AMRO Country Report
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AMRO Annual Consultation Report

Singapore – 2021

ASEAN+3 Macroeconomic Research Office (AMRO)

November 2021

Acknowledgments

1. This Annual Consultation Report on Singapore 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 AMRO's Annual Consultation Visit to Singapore from 17 May to 18 June 2021 (Article 5 (b) of the AMRO Agreement). The AMRO Mission team was headed by Dr Chaipat Poonpatpibul. Members included Mr Justin Lim Ming Han (Desk Economist), Ms Catharine Kho Tjing Yiing (Back-up Economist), Mr Yang Yang-hyeon (Senior Economist), and Ms Madeleine Vinuya (Research Data Analyst). AMRO Director Mr Toshinori Doi and Chief Economist Dr Khor Hoe Ee also participated in key policy meetings with the authorities. This AMRO Annual Consultation Report on Singapore for 2021 was peer reviewed by Dr Matthew Yiu Siu Fung, Mr Foo Suan Yong and Dr Choi Jinho, and approved by Dr Khor Hoe Ee, AMRO Chief Economist.
3. The analysis in this Report is based on information available up to 31 July 2021.
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 Singaporean authorities for their comments on this Report, as well as their excellent meeting arrangements during our visit.

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Executive Summary

1. Singapore's economy contracted sharply in 2020 due to the COVID-19 pandemic. Real GDP decreased by 5.4 percent in 2020, driven largely by restrictions on close contact services and construction activity due to cross border closure, as well as Circuit Breaker (CB) measures to contain the infection. The overall unemployment rate rose, peaking at 3.5 percent in Q3 2020. Employment decreased sharply in H1 2020, accounted for largely by a decline in non-resident employment.

2. The economy has rebounded since 2H 2020 on the back of strong policy support, robust external demand and an easing of containment measures, and is expected to grow strongly in 2021 and 2022. Growth is expected to be 6.5 percent in 2021, underpinned by the continued rebound in domestic demand and robust export performance. The labor market has also recovered steadily in line with the economic rebound. However, the recovery is likely to be uneven across sectors with tourism-related services sectors lagging behind. In 2022, growth is expected to remain robust at 4.0 percent due to further improvements in domestic demand, and the opening up and stronger recovery of the tourism and hospitality sector as herd immunity is achieved in Singapore and other countries with the ramping up of vaccination.

3. Inflation was slightly negative in 2020 and is projected to rise moderately in 2021. Both headline and core inflation declined to -0.2 percent in 2020 due to the economic contraction, retrenchment in employment, and collapse in global oil prices. In 2021, inflation has picked up, reflecting the economic recovery and low base effects. Both headline inflation and MAS Core Inflation are expected to continue rising before moderating towards the end of 2021 as the effects from the low base fade.

4. Singapore's financial sector entered the pandemic from a position of strength and has remained resilient throughout the crisis. The banking system's overall non-performing loan (NPL) ratio rose to 2.4 percent in Q1 2021 from 2.0 percent at end-2019. The NPL ratio in the general commerce segment increased to 5.2 percent, reflecting the greater impact of the pandemic on the retail and tourism-related sectors. Given the lingering uncertainties in the outlook, banks have been pre-emptively shoring up their loan loss allowances to buffer against potential credit losses. Capital and liquidity buffers have remained strong and well above regulatory requirements.

5. Unprecedented fiscal stimulus measures were deployed in 2020 while targeted support for affected businesses and households has been extended to 2021. In FY2020, five large fiscal stimulus packages, worth close to SGD100 billion, were implemented to support businesses and households. In the FY2021 budget, SGD11 billion was set aside to safeguard public health, ensure safe reopening, support workers and businesses, and provide targeted support for sectors under stress. Large fiscal reserves have enabled the government to deploy strong fiscal support, with a significant part of the fiscal outlays in FY2020 and FY2021 financed by a drawdown of up to SGD53.7 billion from past reserves.

6. The very large and timely policy support has significantly mitigated the pandemic's impact on the economy and supported its strong recovery. Public health spending and effective containment measures have resulted in a well-controlled pandemic situation notwithstanding the periodic outbreaks. The swift disbursements and sizable packages of wage subsidies to businesses, and cash transfers to households, have prevented widespread job losses. These measures have also mitigated the adverse impact on domestic economic activities.

7. Accommodative monetary policy, together with credit support, debt relief, and bank regulatory forbearances have supported lending, prevented a sharp increase in defaults, and safeguarded financial stability. The MAS has maintained an accommodative monetary policy stance throughout the pandemic period, which has helped ease constraints on Singapore

dollar cash flows for a number of businesses. Debt relief, credit support, and bank regulatory easing measures were quickly rolled out and later adjusted, taking into account updated information from financial institutions and borrowers. These measures helped stabilize credit conditions and prevent a sharp spike in NPLs and business closures.

8. With most sectors recovering steadily, a gradual exit from the broad-based debt relief scheme is appropriate. This would also help minimize the risk of supporting nonviable borrowers. Nonetheless, policy efforts should continue to focus on supporting displaced workers, and helping the aviation and tourism sectors prepare for the eventual recovery in international travel.

9. Notwithstanding these commendable achievements, renewed waves of the COVID-19 pandemic are the main risk to the economy. The key risks to Singapore's recovery stem from a COVID-19 resurgence domestically and abroad leading to the re-imposition and tightening of containment measures on already hard-hit businesses and households. In the medium term, potential changes to international tax rules could affect tax revenues and investments by multinational companies (MNCs). Over the longer term, Singapore will also need to contend with significant challenges arising from an aging population and climate change.

10. It is essential that the authorities remain flexible and consider extending fiscal support to hard-hit borrowers if there is a resurgence in infections or if growth momentum falters. It remains important to closely monitor credit risk among the more leveraged and cash-constrained corporates and SMEs.

11. AMRO recommends that monetary policy remain accommodative to complement fiscal policy support until the recovery is more firmly entrenched. The accommodative monetary policy is also appropriate in view of a negative output gap and moderate inflationary pressures in 2021.

12. The current tight macroprudential stance should be maintained in view of strong housing demand and supply-driven bottlenecks due to construction delays. To mitigate the risk of a sharp price correction in the future, AMRO's view is that further tightening might be warranted if prices increase at a significantly faster pace in the coming quarters. Authorities should further boost housing supply through increased government land sales for private residential developments, and increase new Housing and Development Board (HDB) flat launches.

13. The concerted efforts to better prepare firms and workers for the post-pandemic new normal are commendable. The refreshing of the Industry Transformation Maps and the recommendations from the Emerging Stronger Taskforce will strengthen firms' competitiveness and workers' productivity. Efforts to deepen the digital skills of lower-wage workers will not only enhance their employability but also promote inclusivity. The further strengthening of Singapore's "modern" services will raise its services exports and spur growth in other domestic sectors. Ensuring sufficient supply of foreign manpower in the high-growth sectors such as finance and ICT will enhance Singapore's competitiveness further.

14. AMRO supports the plan to finance major, long-term infrastructure investments via debt issuances. Under the Significant Infrastructure Government Loan Act (SINGA), the government plans to issue bonds, over the next 15 years, to finance up to SGD90 billion of major, long-term infrastructure projects. This approach will provide authorities with greater efficiency in managing public finances while also promoting intergenerational equity.

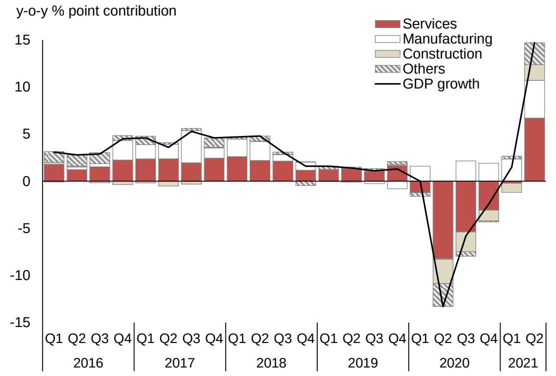
15. Singapore has accelerated efforts to address climate change. The Green Finance Action Plan will play a critical role in promoting green financing and sustainable growth. As a financial hub, Singapore is well-positioned to contribute to the region's climate finance needs.

