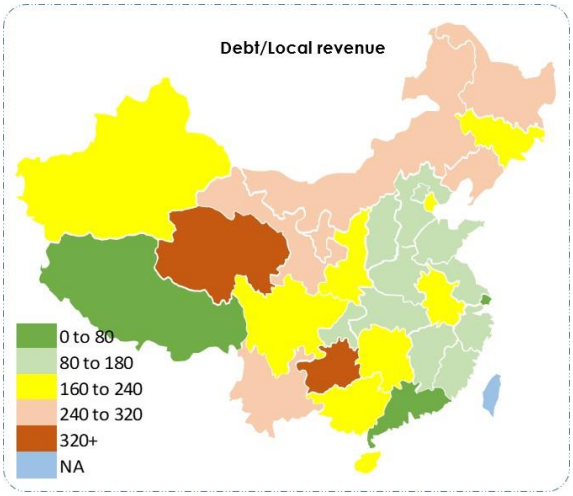
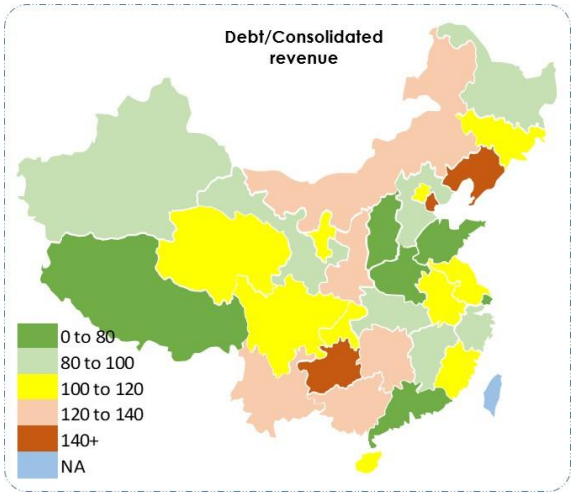


Figure A2.10. Local Government's Debt-to-local Revenue (2018) in Map



Source: WIND; MOF; AMRO staff estimates

Figure A2.11. Local Government's Debt-to-consolidated Revenue (2018) in Map



Source: WIND; MOF; AMRO staff estimates

13. **However, the regional disparity in debt repayment capacity is large.** Figures A2.8 and A2.10 illustrate what could have happened had the local governments not received fund transfers from the central government. In terms of explicit debt, the debt-to-local revenue level in Eastern and Central China was much lower than in Western and Northeastern China; for example, this ratio was below 70 percent in Guangdong and Shanghai, but exceeded 300 percent in Qinghai and Guizhou. The gap was even more pronounced in terms of the total debt-

to-local revenue ratio, as Guangdong and Shanghai had not borrowed much via LGFVCs, whereas Guizhou had borrowed considerably from LGFVCs. We examined the 2014 to 2018 ratio data and found that the gap between the rich east and the highly indebted west and northeast had widened.

14. **Taking into account transfer payments from the central government, the gap has narrowed substantially, but a few provinces remain vulnerable.** Figures A2.9 and A2.11 illustrate what happened after adding fund transfers and tax rebates that the local government obtained from the central government to their revenues. The total debt-to-consolidated revenue ratio reveals that Guizhou and Tianjin are the two most vulnerable areas. Guizhou is a poor, mountainous and thinly populated Southwestern province that has been undertaking challenging infrastructure projects to rapidly develop its economy. These infrastructure projects have yet to generate sizable cash flow and the land has yet to appreciate in value. Tianjin, on the other hand, is a relatively rich coastal and densely populated municipality directly administered by the central government, yet its past investments have not been profitable and economic growth has stalled. Indeed, it has projected a small decline in 2019 general government revenue which, if realized, would exacerbate its debt repayment capacity. In addition, unlike Western China, Tianjin's share of fund transfers from the central government is low.

15. **The prospects of relying on revenue to repay debt look very limited in poorer provinces.** How much of the revenue can be used? While the total debt-to-consolidated revenue ratio is a better gauge of debt sustainability than debt-to-GDP, we also need to consider the amount of revenue that can be used to pay debt.

1. **General government revenue and central government transfers:** A large part of general public budget revenue is earmarked for certain expenditures which cannot be reduced easily, such as administrative service expenditure that maintains the normal operation of local governments. After deducting such expenditures, the discretionary portion of the general public revenue which is available for debt repayment can be obtained. Limited data makes it difficult to estimate expenditure that could not be cut down. However, based on findings from our annual consultation and earlier interim visits this year, we can say that the discretionary revenue available in the poor provinces is quite limited.

2. **Fund revenue:** Government budgets in China follow the principle of budgeting for expenditure according to revenue, and the revenue needs to be earmarked for the corresponding expenditure. Most of the fund revenue is from land sales, and the bulk is used to pay for relocation-related costs, especially land acquisition, property demolition and compensation for farmers, and land development. Therefore, a rather smaller proportion could be used for other types of spending including debt repayment. Land transfer income that can be arranged by local governments in reality to repay debt can be limited.