A. Recent Developments and Outlook

A.1 Real Sector Developments and Outlook

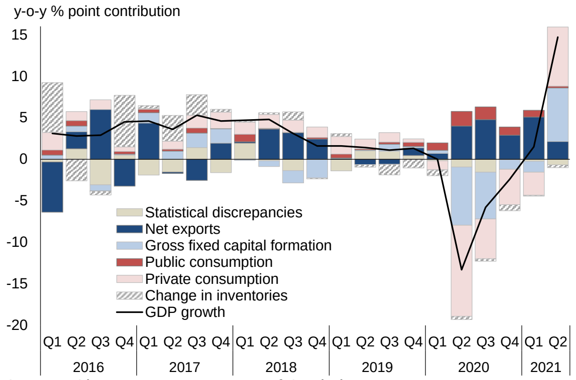
1. Singapore's economy contracted sharply in 2020 due to the Covid-19 pandemic. Real GDP decreased by 5.4 percent in 2020, after growing at 1.3 percent in 2019. Most services activities declined due to travel restrictions and Circuit Breaker (CB) measures to contain the pandemic (Figure 1). Construction activities contracted sharply due to measures to lock down the foreign worker dormitories in order to contain the outbreak. Notwithstanding the economic downturn, biomedical and electronics manufacturing, financial services, and information, communication technology (ICT) services, continued to expand due to strong domestic and external demand. A broader recovery across sectors was seen in 2H 2020 following the easing of CB measures. On domestic demand, private consumption and investments contracted sharply, but the boost in public consumption helped cushion the impact (Figure 2). Net exports contributed positively to real GDP growth reflecting strong manufacturing exports.

Figure 1. Contribution to Real GDP Growth: Supply Side



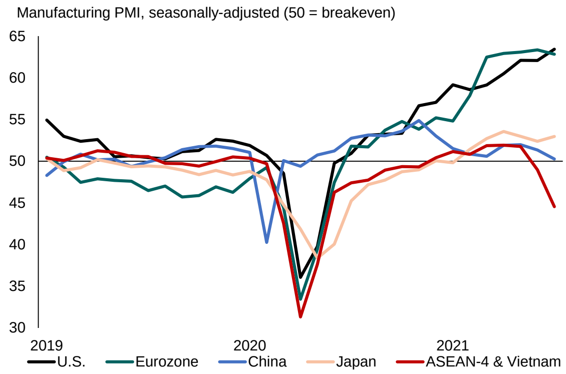
Source: Singapore Department of Statistics.

Figure 2. Contribution to Real GDP Growth: Demand Side



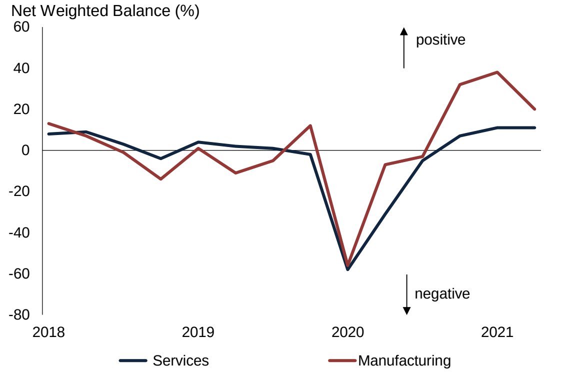
Source: Singapore Department of Statistics.

Figure 3. Manufacturing PMI of Singapore's Key Markets



Source: Haver Analytics; National authorities

Figure 4. Six Month-ahead Business Expectations by Sector



Source: Singapore Department of Statistics; Economic Development Board (EDB) Singapore

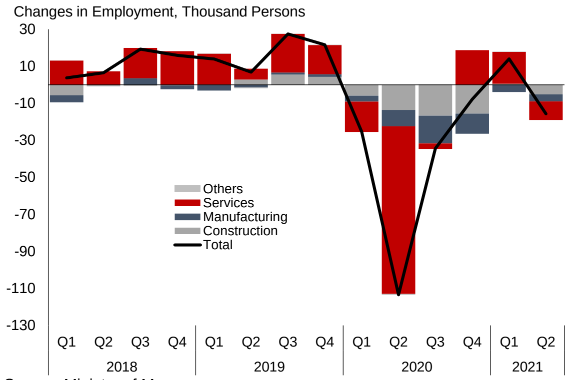
2. The economy is expected to turn around and grow strongly in 2021 and 2022. Real GDP in 1H 2021 rebounded by 7.7 percent. PMIs of Singapore's major trade partners (Figure 3) and business expectations in key services sectors (Figure 4) point to a continued robust recovery in 2H 2021[1]. The plan to ease the containment measures in 2H 2021, in line with the steady rollout of vaccinations domestically, is expected to bolster the recovery. As a result,

[1] From May to August 2021, Singapore's authorities retightened COVID -19 containment measures to address the rising number of COVID-19 transmissions domestically. However, the adverse impact of the measures on the food and beverage, and retail services sectors has been mitigated by the increased targeted policy support.

the economy is expected to rebound by 6.5 percent in 2021. However, the recovery is expected to remain uneven across sectors in 2021. The manufacturing sector is expected to continue growing strongly due to the robust global recovery and strong demand for electronics. Meanwhile, the recovery in the tourism-related sectors will likely remain modest due to border restrictions in several regional economies where the pace of vaccination is slow. In 2022, growth is expected to remain robust at 4.0 percent due to further improvements in domestic demand and stronger recovery of the tourism sector as border restrictions are removed with the ramping up of vaccinations globally.

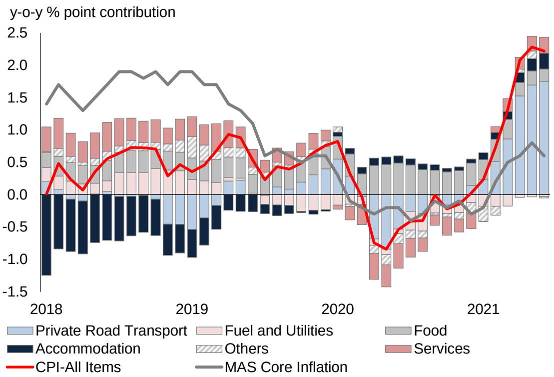
3. The labor market was severely impacted by the pandemic containment measures but has shown improvements since 2H 2020 with the easing of the measures. Overall employment fell by a record 181,000 in 2020, driven mainly by the decline in construction and services sectors. As a result of tighter border measures, higher hiring costs, larger wage subsidies and hiring incentives for resident workers, non-resident workers accounted for the entire decline in employment. The contraction in employment became less severe in H2 2021 as the authorities gradually eased the containment measures. In Q1 2021, total employment (excluding foreign domestic workers) started to increase. It contracted moderately in Q2 2021 due to the retightening of COVID-19 containment measures which began in May 2021 (Figure 5). The overall unemployment rate peaked at 3.5 percent in September 2020 before moderating to 2.7 percent in June 2021. Job vacancies rebounded during this period and rose further for the professional, manager, executive, and technician (PMETs) occupations. The recovery in the labor market is expected to gather pace but will likely continue to be uneven, as prospects for hard-hit sectors, particularly travel and tourism, remain weak.

Figure 5. Net Change in Employment by Sector



Source: Ministry of Manpower

Figure 6. Headline and MAS Core Inflation



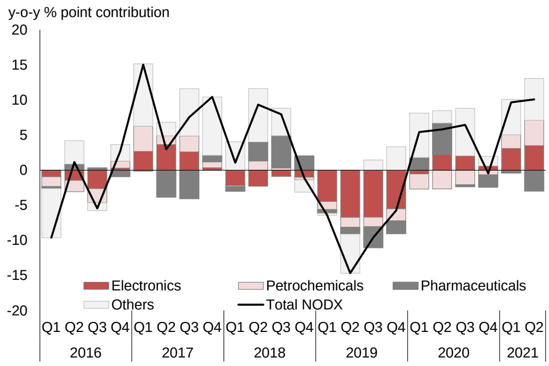
Source: Singapore Department of Statistics; Monetary Authority of Singapore

4. Inflation has turned positive and is expected to rise moderately in 2021. Both headline and MAS Core Inflation declined to -0.2 percent in 2020 due to the economic contraction, retrenchment in employment, and collapse in global oil prices. Inflationary pressures have picked up in 2021 in line with the economic rebound. Headline and MAS Core Inflation have turned positive with an average of 1.5 and 0.4 percent in H1 2021, respectively. The rise in MAS Core Inflation was contributed by higher services costs and food prices. Meanwhile, the sharper rise in headline inflation reflected the surge in private transportation costs, which is attributed to the increase in car prices, and also the steady increase in accommodation costs. Looking ahead, MAS Core Inflation is projected to continue rising gradually while headline inflation is expected to increase moderately towards the end of the year. For 2021, headline inflation and MAS Core Inflation are projected at 1.6 percent and 0.6 percent respectively.

A.2 External Sector and Balance of Payments

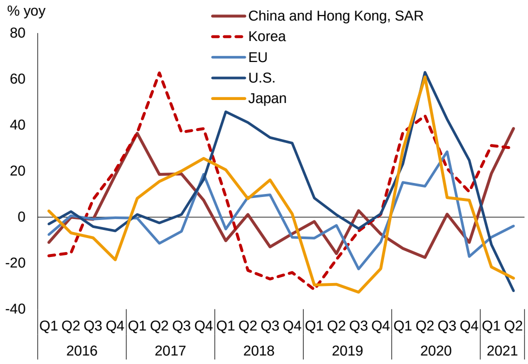
5. Non-oil domestic exports (NODX) expanded moderately in 2020 and strengthened in early 2021. After a sharp contraction of 9.2 percent in 2019, NODX grew moderately at 4.3 percent in 2020. NODX rose further by 9.9 percent in H1 2021, driven by strong exports of electronics, petrochemicals, and other products such as specialized machinery (Figure 7). NODX to the U.S., Japan, and the E.U. grew in 2020 from the low base in 2019 before decelerating in 2021 (Figure 8). NODX to China, Hong Kong[2], Korea and a few ASEAN countries grew strongly. While Singapore's export outlook for the rest of 2021 is expected to remain robust given the strong external demand, a worsening of the pandemic situation in regional economies could weigh on exports.

Figure 7. NODX Growth by Product



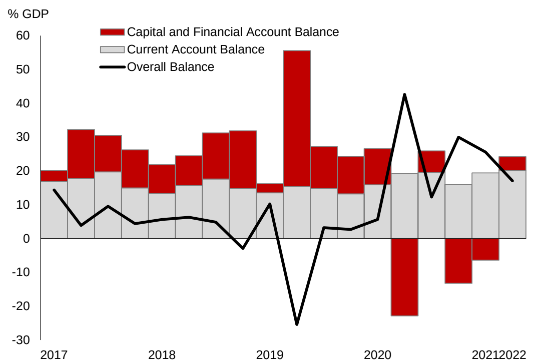
Source: Enterprise Singapore

Figure 8. NODX Growth by Destination



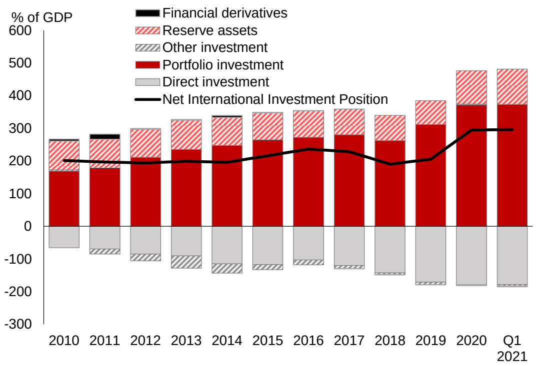
Source: Enterprise Singapore

Figure 9. Balance of Payments Components



Source: Singapore Department of Statistics
Note: For the capital and financial account balance, a decrease in assets and liabilities, and net inflows in net balances, are indicated by a minus (-) sign.

Figure 10. Net International Investment Position



Source: Singapore Department of Statistics

6. Singapore's external position has strengthened significantly during the pandemic period. The current account surplus increased from 14.3 percent in 2019 to 17.6 percent of GDP in 2020, and rose further to 19.4 percent of GDP in Q1 2021 (Figure 9). The current account surplus increased year-on-year in Q1 2021 largely due to the wider services trade surplus which was attributable to a sharper contraction in imports relative to exports. In contrast to previous years, the capital and financial account recorded strong net inflows in 2020 and Q1 2021, driven mainly by a turnaround in other investments which recorded net inflows during this period. There were large gross inflows into resident banks during the heightened risk aversion in Q1 2020, but these flows were reversed in the following quarters. The large positive balances in both the current account, and the capital and financial accounts, contributed to the large surplus of the overall balance of payments. Foreign reserves increased sharply to USD398.4 billion or 15.5 months of retained imports of goods and average monthly

[2] Hong Kong, China will be referred to as Hong Kong hereafter.

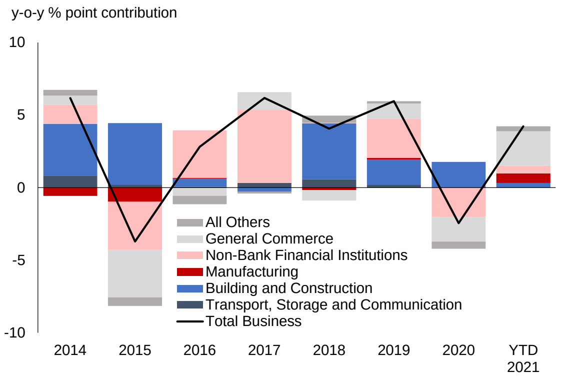
imports of services from July 2020 to June 2021, from USD279.5 billion as of end-2019. The net international investment position continued to register larger net asset positions (Figure 10), reaching 296.2 percent of GDP in Q1 2021.

A.3 Monetary Conditions and Financial Sector

7. Singapore's financial sector entered the pandemic from a position of strength and has remained resilient throughout the crisis. The banking system's overall NPL ratio rose to 2.3 percent at end-Q2 2021 from 2.0 percent at end-2019. It increased significantly to 5.0 percent in the general commerce segment, reflecting the pandemic's greater impact on the retail and tourism-related sectors. Local banking groups' NPL ratios remained unchanged at 1.5 percent in Q2 2021 from end-2019, in part due to debt relief measures and the loan moratorium programs. Given the lingering uncertainties in the outlook, banks have pre-emptively increased their loan loss allowances to cover potential credit losses. Capital and liquidity buffers have remained strong, at well above regulatory requirements.

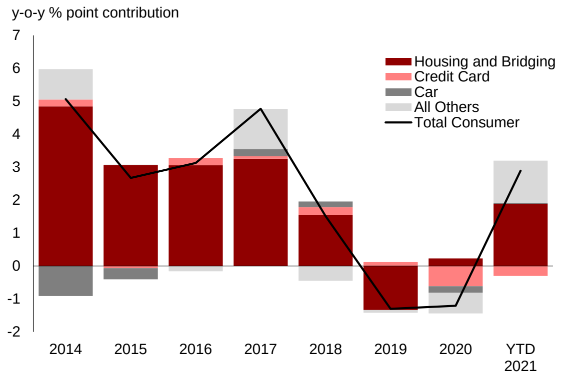
8. Domestic loan growth declined in 2020 but has turned around in 2021. After declining by 2.0 percent in 2020, overall Domestic Banking Unit (DBU) lending grew by 3.7 percent (ytd) as of June 2021. The fall in lending to general commerce businesses and non-bank financial institutions was due to weak demand and tighter credit conditions (Figure 11). Lending to the building and construction segment, however, remained quite stable. Moreover, lending to SMEs rose due to credit relief measures introduced in April 2020. Overall lending to households decreased by 1.2 percent in 2020, but grew by 2.9 percent (ytd) as of June 2021, due to resilient housing market conditions and the low-interest rate environment (Figure 12).

Figure 11. Growth in Domestic Banking Unit (DBU) Loans and Advances to Businesses



Source: Monetary Authority of Singapore

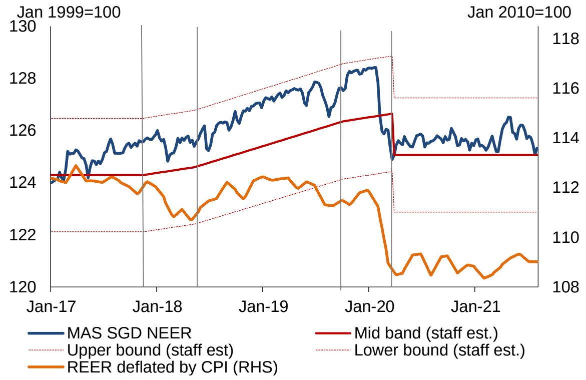
Figure 12. Growth in DBU Loans and Advances to Customers



Source: Monetary Authority of Singapore

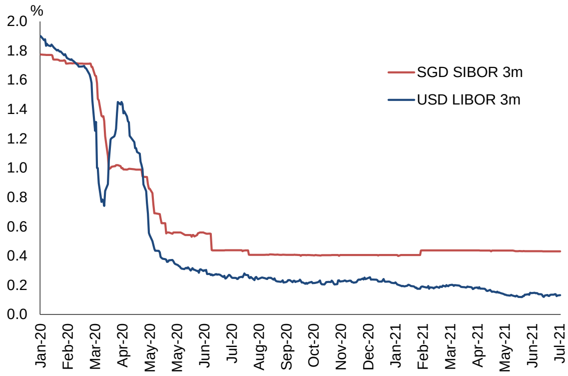
9. The SGD nominal effective exchange rate (NEER) depreciated markedly at the onset of the pandemic and has remained stable since then. The SGD NEER fell in early 2020 due to the sharp strengthening of the US dollar as a result of global market turbulence and a spike in risk aversion. Based on AMRO's estimate, it remained near the mid-point of the exchange rate policy band for the rest of 2020, before edging up slightly in early 2021 (Figure 13). The real effective exchange rate (REER) has broadly moved in tandem with the SGD NEER. Similarly, the 3-month Singapore Interbank Offered Rate (SIBOR) rate fell sharply in early 2020 in line with the decline in the 3-month London Interbank Offered Rate (LIBOR) rate. However, the SIBOR rate has remained stable in H2 2020 through mid-2021 (Figure 14).