Risks

16. Our analysis indicates that the size and risk of local government debt and government-related debt as a whole are likely manageable, but the repayment risk is high in some provinces.

17. **Risks may be higher at the county level than at the provincial level.** Considering that a number of LGFVCs are related to county-level governments, whose financial resources are much weaker than the provincial governments', the fiscal risk in these counties are high. (See Appendix 3.1 for a further discussion.)

18. **Rolling over the debt will continue to a key risk for implicit local government debt.** Long-term infrastructure projects do not generate cash flow in the near term, hence the debt needs to be rolled over continuously and is subject to changing interest rates. If the monetary policy were to be tightened, LGFVCs may face challenges in rolling over the debt, in particular if they rely on financing from shadow banking. (See Appendix 3.1 for LGFVC interest rates across provinces and a comparison with the interest rates of special local government bonds).

19. **Fiscal risks may spread regionally and interact with financial-sector risk.** In some cities, LGFVCs provide guarantees for one another to enhance credit and lower funding costs. This may cause the credit and liquidity risk of a single LGFVC to spread to other LGFVCs. Moreover, in provinces with higher fiscal risk, the NPL ratio of the banking system also tends to be high. In addition, local city and rural commercial banks tend to have substantial exposure to LGFVCs, such as by extending credit to them through shadow banking instruments. Hence, in these areas, the fiscal and financial risks may interact with one another and escalate the problems.

20. **Debt-to-revenue ratio has worsened in H1 2019.** In H1 2019, general government expenditure grew faster than revenue for most provinces. The expenditure grew the most rapidly in the southwest, suggesting a greater share of government revenue needs to be employed to support the expenditure instead of debt repayment. At the same time, general government revenue declined in the northeast, and it grew modestly in the southwest despite the rapid GDP growth. Although there are other sources of government revenues, it is likely that debt-to-revenue ratios have worsened.

Policy Recommendations

21. First, it is crucial to comprehensively monitor the government-related debts of all layers of local governments and establish a better debt measurement and management system.

22. **Second, the authorities must continue to strengthen auditing and accountability to further curb implicit debt** by applying stringent budget constraints, and by further reducing the focus on quantitative GDP target achievements. .

23. **Third, the authorities should monitor closely the rollover risk of LGFVCs and be prepared to deal with the problem.** With the auditing and monitoring of the LGFVC debt, the authorities should be informed of the debt maturity profile and the rollover risk. In case some LGFVCs are unable to repay the maturating debt, the authorities would need to be well informed and have contingency plan to mitigate the side-effect on other LGFVC financing, the regional financial institutions and the related infrastructure project.

24. **Fourth, the removal of implicit guarantees needs to proceed in a measured manner to minimize the impact on the banks and the local economy.** In the process of regulating and cleaning up local implicit debt, the risk exposure of financial institutions may increase. As implicit guarantees are removed, local banks with a sizable exposure to LGFVCs may see a jump in their NPL ratios. This may have an adverse effect on the local economy, as these local banks are often the key lenders to local SMEs. Therefore, the risk needs to be monitored and mitigated along the way with close coordination among different government bodies.

25. **Fifth, the regulators should continue to strengthen financial sector supervision to curb illicit debt**. Some lenders have knowingly facilitated the illicit fund-raising activities of local governments, sometimes through complicated shadow banking products to bypass regulation. The authorities have significantly strengthened regulations on this front and need to continue with the efforts, particularly in further enhancing the capacity of local CBIRC branches.

26. **Sixth, the authorities need to curb investment in unproductive infrastructure**. High implicit debt is usually the result of ambitious infrastructure spending that does not generate sufficient cash flow. Authorities should employ a careful cost-benefit analysis method to rein in such infrastructure projects.

Reference

(i) The People's Bank of China, November, 2018, “The 2018 Financial Stability Report on China”

(ii) The National Audit Office, 2013, “Audit of Local Government Debt in China”

Appendix 3.1 Data and Estimation Method, Classification of Regions and Their Economic Characteristics

1. **We used data disclosed by borrowers to conduct the estimations in our study.** In theory, three data sources can be used to estimate local government-related debt: infrastructure expenditure flow data[30], data disclosed by lenders[31] and data disclosed by borrowers. Due to insufficient data and difficulties in obtaining the available data from the first two sources, we relied on the last source. The logic is as follows: government-related debt is mainly incurred from borrowing through non-government entities. There are two main kinds of borrowers: LGFVCs and Public-private Partnership (PPP) entities. It is difficult to estimate debt incurred by PPP borrowers because of the need to study the loan contract and understand the nature and risks of each PPP project. Owing to a lack of information and reliability of key assumptions, estimates of PPP debt can also be highly subjective and uncertain. Moreover, the 34,000 PPP projects under construction involve an overall investment of slightly above RMB5 trillion, compared with RMB32.6 trillion for LGFVCs. Hence, PPP debt size is also much smaller than LGFVC debt. Likewise, we do not estimate the debt incurred by GGFs and SCFs due to their small sizes compared with LGFVCs. In view of the above considerations, we estimated the size of LGFVC debt and used it as a proxy for the size of government-related debt.