Figure 13. SGD NEER and the Estimated Exchange Rate Policy Band



Source: Monetary Authority of Singapore; CEIC; AMRO staff calculations

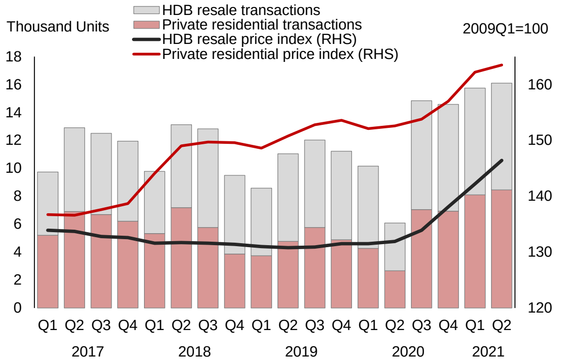
Figure 14. Interbank Rates



Source: ABS Benchmarks Administration; ICE Benchmark Administration

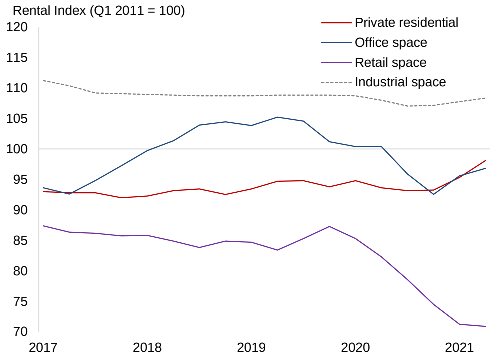
10. The price and transactions of residential properties have increased steadily during the pandemic period. Despite the sharp economic contraction, prices of resale public housing and private residential properties rose strongly by a cumulative 11.3 percent and 7.5 percent respectively between Q1 2020 and Q2 2021 (Figure 15). Transactions fell during the CB lockdown period but picked up following the easing of containment measures in June 2020. Demand was bolstered by the low-interest-rate environment and Singaporeans returning from overseas. At the same time, supply-side factors such as a slowdown in construction activity—reflecting the lockdown of foreign worker dormitories, supply chain disruptions and rising raw material costs also contributed to the increase in home prices. The delay in completion of HDB Build-To-Order (BTO) projects diverted some buyers to the resale market.

Figure 15. Property Prices and Transaction Volumes



Source: Housing and Development Board; Urban Redevelopment Authority

Figure 16. Rental Index



Source: Urban Redevelopment Authority

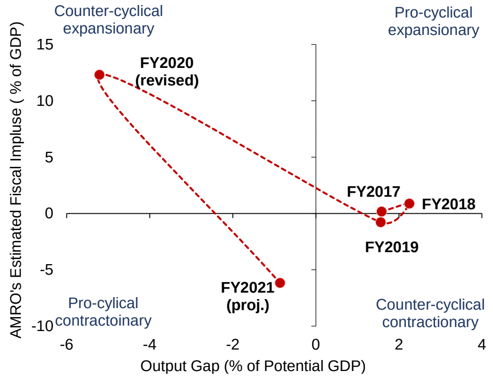
11. In the office and retail space segment, both prices and rents have fallen since 2020 as a result of the pandemic containment measures and the ensuing economic downturn. Office and retail space prices decreased by 8.7 percent and 7.3 percent between Q1 2020 and Q2 2021, respectively, as the pandemic accelerated the shift towards work-from-home and e-commerce. Rents for offices and retail spaces decreased by 3.6 percent and 16.9 percent between Q1 2020 and Q2 2021, respectively (Figure 16). There was some improvement in vacancy rates in 2H 2020 as movement restrictions were relaxed.

A.4 Fiscal Sector

12. The government provided unprecedented fiscal support in FY2020 to mitigate the pandemic's impact. Five large fiscal stimulus packages, worth almost SGD100 billion, were deployed to strengthen public health capacity, preserve jobs, boost employment, and support hard-hit businesses and households in FY2020. Total expenditure rose sharply to 20.2 percent of GDP in FY2020 from 14.8 percent in FY2019. Special transfers (including top-ups to endowment and trust funds) to households and businesses were also significantly increased. The decline in operating revenue—particularly in corporate income tax, asset taxes, goods and services tax, and other taxes—was mainly due to tax deferments and rebates, fee waivers, and the weak economy. Based on AMRO's estimate, Singapore's fiscal stance in FY2020 turned highly counter-cyclical and expansionary (Figure 17). To fund the large fiscal outlay, the President[3] approved the drawdown of up to SGD52 billion (11.0 percent of FY2020 GDP) from past fiscal reserves. Spending was also supported by a reallocation of expenditures from other areas, including development expenditures that were delayed due to the pandemic.

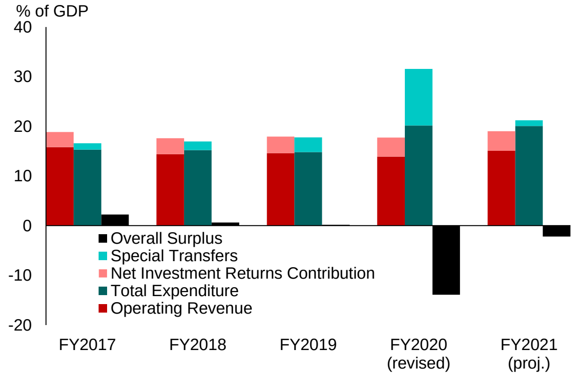
13. Targeted support for affected businesses and households was extended under the FY2021 Budget and the July Ministerial Statement. In the FY2021 budget, a total of SGD11 billion was set aside to safeguard public health, ensure safe reopening, support workers and businesses, and provide targeted support for distressed sectors. Compared to the Revised FY2020 Budget, total expenditure under Budget FY2021 is estimated to increase by 8.8 percent, reaching 20.2 percent of GDP in FY2021. Operating revenue is projected to grow by 18.6 percent to 15.2 percent of GDP in FY2021, in line with the economic recovery and the cessation of tax deferment and rebates, and fee waivers. President's approval was also sought to use up to a total of SGD53.7 billion from past reserves to support these spending needs, a SGD1.7 billion increase from the earlier approved amount. During the heightened alert period from May to August 2021, more than SGD2.0 billion was deployed to support affected businesses and households[4]. As broad-based fiscal stimulus measures were phased out, the overall budget deficit is expected to narrow sharply to 2.2 percent in FY2021 from 13.9 percent of GDP in FY2020 (Figure 18).

Figure 17. AMRO's Estimated Fiscal Impulse and Output Gap



Source: AMRO staff calculations; Ministry of Finance

Figure 18. Fiscal Revenue and Expenditure



Source: Ministry of Finance

[3] Under the Constitution of the Republic of Singapore (Amendment) Act 1991, the President safeguards the Past Reserves of the Government in the following ways: 1) Approval of the Annual Budget of the Government; 2) Approval of appointment and removal of key government officials; and 3) Rules governing how investment returns from past reserves can be taken into each year's Budget for spending.

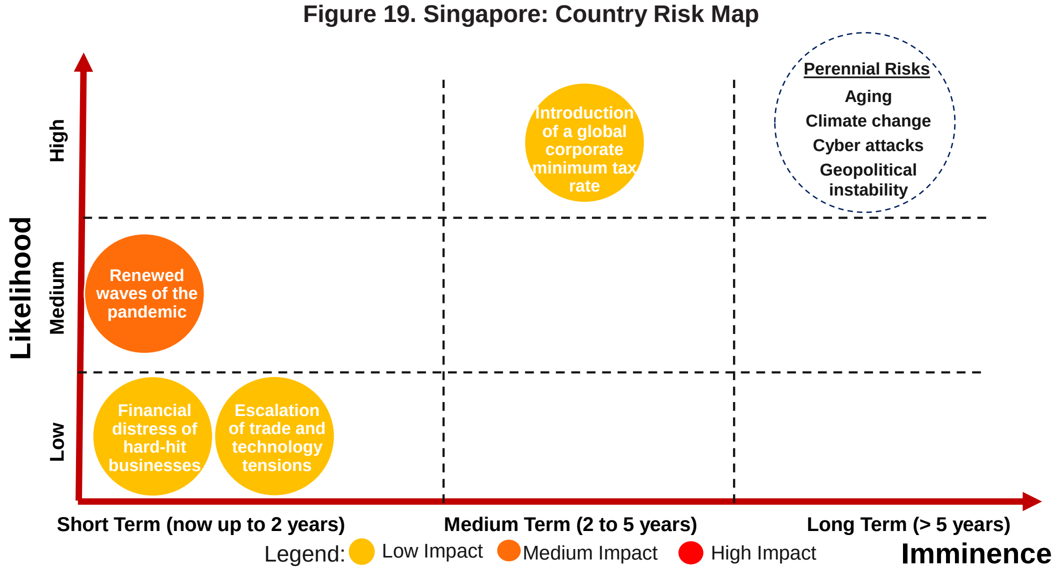
[4] This spending will be funded from a reallocation of operating and development expenditure due to reasons such as postponement and cancellation of activities due to COVID-19 and construction project delays, and from infrastructure projects that are eligible for financing under the Significant Infrastructure Government Loan Act (SINGA).

B. Risks, Vulnerabilities and Challenges

B.1 Near-term Risks to the Macroeconomic Outlook

14. Downside risk to growth stems mainly from renewed waves of the COVID-19 pandemic (Figure 19). The key risks to Singapore's recovery are: a resurgence of the COVID-19 pandemic and the impact of renewed lockdown on hard-hit businesses and households in the short term, and an escalation of U.S.-China trade and technology tensions. In the medium term, changes to international tax rules could affect tax revenues and investments by multinational companies (MNCs). Over the longer term, Singapore will also need to contend with significant challenges arising from population aging and climate change.

Figure 19. Singapore: Country Risk Map



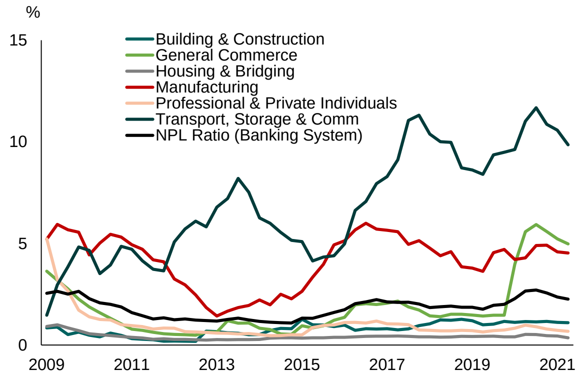
Source: AMRO

15. A resurgence of the COVID-19 pandemic is a major risk to Singapore's growth and employment prospects. Renewed waves of infections in Singapore and overseas, and delays in vaccine rollout, especially in regional economies, are key risks to growth. These risks could trigger renewed lockdowns, further hamper the resumption of international travel, and dampen consumption and production activities. On the domestic front, the recovery in Singapore's high-contact services sectors will be impeded, with knock-on effects on the labor market. Further disruptions to global supply chains can also dampen exports. Given these uncertainties, AMRO's growth-at-risk analysis suggests that although growth is expected to be strong in 2021, there is still a significant risk of derailment (See Box A: Growth-at-Risk in Singapore).

16. Rising financial distress among more vulnerable businesses can lead to a deterioration of banks' asset quality. NPLs among firms, especially SMEs, in hard-hit sectors could increase further should the recovery in these sectors weaken (Figure 20). Financial distress of corporates in South and Southeast Asia would also lead to rising NPLs in cross-border loans, which account for approximately 16.9 percent of local banks' total business lending in 2020 (Figure 21). This risk will heighten further should global financial conditions tighten moving forward, as it can lead to rising financing costs, especially for highly-leveraged firms. However, increased provisions for banks and strong capital buffers are expected to help mitigate the rising credit risk. AMRO's reverse solvency stress test on local banks in Singapore shows that for Tier 1 and total capital to fall to the regulatory capital minimum levels, NPLs would have to rise from 1.5 percent as of Q1 2021 to as high as 12.9

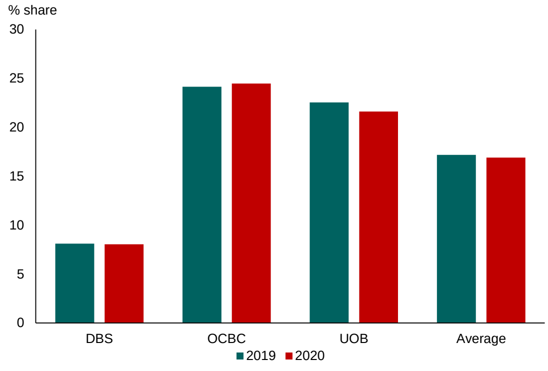
percent and 13.3 percent, respectively in 2021, which is unlikely to happen (AMRO, 2021)[5]. Additionally, the overall non-bank loan-to-deposit ratio has declined to 94.3 percent as of June 2021 from 104.1 percent at end-2019.

Figure 20. Banking System NPL Ratio by Sector



Source: Monetary Authority of Singapore.

Figure 21. Share of Local Banks' Assets in Other Regional Countries



Source: 2020 UOB, OCBC and DBS annual reports
Note: Other Regional Countries mainly refers to Malaysia, Thailand Indonesia and other Asia-Pacific countries.

17. An escalation of US-China trade and technology tensions could weigh on exports and result in increased business costs. This escalation could disrupt exports, especially of electronics and other high tech products, as negative spillovers would be transmitted along supply chains, in which Singapore is deeply integrated. The bifurcation of technology and supply chains will require a restructuring of existing production networks, increases cost of doing business, and dampen investment. In the medium term, the impact would be mitigated once businesses have adapted to the new operating landscape.

18. Changes to international tax rules could affect tax revenues and impact some MNCs' investment decisions in Singapore. The impact of the base erosion and profit shifting (BEPS) 2.0 rules including Pillar 1 (allocation of tax rights) and Pillar 2 (introduction of a global minimum tax rate) on Singapore will depend greatly on the implementation parameters, and how the government and businesses respond to the new rules. While most MNCs are likely to remain in Singapore because of a number of other supportive factors, there could be some relocation and restructuring of businesses which could also affect Singapore's growth prospects in the medium term.

- The proposed Pillar 1—to tax larger MNCs based on their users' location—is likely to reduce corporate tax revenues in Singapore. This is because a share of the profits will shift from being taxed at where the substantive economic activities are conducted, to the country where customers are situated. Singapore's small domestic market size limits the tax revenues that can be collected via the domestic market mechanism.
- The impact of Pillar 2 will depend on the actual tax rate adopted, its implementation design and how Governments and businesses will respond. The current proposal for Pillar 2 under ongoing international discussion is to apply this minimum effective tax rate to multinational enterprises that meet a certain revenue threshold, currently set at 750 million euros. There are about 1,800 multinational enterprise groups in Singapore with annual global revenues of at least 750 million euros, and a majority of these 1,800 groups are expected to have

[5] Local banks' average Tier 1 and total capital stood at 15.5 percent and 17.6 percent respectively as of end-2020. The reverse solvency stress test estimates the highest NPL ratio that can be reached before a bank will need to recapitalize to meet its regulatory capital adequacy requirements. Under the Basel III requirement, minimum capital adequacy is defined as 10.5 percent of total risk-weighted assets while the minimum requirement of Tier 1 capital plus buffer is 8.5 percent. Individual bank data are based on banks' financial statements as of end-2020. For more details on methodology, please refer to "Box 1.12: Well-Buffered ASEAN+3 Banking Systems", ASEAN+3 Regional Economic Outlook 2021.

group effective tax rates below 15% in Singapore. Notwithstanding the uncertainties, Singapore's strengths in terms of its proximity to key growth markets, advanced infrastructure, sound legal framework and financial system, and skilled talent pool, would continue to support its attractiveness as a regional hub for MNCs.

Box A. Growth-at-Risk in Singapore[6]

The Growth-at-risk (GaR) methodology (Prasad et al, 2019) is applied to assess uncertainties surrounding Singapore's growth forecast.[7] Using a set of economic and financial indicators, the GaR approach links current macroeconomic and financial conditions to derive a range of future real GDP growth including possible worst-case scenarios. For Singapore, the set of variables is aggregated into five main groups in Table A1 below using principal component analysis based on quarterly data from Q1 2002 to Q2 2021. The conditional density forecast for future growth is estimated using quantile regressions, which is then used to derive the probability distribution of Singapore's GDP growth for 2021 and 2022.