2. **We obtain the financial statements of 2,006 LGFVC companies from 2011 to 2018 through WIND.** According to CBIRC data, China had 11,734 LGFVCs as at end-2017, of which 2,006 were the largest LGFVCs in China that issued bonds, and hence their financial information was available. LGFVC bonds are classified on chinabond.com.cn, a website of China Central Depository & Clearing Co., Ltd. We consider the entities that issued these bonds as LGFVCs, excluding LGFVC subsidiaries whose parent LGFVC companies already had the required financial information available. We also excluded a number of LGFVCs because of their smaller sizes. Therefore, the LGFVC debt considered in our study was less than, but likely close to, the total LGFVC debt in China. “Debt” is defined as the sum of bank loans, outstanding bonds, loans from trust companies and borrowings through receivables, usually shadow banking products.

In this Country Report, the analysis use the five regions listed in Table A3.1.1 and illustrated in Figure A3.1.1.

[30] Since most government-related debt is raised for infrastructural construction, the annual infrastructural investment flow data of each province and other disclosed fiscal statistics can be used to estimate government-related debt. However, such estimates are prone to possible large errors: (i) the possible error of estimating the accumulation of government-related debt in any given year is already large, and therefore the accumulated error could be even larger; and (ii) the size of debt repayment necessitated by these infrastructural projects was not disclosed and also needed to be estimated, which was difficult.

[31] The logic is as follows: the main sources of government-related debt come from four types of lenders: banks issuing bank loans, investors buying bonds, non-standard products and shadow banking lenders, and financial leasing companies. However, it is more difficult to obtain financing data from these four types of lenders, especially with regards to bank loans and shadow banking activities, which require a number of subjective assumptions.

Table A3.1.1: China's Geographical Regions

Regions in Mainland China	Provinces/Cities
Beijing	Beijing
East	Shanghai, Tianjin, Shandong, Guangdong, Jiangsu, Zhejiang, Fujian, Hainan
Central	Anhui, Shanxi, Jiangxi, Hebei, Henan, Hubei, Hunan
Northeast	Jilin, Liaoning, Heilongjiang
West	Yunnan, Inner Mongolia, Sichuan, Ningxia, Guangxi, Xinjiang, Gansu, Tibet, Guizhou, Chongqing, Shaanxi, Qinghai

Figure A3.1.1. Classification of China's Regions

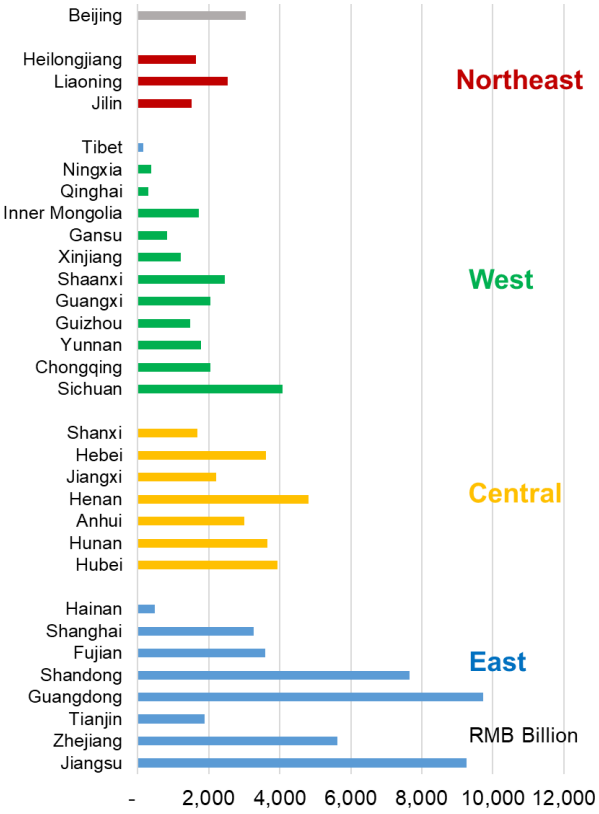
Source: AMRO staff

Figure A3.1.2. Intensity or Brightness of Light (2016)

Source: NASA

3. **Economic activities and fiscal resources are concentrated in the city clusters located in the coastal region and a few key cities of other provinces.** There are large disparities in terms of population density and economic development stage in China. As the provincial GDPs (Figure A3.1.3) and the brightness of light seen from outer space (Figure A3.1.2) indicate, economic activities are concentrated in the entire coastal region, where light is not only brighter but also distributed more evenly, as a number of coastal cities and counties have high levels of economic activity and hence more fiscal resources. On the other hand, Western and Northeastern China have only a few bright spots (Figure A3.1.2), highly concentrated in the capital cities of the provinces. Similarly, fiscal resources are concentrated in regions with more bright spots, notably the coastal provinces, and much less in the west, particularly in cities and counties far away from the provincial capital cities.