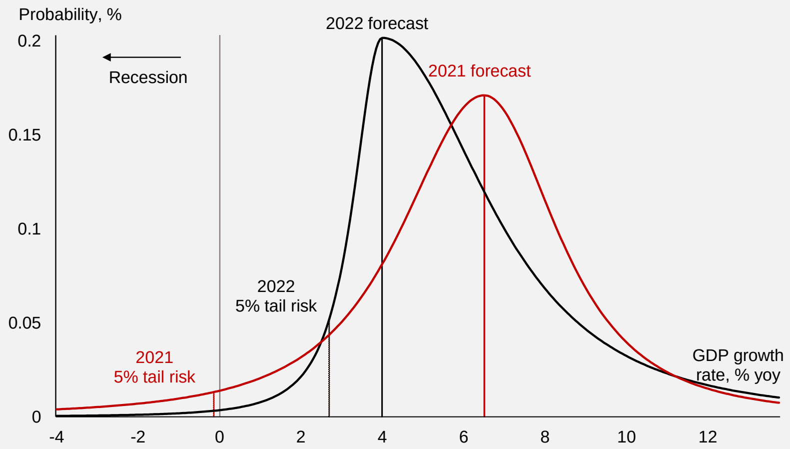
Table A1. List of Variables used for each Group

No.	Group	Variables
1	Domestic Financial Conditions	1-month SIBOR rate, Inflation, Property Price Growth
2	Domestic Leverage	Credit Growth, Loan-to-Deposit Ratio
3	External Sector	SGD NEER, USD/SGD Bilateral Exchange Rate
4	GDP Growth of Other Key Trade Partners	U.S., E.U. and China
5	Global Financial Conditions	CBOE Volatility Index, Federal Funds Rate, U.S. 10-year Treasury Yield

Source: AMRO staff estimates

Risk is still tilted to the downside in 2021 but the balance of risk is expected to shift to the upside in 2022. Based on macroeconomic and financial conditions as of Q2 2021, Figure A1 shows that the 2021 growth distribution is skewed to the downside. Our GaR exercise indicates that GDP growth would contract by -0.2 percent at the 5-percent tail risk under the adverse scenario in 2021. Against this backdrop, authorities should still stand ready to support the overall economy if the pandemic situation worsens and growth falters. In 2022, the risk shifts quite significantly to the upside and the probability of a recession narrows significantly to less than 1 percent in 2022 from 5.3 percent in 2021. Although the baseline GDP growth in 2022 is projected to be lower at 4.0 percent compared to 6.5 percent in 2021, the 5-percent GaR improves significantly to 2.7 percent.

Figure A1. Conditional Distribution of Real GDP Growth Forecast for 2021 and 2022



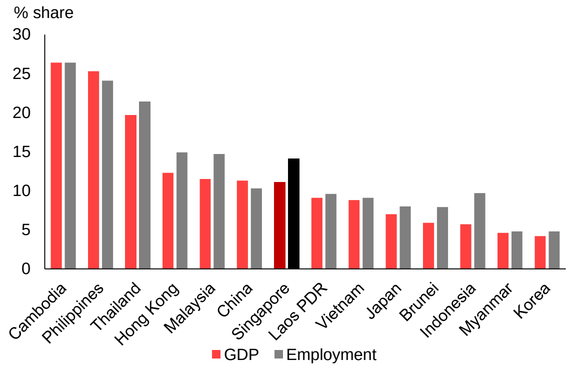
Source: AMRO staff calculations using the Excel-based tool in Prasad et al (2019). "Growth at Risk: Concept and Applications in IMF Country Surveillance".
Note: Based on information available as of Q2 2021; two- and six-quarters ahead for the 2021 and 2022 forecasts, respectively.

[6] Prepared by Justin Lim.
[7] Prasad et al. (2019). Growth at Risk: Concept and Application in IMF Country Surveillance. IMF Working Paper

B.2 Longer-term Challenges and Vulnerabilities

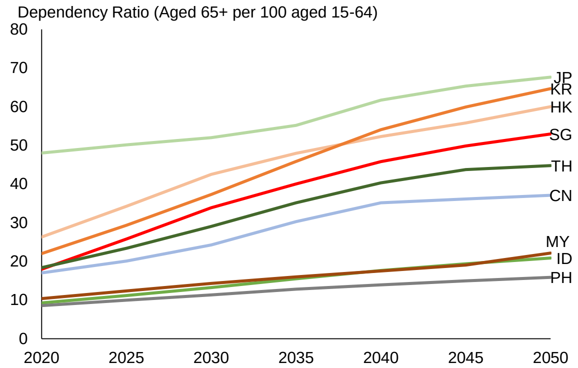
19. The full extent of the pandemic's economic impact is still uncertain. Given the evolving pandemic situation, the magnitude of economic scarring and the recovery prospects of the hard-hit travel and hospitality sectors are uncertain. In the case of Singapore, the impact can be significant, given the large contributions of the travel and hospitality sectors to the economy, which are estimated at 11.1 percent of GDP and 14.3 percent of employment (Figure 22). However, policy efforts to boost productivity and shift displaced workers to new growth areas have helped alleviate the scarring impact.

Figure 22. Contribution of Travel and Tourism to the Economy



Source: World Travel and Tourism Council

Figure 23. Old Age Dependency Ratios



Source: World Population Prospects: The 2019 Revision, United Nations

20. Challenges from population aging are significant and wide-ranging. As Singapore's population is aging rapidly, demand for healthcare and social welfare services is expected to continue rising. Based on the 2019 Revision of World Population Prospects forecast, Singapore's old-age dependency ratio is projected to increase from 18 percent in 2020 to 52.4 percent by 2050 (Figure 23). National healthcare expenditure is also projected by the authorities to grow at an annual rate of 9.0 percent from SGD20.7 billion in 2018 to SGD59.1 billion in 2030. Fiscal spending on aging-related healthcare needs will increase in tandem. A rapidly aging society will reduce the labor force and the growth potential in the long run unless it is offset by productivity growth and immigration of foreign workers.

21. Climate change poses significant macroeconomic and financial risks. Rising sea levels and atmospheric temperature are important climate change risks that can lead to sizable economic and financial losses for Singapore. Extreme and intense weather pattern changes will also pose significant challenges to its water supply and flood management efforts, given its limited freshwater resources. Building the infrastructure needed to mitigate and adapt to these challenges requires strong commitment, substantial effort, and resources from both the public and private sectors. Large economic and financial costs will also be incurred during the transitional period of infrastructure building and developing a comprehensive sustainability framework.

Authorities' View

22. The authorities agree that COVID-19 continues to be Singapore's biggest risk. The pandemic situation, especially in several regional economies, continues to be very challenging. Domestically, the situation is still uncertain although some vaccination milestones have been achieved and vaccination appears to be effective in reducing infection and transmission rates. As such, a road map is being considered to move to a new normal once herd immunity is achieved with COVID-19 becoming endemic. The recovery in the tourism-related sector will likely remain slow given the renewed pandemic waves and slow pace of vaccination in many countries.

23. The implications of changes in international tax rules on the fiscal position and the economy are still uncertain. Singapore's competitiveness buttressed by macroeconomic and political stability, rule of law, skilled manpower and high-quality infrastructure, will help mitigate the impact on FDI by MNCs.

24. The pandemic has accelerated long-term structural shifts on many fronts. Since the pandemic's impact on the economy is expected to be larger and more enduring than those of past crises, Singapore has to prepare for the new normal, including uncertainties surrounding the future of globalization, global value chain (GVC) reconfiguration, digitization and an increased focus on social, environmental and economic sustainability.

C. Policy Discussions and Recommendations

C.1 Strong Fiscal Policy to Mitigate the Pandemic's Impact

25. AMRO commends the government's large fiscal policy support, which has helped cushion the pandemic's impact and aided employment recovery. Strong fiscal reserves have enabled the government to provide substantial support to the economy during the Covid-19 pandemic. The fiscal support has been significantly larger than those provided in past crises. It has also been timely and while the coverage was very broad at the onset of the crisis, it became more targeted as the pandemic situation improved (see Selected Issue 1: Singapore's Fiscal Response to COVID-19 Crisis: Achievements and Takeaways for the Future). Spending on public health measures including an expansion of contact tracing and infection testing, effective containment measures, steady vaccine rollouts and healthcare capacity enhancement, have resulted in a controlled infection situation in Singapore and facilitated the progressive reopening of the economy. The swift disbursements and sizable packages of wage subsidies to businesses, and cash transfers to households, have prevented widespread job losses and reduced the adverse impact on domestic economic activities.