Figure A3.1.3. Provincial GDP, 2018



Source: WIND, NBS

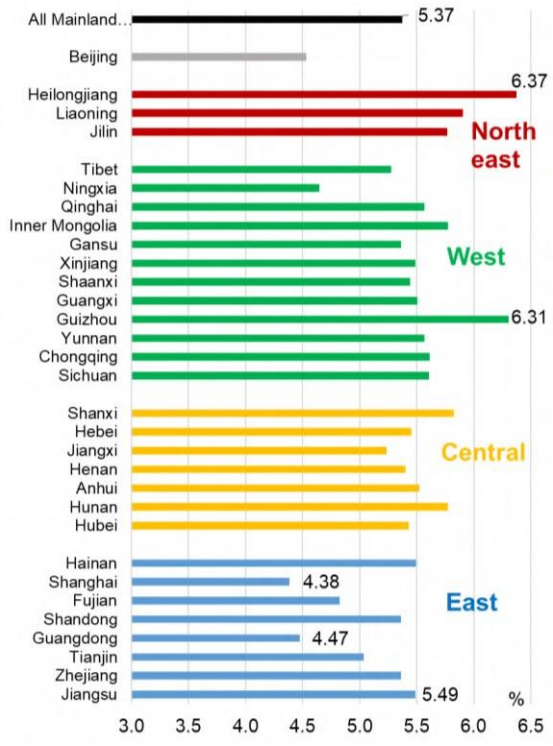
4. **City and county-level local governments are facing greater pressure from implicit debt.** According to the China Financial Stability Report 2018 (PBC), city and county governments face more significant risk due to hidden debt. In terms of debt distribution, implicit local government debts are mainly concentrated at the city and county levels, and some cities and counties have higher debt-to-income ratios. In the report, PBC studied the risk in Province X (name not disclosed) and found that, of the total implicit debts of the province, county-level debts and city (district)-level debts respectively accounted for more than 45 percent and more than 40 percent. The implicit debt risks in individual cities and counties were significantly higher than those at the provincial level.

Interest Rates

5. **The dispersion of LGFVC debt interest rates is wide, while the dispersion of Local Government Special Bonds is much narrower.** LGFVCs in Northeastern and Western China have higher financing costs. Figure A3.1.5 shows that, as of August 2019, average LGFVC bond coupon rates were above 6.3 percent in Heilongjiang Province and Guizhou Province, although Heilongjiang had a very limited amount of LGFVC debt. Eastern China has much better access to financing. The average coupon rates of LGFVC bonds were lower than 4.5 percent in Shanghai and Guangdong. Therefore, we can infer that LGFVC companies, when engaged in other means of borrowing, also show great divergence in

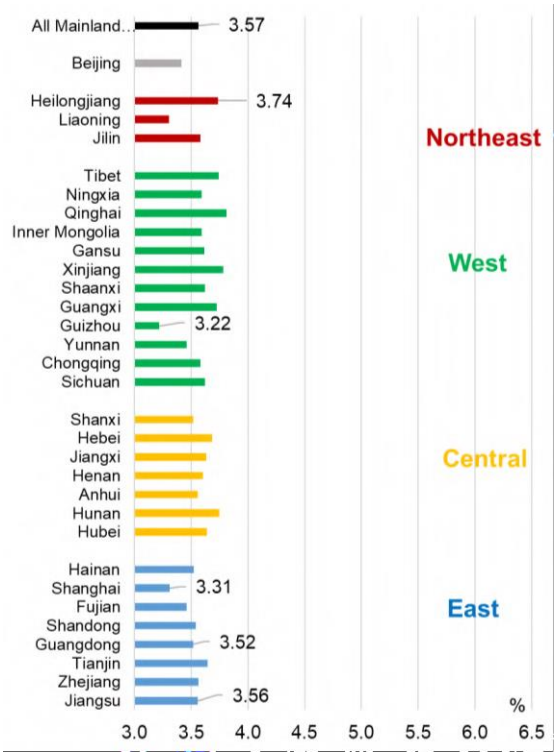
interest rates across different provinces. Although Jiangsu Province has the largest LGFVC debt, the coupon rates are similar to the national average of 5.37 percent.

Figure A3.1.4. LGFVC Bond Average Coupon Rate (Aug 2019, Amount Weighted)



Source: WIND; AMRO staff estimates, based on 9,365 observations (number of outstanding LGFVC bonds)

Figure A3.1.5. Local Govt. Special Bond Average Coupon Rate (Aug 2019, Amount Weighted)



Source: WIND; AMRO staff estimates, based on 5,166 observations (number of outstanding local government special bonds)

6. **The interest rates of local government special bonds are lower and less divergent than LGFVC interest rates.** While these are both important financing means for infrastructure, the interest rate of local government special bonds is much lower and the divergence across provinces is much smaller. Figure A3.1.5 shows the average coupon rate of more than 5,166 outstanding special bonds for all provinces. The national average coupon rate was 3.57 percent, much lower than that of LGFVC bonds at 5.37 percent. The regional divergence was also smaller. The special bond issued by Guizhou Province paid a coupon rate of only 3.22 percent per year. Hence, Western provinces could save a sizable amount of interest by issuing special bonds compared with LGFVC bonds.

Annex 4. Promoting Free Trade, Financing and Movement of Labor in China's Greater Bay Area: Benefiting from Different Strengths and Managing Challenges[32]

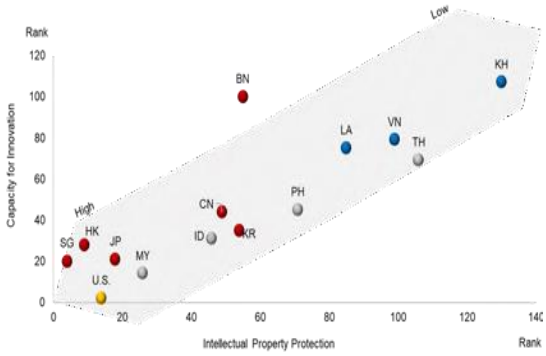
1. **The Guangdong-Hong Kong-Macao Greater Bay Area (GBA) is an ambitious project which requires strong contributions from all the 11 participating cities and clear directions from the central government in order to generate benefits for each one of these cities.** The project seeks to use the integration of hard and soft infrastructure to create a coherent economic entity which is stronger and more competitive than the sum of its parts. While some cities are more advanced than others, all have reached a certain level of development and have their own strengths, including natural resources in some cases. Therefore, all the cities have ample scope to contribute, share experiences, and grow together. However, there are stiff challenges which require collaboration among the cities and clear directions from the central government to overcome.

Figure A4.1. Current Population, Land, GDP, and GDP Per Capita: Selected Major Bay Area Economies

	Population / Land	GDP	GDP Per Capita
San Francisco Bay Area	7.6m / 17886 sq km	US$781.2 bn	US$102,230
New York Metropolitan Area	20.2m / 21479 sq km	US$1,657.5 bn	US$80,050
China's Greater Bay Area	69.6m / 55907 sq km	US$1,513.4 bn	US$21,750
Tokyo Bay Area	44m / 36898 sq km	US$1,774.2 bn	US$40,360

Source: Hong Kong Trade Development Council (HKTDC), South China Morning Post (SCMP)

Figure A4.2. Capacity for Innovation and IPR Protection



Source: World Economic Forum (WEF)

2. **The GBA compares favorably with other bay area developments around the world in terms of critical mass and stage of development.** Currently, the GBA has a combined population of 69.6 million people, GDP of US$1.51 trillion, and per capita GDP of US$21,750 (Figure A4.1). [See Annex A for a fuller picture of how the 11 GBA cities compare to one another in terms of the land mass, population, size of economy, competitive strengths and stage of development, and areas for growth according to the government's GBA plan.] Compared with other bay area projects which have developed over many years, China's GBA has plentiful land, a fairly large population, and ample scope for reaping the benefits of economies of scale, pooling of human capital, and growth opportunities for businesses, including those involved in building hard infrastructure. For soft infrastructure, China is on par with many ASEAN+3 countries and some advanced countries for key elements such as capacity for innovation and

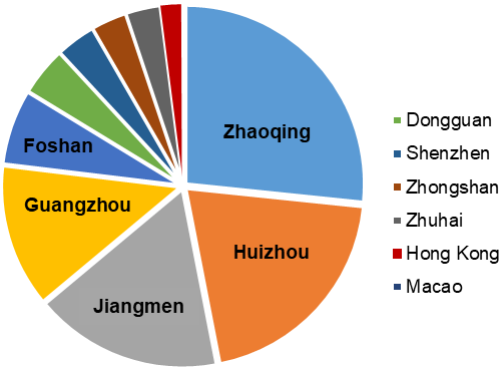
[32] Prepared by Foo Suan Yong (Senior Expert). AMRO's China team is grateful to have had the opportunity of visiting Guangdong, Shenzhen and Hong Kong – all of which are key cities in the GBA. The takeaways from many meetings with government agencies and private sector enterprises have deepened our understanding of the motivation underpinning the conceptualization of the GBA, and the priorities for policymakers and businesses.

intellectual property rights (IPR) protection (Figure A4.2). So there is a solid starting base for the GBA to pursue rapid growth catch up and development vis-à-vis the other bay areas.