26. AMRO supports the government's move to taper fiscal assistance to sectors that are recovering while continuing to provide support to hard-hit sectors. With most sectors recovering steadily, the phased withdrawal of policy support to these sectors is appropriate. However, given the uneven and uncertain recovery, further support for hard-hit sectors and SMEs is needed to minimize scarring effects. AMRO also supports the authorities' additional measures to support affected sectors and low- to-middle income households when containment measures were tightened between May and August 2021. The authorities should remain flexible and be prepared to extend further fiscal support if there is a resurgence in the number of infections or if the growth momentum falters.

27. In AMRO's view, further support for the aviation and tourism sectors is warranted to help these businesses prepare for the eventual recovery of international travel. The damage to the aviation and tourism sectors will be significant due to the slow resumption of international travel and renewed waves of the pandemic in many countries. In addition, even if business travel resumes, its volume will be much lower compared to pre-pandemic levels due to the rising trend of remote work. Therefore, further support for these sectors would help ensure these businesses are well-positioned to capitalize on Singapore's strength as an international aviation, business and leisure travel hub when international travel does recover. Nonetheless, further support for the tourism industry should take into account business viability prospects, which differ across segments. In the meantime, efforts to boost domestic tourism further are encouraged.

28. We welcome the authorities' plan to issue debt to finance major long-term infrastructure projects, which will promote intergenerational equity and facilitate more efficient budget management. Under the Significant Infrastructure Government Loan Act (SINGA), the government plans to borrow up to SGD90 billion over the next 15 years to finance major infrastructure development. The bond financing will effectively distribute the cost of major infrastructure spending across multiple generations—that will benefit from their development—and will promote intergenerational equity. This approach will also provide authorities with greater efficiency in managing public finances. The current favorable interest rate environment is an opportune time for the government to borrow to finance some of these infrastructure projects for which construction will commence in the near term.

29. The planned GST hike would mitigate the pressure on the fiscal balance that could arise from a significant increase in socioeconomic expenditure in the longer term. Recurrent fiscal spending on various socioeconomic needs, such as aging and healthcare costs, is projected to rise significantly over the long term. Given these trends, the authorities are committed to the planned increase in the goods and services tax (GST) between 2022 and 2025, subject to the economic outlook. AMRO staff estimates that the hike will increase GST revenue collection by about 0.6 percent of GDP, which will help defray higher socioeconomic spending. However, given the protracted COVID-19 pandemic, securing a sustained economic recovery should remain the priority in the short term. Alternatively, other revenue enhancement measures, such as raising the Net Investment Returns Contribution or introducing wealth taxes, could be considered to help meet these spending needs in the longer term.

C.2 Accommodative Monetary Policy to Support Economic Recovery

30. The accommodative monetary policy should be maintained in view of the lingering uncertainties over the economic recovery, and moderate inflationary pressures. The accommodative monetary policy stance was maintained at the April 2021 Monetary Policy Meeting and the slope of the SGD NEER policy band was kept at zero. This is because the output gap was negative and the MAS Core Inflation is expected to be low. Monetary policy should remain accommodative to complement the fiscal policy support until recovery is firmly entrenched.

C.3 Regulatory Forbearance, Credit and Liquidity Support

31. The debt relief, credit support and bank regulatory easing measures have prevented a sharp increase in defaults, supported lending, and safeguarded financial stability. The authorities rolled out several measures to mitigate the pandemic's impact on households and businesses, and the financial system in a swift and timely manner:

- Initial measures to ease borrowers' cash flow pressures through the postponement of loan repayments have seen strong take-up.
- Enterprise Singapore's loan schemes that provide a government risk share of 90 percent (up to 31 March 2021, and 70 percent from 1 April 2021 to 31 March 2022), coupled with MAS SGD Facility for ESG Loans, have helped facilitate continued financing to SMEs at a lower funding cost.

- The customized debt restructuring assistance schemes and the Simplified Insolvency Programme and other customized debt restructuring assistance schemes have also eased SMEs' debt burden and facilitated the winding-up process for businesses that were no longer viable.
- Timely adjustments made by the MAS to financial regulations and supervision programs have enabled banks to better assist their customers during the pandemic. These measures include relaxing banks' capital and liquidity requirements, and deferring the implementation of regulatory reforms. In addition, MAS provided guidance on the setting of loan loss provisioning. Specifically, banks were asked to take into account assistance measures provided by the government, in assessing the pandemic's impact on future economic conditions and borrowers' longer term risk of default.

32. In AMRO view, these measures have been crucial in stabilizing credit conditions, and have prevented a sharp spike in NPLs and business closures. This has in turn supported employment and reduced scarring effects on the economy. We commend the close cooperation between authorities and financial institutions, which has helped serve the needs of borrowers and financial institutions during the pandemic. In view of the uncertain pandemic situation, the authorities should continue to closely monitor credit risk among the more leveraged and cash-constrained corporates and SMEs, and stand ready to extend further liquidity support.

33. AMRO supports the tapering of debt relief measures, together with the transition to a targeted scheme that provides continued relief for hard-hit borrowers. With most sectors improving steadily, the gradual exit from the broad-based debt relief scheme is appropriate. This would also help minimize the risk of supporting nonviable borrowers. The extension of tiered debt relief, with partial loan repayment, will also give more time to hard-hit but still viable borrowers to recover. The tapering of these extended measures should be in line with the pace of recovery in those sectors.

34. The MAS-Federal Reserve USD 60 billion swap line has played a critical role in boosting confidence and in stabilizing USD funding markets and supporting lending to businesses both in Singapore and in the region. USD liquidity conditions in Singapore were temporarily affected by the global dollar liquidity shortfall in March 2020 (see Box B. Singapore's USD Foreign Exchange Swap Market Resilience). The funding market stress subsequently eased following the extension of USD swap lines to nine additional jurisdictions including Singapore, and the establishment of the Foreign and International Monetary Authorities (FIMA) repo facility by the U.S. Federal Reserve. Since its establishment in March 2020, the MAS USD facility, which is supported by the MAS-Federal Reserve temporary swap line, has seen good take-up, with a cumulative amount of USD24.6 billion (as of May 2021). Against an uncertain backdrop and potential global market volatility, we welcome an extension of the facility from end-September to end-December 2021.

C.4 Calibrating Policies to Support the Labor Market

35. AMRO recommends that policy efforts continue to focus on minimizing scarring in the labor market. We support the authorities' multi-pronged efforts to cushion the pandemic's impact on the labor market through wage subsidies to support job retention by businesses, accelerated job creation through hiring incentives, facilitated job matching, reskilling and upskilling for displaced workers (See Selected Issue 2: Pandemic Impact, Policy Responses and the Challenges Ahead in the Labor Market). Given the disruptions to traditional businesses and accelerated structural shifts to new business models, policies that help displaced workers move to new growth areas are commendable. It is recommended that the authorities consider extending the measures to boost hiring in the private sector if the job creation momentum slows with a weaker-than-expected economic recovery. Efforts to facilitate quicker cross-sector labor mobility should continue. Further complementary efforts to redesign job functions in tandem with intensified upskilling and reskilling opportunities would also help reduce retrenchments and boost productivity.

36. Efforts to enhance the earnings and skills of lower-wage workers are commendable. AMRO supports the broadening of the progressive wage model (PWM) to an additional 80,000 local workers in the retail and food services sectors. This policy action ensures that these workers' wages will increase as they upgrade their skills and improve their productivity. AMRO also welcomes the policy intention to expand the PWM to more sectors over time to support workers and transform jobs in low-wage sectors that have been traditionally less attractive to locals. More broadly, authorities are also encouraged to consider a minimum wage scheme to complement the PWM to further enhance the wages of these workers. Amid accelerated digitization, authorities are also encouraged to enhance workers' digital skillsets. These efforts will not only enhance their employability but also promote inclusivity in the post-pandemic new normal.

37. Synergies between local and foreign workers would enhance Singapore's growth potential and boost its competitiveness. As a small and open economy with an aging workforce, the authorities have continually fine-tuned Singapore's foreign labor policy to ensure the workforce remains able – in numbers and quality – to support robust economic growth while incentivizing and facilitating further development of the local workforce. Due to the mismatch between supply and demand in high-growth sectors such as technology and finance, highly skilled foreign workers play a crucial complementary role in promoting the growth of these sectors. Low and semi-skilled foreign workers have also addressed manpower needs in local-labor constrained sectors such as construction, built environment, healthcare and cleaning. Given the complementarities between local and foreign workforces, authorities should ensure that there is sufficient supply of foreign manpower to meet demand for both skilled and unskilled workers in these sectors.