3. **The GBA project seeks to pool the participating cities' resources and capitalize on their strongest competitive edges, develop at a progressive pace, and strengthen intercity connectivity.** How the authorities envisage the joint effort to pursue growth and development can be seen from the strengths and constraints of these cities, and the respective roles envisaged for them.

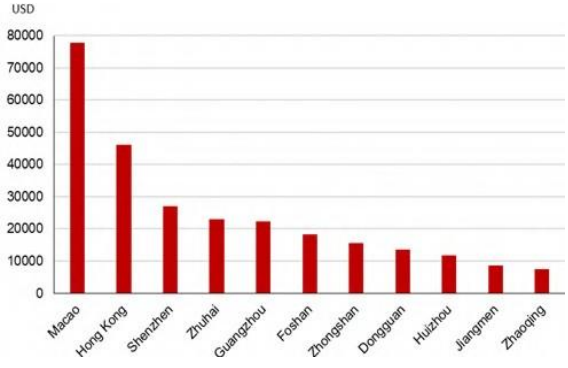
1. For example, given that two of the leading cities, Guangzhou and Shenzhen, are more advanced economies and have a significant manufacturing base, they will play a leading role in creating new technologies.
2. In comparison, Hong Kong, which is an advanced services-driven economy, will develop industries such as real estate building and investment, infrastructure development, financial services, professional services, and tourism. These industries do not need intensive use of land, which is a structural constraint for Hong Kong.
3. Between Shenzhen and Hong Kong, the roles of their financial sectors also differ, for good reason. Shenzhen's focus is more on servicing enterprises onshore, whereas Hong Kong, with its strong legal framework and internationally recognized regulatory and developmental frameworks, will continue to be a gateway between China and the rest of the world. The GBA plan identifies several other emerging industries as strategically important for Shenzhen, ranging from biotechnology to aviation and smart equipment.
4. The less advanced but land-rich cities are assigned other areas of development - three of the 11 cities that are relatively less advanced economies, collectively account for 63.9 percent of the GBA's total land mass (Figures A4.3 and A4.4). So, Zhaoqing will focus on sectors such as new energy vehicles, biomedicine, green initiatives, and youth enterprise – while continuing to tap its natural resources. Dongguan and Foshan will build on their substantial industrial base to progress to more advanced manufacturing, at the same time leveraging on improved transportation in the GBA to benefit from the relocation of manufacturing from higher-cost cities to lower-cost cities. Dongguan will also seek to develop itself in insurance, e-commerce, and technology services.

Figure A4.3. GBA Land Mass Distribution



Source: Development Bank of Singapore (DBS), Hong Kong

Figure A4.4. GBA Per Capita GDP Across Cities



Source: CEIC, DBS Hong Kong

4. **In the early phases of development, some stop-gap measures to address certain inadequacies will be necessary.** Some of these measures are meant to boost "basic enablers". For example, basic health care services remain in short supply in various geographical parts of the GBA – even for Shenzhen, one of the most developed GBA cities, there is a need to import medical practitioners from Hong Kong to provide short-term services. Other stop-gap measures tackle key drivers of growth. For example, various accounts suggest that the smaller or less developed GBA cities are already facing the prospect of a significant brain drain, and need to take near-term measures to retain talent which would otherwise migrate to the leading cities soon. But such an approach in turn creates other difficulties, ranging from uncertainty over medium and long-term projects, to the sustainability of funding incentives that will hold on to human capital.

5. From a medium-term perspective, the development of the GBA will benefit from it being the region within China which has the freest flow of goods, services, capital, and financing – and where promising nodes of development have formed.

(i) For example, in terms of the goods trade, much of Shenzhen's trade has been conducted with advanced countries, and the city is developing synergies with emerging market economies (EMEs) in the Belt and Road Initiative orbit through projects such as joint-venture industrial parks in Vietnam and other ASEAN countries. This creates potential for a reconfiguration of production and trade in ways which will benefit both China and its foreign partners. To help trade-oriented companies which want to go global, the Shenzhen government provides support via export credit insurance programs, especially for those with sound medium to long-term business plans for exports. Looking beyond Asia, liaison offices have been set up in some Pacific countries to explore opportunities for development and collaboration.

(ii) For infrastructure building which goes beyond private-sector demand for real estate, banks in Guangdong have the capacity and appetite to supply credit. CBIRC Guangdong projects that the growth of credit channeled to infrastructure development locally and in other fast-growing GBA cities will remain firm for years to come, alongside a continued brisk expansion of lending to manufacturing firms.

6. **Adopting the "one country, two systems" concept to bridge the gap in best practices and legal and institutional frameworks is important for the GBA project.** China has framed the project not only as an attempt to break new ground in opening up on all fronts in a new era, but also as a further step in taking forward the practice of "one country, two systems". This is important for the GBA in terms of integrating soft infrastructure and improving the business environment. For example, Hong Kong is ranked very high globally for its legal framework and IPR protection, and its governance framework. alongside its capacity for innovation. With the GBA plan envisaging a key role for Hong Kong in activities such as trade intermediation, aviation, professional services, financial services, and legal and dispute resolution, it makes sense to use Hong Kong's legal and governance framework as the basis

for any business contracts or projects between Hong Kong and Mainland companies. Over time, other GBA cities can draw on the essence of Hong Kong's best practices, adapt these practices to suit local needs, and work with Hong Kong to bring about greater interoperability among different systems. This would open up more channels for China as a whole to broaden its trade and financial linkages with other parts of the world.

7. GBA cities need to work closely with one another and with the central authorities to address overarching challenges, and in due course, spread the benefits of the GBA's development across China.

- One issue is balancing collaboration and competition. Notwithstanding the emphasis of the GBA plan on leveraging complementarities and generating shared growth, it is natural that those sectors which are the most high-tech and generate high growth will be the most attractive to the leading GBA cities. Therefore, there needs to be close consultation between China's leading group for GBA development and the top representatives from the participating cities to concretize the concept of collaboration over competition.
- Another issue is governance. As the GBA cities integrate more broadly and deeply, an overarching governance framework above "one country, two systems" will ultimately become necessary. China will need to shape such a framework by adopting best practices from across the cities.
- A third issue has to do with generating sufficient fiscal resources to sustain the GBA project in the long term, particularly since some outlays – including those that go towards providing regional public goods such as intercity transport networks – could bear fruit later rather than immediately.
- A fourth issue is spreading other benefits which arise from the development of the GBA to other parts of China in due course. Ambitious as the project is, the GBA accounts for just five percent of China's total population, less than one percent of its land mass, and about 12 percent of GDP. Therefore, no matter how rapidly the GBA grows, it cannot be the key driver of China's overall growth. However, if it can catalyze the development of other regions, for example, by relocating increasingly high-tech manufacturing and services, and by becoming a hub that adds to China's pool of human capital across different sectors, then its contribution to the country's development will be much more substantive.
- Finally, the GBA should play an instrumental role in enhancing the country's labor market, initially by providing better jobs and higher incomes within its own market, and then by having best practices adopted in other parts of the country. The pressure on employment in Mainland China remains. In 2019, the number of newly-added laborers who seek urban employment exceeded 15 million. Meanwhile, the authorities need to expand employment opportunities for the unemployed and migrating rural labor force. Additionally, there is a need to continue addressing structural challenges, including

geographical distance, a skills mismatch, and variations in employment and remuneration practices across enterprises in different parts of the country. As a project meant to accelerate China's growth, reform and opening up, the GBA should prioritize the improvement of labor quality and labor market functioning – starting from its own participating cities, and then catalyzing similar improvements in other parts of China.

City	Land Area (sq km) and Population (million)	GDP and GDP Per Capita	Strengths	Gaps
Hong Kong	1,107 s q km and 7.5 mn	HKD2,839 bn and HKD381,000	Trade-related services; tourism; financial sector; professional services; electronics (re-)exports; legal and regulatory framework; infrastructure	Mature economy with slowing growth; limited land; ageing population; lack of manufacturing base.
Guangzhou	7,434 s q km and 14.5 mn	RMB2285.9bn and RMB155,000	Capital of Guangdong Province; good transport network. Good developmental progress in some advanced manufacturing activities, including automobiles, electronics and petrochemicals, which are supported by six key production bases.	Lack of world-class universities and applied research institutions.
Dongguan	2,460 s q km and 8.3 mn	RMB827.9bn and RMB99,000	Solid manufacturing base which includes electrical machinery and equipment; textiles; garments, shoes and accessories; food and beverage processing, and papermaking and paper products. Cluster of emerging industries including LED lighting, new models of flat-screen monitors, and photovoltaics. Fairly good cross-border transport connectivity.	Not among the most technologically advanced GBA cities.
Foshan	3,798 s q km and 7.7 mn	RMB993.6bn and RMB128,000	Solid medium-tech manufacturing base, covering machinery equipment, household appliances, ceramic building materials, metal products, textiles and garments, food and beverage, fine chemicals and pharmaceuticals, and household goods. Good geographical location and cross-border transport connectivity.	Needs to make a rather big leap to move up the value chain to higher-tech manufacturing such as optoelectronics, environmental protection, new materials, new medicines, and new energy vehicles.
Huizhou	11,347 s q km and 4.8 mn	RMB410.3bn and RMB85,000	Rich land resources, being second largest among GBA cities; rich tourism resources. Good geographical position in south-eastern Guangdong, widely known as the "gateway of Eastern Guangdong". Electronic information and petrochemicals as pillar industries. Key production base for women's shoes and menswear.	Relatively less developed and less diversified economy compared to some of the other cities. Needs to find ways to acquire technologies needed to develop target sectors. Small population with need to bring in human capital from elsewhere.

City	Land Area (sq km) and Population (million)	GDP and GDP Per Capita	Strengths	Gaps
Zhaoqing	14,891 s q km and 4.1 mn	RMB220.2bn and RMB53,000	Rich natural resources in plentiful land, being Guangdong's "home of gold"; scenic environment. Good transport network, with several external ports and national expressways as well as intercity railways.	Much less developed than the other GBA cities on multiple counts: size of economy, per capita income and technological capacity. Absence of industrial base. Lack of focus in development plan compared to the other GBA cities.
Zhongshan	1,784 s q km and 3.3 mn	RMB363.3bn and RMB111,000	Strong geographical position in south-central Pearl River Delta, connecting Guangzhou in the north and close to Hong Kong and Macao. Base for some advanced manufacturing and modern service industries, but not a very wide range. Manufacturing base includes household appliances, textiles and garments, electronics, lighting, health care and pharmaceuticals, furniture, small home appliances and hardware products. Emerging sectors include modern service industry and yacht industry. Equipment manufacturing base in port area, hosting many large state-owned enterprises (SOEs).	Very small land mass and population. Relatively high per capita GDP due to hosting of SOEs, rather than large profits and high incomes from private sector at cutting edge of "new economy". A manufacturing base that is perhaps more aptly described as scattered rather than well diversified.
Shenzhen	1,997 s q km and 12.5 mn	RMB2,422.2bn and RMB190,000	Large economy and GDP; high per capita GDP reflecting strong competitive edge across manufacturing and services. Strong technological capacity, making Shenzhen well positioned to succeed in "new economy" with the four pillar industries of advanced technology, logistics, financial services and cultural industry. Good infrastructure, including strategic positions in transport networks.	Small land mass. Possibly insufficient population to provide entire pool of human capital needed for Shenzhen to succeed in all the target sectors, which include biotechnology, the internet, new energy, new materials, cultural and creative industries, information technology, energy conservation and environmental protection, plus future industries on life and health, marine activities, aerospace and aviation, and smart equipment.
Jiangmen	9,507 s q km and 4.6 mn	RMB290.0bn and RMB63,000	Diversified industrial base covering motorcycles and auto parts manufacturing, textiles and garments, shipbuilding, food, packaging materials, bathroom accessories and sanitary hardware, and electro-mechanics. Important source of supply of agricultural products and by-products for Pearl River Delta, Hong Kong and Macao.	Needs to make a rather big leap to move up the value chain to more high-tech manufacturing. Possibly insufficient population to provide entire pool of human capital needed for Jiangmen to succeed in all the target sectors, which include new energy, new lighting, new materials, high-

City	Land Area (sq km) and Population (million)	GDP and GDP Per Capita	Strengths	Gaps
			First agricultural cooperation pilot zone with Taiwan in Guangdong. Good transportation network as well as good geographical position at western Pearl River Delta.	end equipment manufacturing, as well as green household appliances.
Zhuhai	1,736 s q km and 1.8 mn	RMB291.5bn and RMB159,000	Good geographical position in south-central Guangdong and at confluence of Pearl River and South China Sea, adjoining Zhongshan in the north and Macao in the south. Rapid development since establishment as special economic zone (SEZ) in 1980, with progress up technological ladder in recent years: six key industries are electronic information, home appliances, electricity and energy, biopharmaceuticals and medical devices, petrochemicals and precision machinery.	Small land mass, and even smaller population. Need to draw in human capital from outside. For example, a number of preferential policies are targeted at attracting Hong Kong people and enterprises to Hengqin, a 106.5 sq km island incorporated into the Zhuhai SEZ in 2009.
Macao	33 s q km and 0.7 mn	MOP440.1bn and MOP666,000	Good geographical position in Pearl River Delta, in southern Guangdong on western side of Pearl River estuary, adjoining Zhuhai city to the north and 60km away from Hong Kong across the sea. Free economy: Macao pursues an open economic policy. Tax rate among lowest in the region. Free port with its own customs territory. Sound fiscal system. Key driver of growth is tourism: gambling and junket activities account for 47.2% of GDP.	Very small land mass and population size, imposing severe constraints on plans for Macao to develop into world-class tourism and leisure center; a commerce and trade cooperation service platform between China and Portuguese-speaking countries; and a platform for promotion of Chinese culture alongside other diverse cultures. Economy that is heavily concentrated on tourism, making it not easy to diversify into other sectors.

End of Report