C.5 Ensuring Stability in the Property Market

38. Authorities should maintain the current tight macroprudential stance and monitor the property market situation closely. The steady rise in private property and HDB transactions and prices has been underpinned by both short-term and long-term factors. Short-term factors include the low-interest rate environment, returning residents from abroad and construction delays. Demand for housing has also been boosted by longer-term factors such as population growth, higher household formation rate and the trend towards smaller households. However, there is also uncertainty over whether short-term factors will persist, given the risks associated with a potential worsening of the pandemic situation, both in Singapore and globally. Against this backdrop, authorities should continue maintaining the current tight macroprudential stance. In AMRO's view, further tightening might be warranted in order to mitigate the risk of a sharp price correction, if prices increase at a significantly faster pace in the coming quarters. Notably, authorities should further boost housing supply through more government land sales for private residential properties and accelerate new HDB flat launches.

39. The government's review of long-term land-use plans and designs, prompted by the accelerating shift towards e-commerce and teleworking, is commendable. The government has encouraged the rejuvenation of old office buildings in the central business district into mixed-use developments that contain residences, hotels, service apartments, gyms, and eateries, among others. Amid manpower shortages and disruptions to construction activities due to the CB measures, the temporary relief measures for property developers – especially through extending the construction timeline – have enabled them to avoid penalties and complete their projects while adhering to the required safety measures. Meanwhile, supply of commercial real estate should be adjusted based on demand, which can be managed through the government land sales program. Given the changing needs and emerging trends in the commercial property sector, the government is encouraged to continuously review longer-term supply for this sector going forward.

C.6 Promoting Fintech Development and Adoption

40. AMRO supports continued developments in the area of Fintech. The Fintech sector has grown rapidly during the pandemic. In particular, there has been strong adoption of e-payments among individuals and businesses. The authorities' efforts to strengthen digital infrastructure will support closer collaborations between Fintech players and businesses, and help promote greater interoperability across platforms and countries. We commend the authorities' pioneering efforts in launching the Paynow-PromptPay linkage, which allows for real-time retail payments between Thailand and Singapore. The authorities are encouraged to leverage this initiative to explore other cross-border payment linkages to strengthen financial integration and promote financial inclusion in regional economies.

41. The introduction of digital banking will help promote greater financial inclusion and better serve customers. In 2020, MAS announced four successful digital bank applicants, comprising two digital full banks and two digital wholesale banks. These digital banks are envisaged to cater to the needs of underserved segments such as young micro-enterprises and SMEs and to provide enhanced digitized financial services for consumers. The MAS has ensured a level playing field by applying the same regulatory standards and supervisory oversight to these digital banks. AMRO supports this policy which capitalizes on the digitization trend and could demonstrate opportunities for further introduction of digital banks in regional countries.

C.7 Accelerating Structural Transformation in the Post-Pandemic New Normal

42. The ongoing review of Singapore's structural transformation plans would strengthen firms' competitiveness and workers' productivity. The refreshing of the Industry Transformation Maps (ITMs) and the recommendations from the Emerging Stronger Taskforce (EST) would help ensure that Singapore's restructuring plans are reflective of structural trends in the post-pandemic era. The sector-specific Jobs Transformation Maps would also provide greater clarity to businesses and workers in adapting to the changing work environment as a result of technology and automation trends. Additional schemes to deepen digital capabilities among SMEs would enhance productivity and create new business opportunities.

43. Given modern services' greater resilience to economic downturns and high forward linkages, policies should aim to promote growth in these areas[8]. Singapore's modern services, comprising ICT, finance and insurance, real estate and professional services, have been key growth drivers for the past two decades. The flight to digitization induced by the pandemic has also accelerated global demand for these services. Amid closer economic and financial integration in the region, greater efforts should be placed on raising

[8] The modern services sectors refer to ICT-enabled services, which include ICT, finance and insurance, and professional services sectors.

Singapore's competitiveness in these sectors in order to benefit from the rising demand for modern services, including in new growth areas such as green finance and climate change management services (See Selected Issue 3: Rise of Modern Services as A Growth Driver). Further development in modern services will also spur growth in other sectors, including manufacturing and trade-related services, given their strong forward linkages.

44. Singapore is well-positioned to benefit from the ongoing GVC reconfiguration arising from the enhancement of supply chain resilience in the region. The authorities' flexible approach in managing supply chains during the pandemic has been commendable. This will continue to enable Singapore to tap into opportunities and navigate challenges from the reconfiguration of GVCs arising from trade tensions, tech bifurcation and China's dual circulation strategy. Going forward, it is recommended that Singapore promote the following efforts to enhance supply chain resilience:

- leverage on lessons learned from successful COVID-19 containment (for example, business continuity management, effective safety management measures, hybrid work arrangements);
- strengthen supply chain resilience by diversifying sources of supply, increasing reserves, and accelerating technological adoption; and
- develop an ecosystem that can accommodate diverging technology blocs.

C.8 Strengthening Regional Integration and Sustainability

45. Singapore's commitment to openness and deepening regional integration will enhance domestic and regional economic growth. Singapore's early ratification of regional trade agreements including the Regional Comprehensive Economic Partnership (RCEP) is commendable. While benefits from tariff reduction are expected to be small, Singapore stands to gain from standardized rules of origin (ROOs), services and investment liberalization, and ease of temporary personnel movement for investment and trade activities. These agreements will also strengthen regional integration, facilitate higher intra-regional trade and investment flows, and allow greater labor mobility.

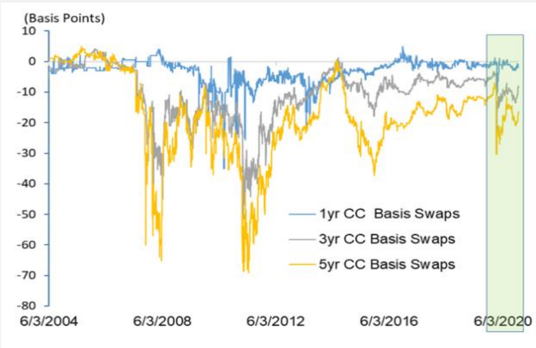
46. We welcome the authorities' efforts to support the region's climate change financing needs and the transition towards greater sustainability. As an international financial center, Singapore can play a crucial role in connecting global investors to meet the region's climate change financing needs for "climate-proof" infrastructure. Singapore's strength in insurance financing will benefit regional countries in preparing and coping with economic losses from natural disasters by supporting the formation of a Southeast Asia Disaster Risk Insurance Facility. The Green Finance Action Plan, which includes strengthening the financial sector's resilience to environmental risks, building capabilities in sustainable finance, developing a green taxonomy framework and green financial products, as well as leveraging on green Fintech, would facilitate Singapore and the region's transition towards greater sustainability.

Box B. Singapore's USD Foreign Exchange Swap Market Resilience[9]

The pandemic's impact on USD liquidity in Singapore

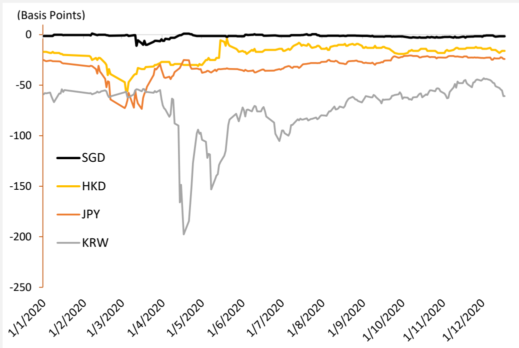
USD liquidity conditions in Singapore were temporarily affected by the global dollar liquidity shortfall in March 2020. The COVID-19 outbreak led to a spike in global financial volatility and worsening investor sentiment. Global short-term U.S. dollar funding markets tightened significantly amid risk-off sentiment, triggering a massive unwinding of risky assets and capital outflows from emerging economies. The London Interbank Offered Rate (LIBOR) - Overnight Indexed Swap (OIS) spread, which reflects banks' credit and liquidity risks, surged rapidly to 140bps from below the long-term average level of 30bps[10]. However, MAS' swift policy responses, including the rollout of the MAS USD Facility on the back of the Fed temporary swap line, helped alleviate liquidity stress and preserved banks' credit intermediation role during the pandemic.

Figure B1. Singapore's Cross-currency Basis Swaps during Stress Periods



Source: Bloomberg

Figure B2. One-year Cross-currency Basis Swaps: Comparison between Selected Economies



Source: Bloomberg

For USD FX swap, Singapore's market has been relatively resilient compared to previous stress periods and compared to other Asian FX centers. As U.S. dollar liquidity stress also temporarily impacted Singapore's funding market in March 2020, the cross-currency basis swap spread widened. This wider negative spread implies an increasing premium for borrowing USD in the FX swap market. Nonetheless, compared to past dollar stress periods[11], the impact on the basis swap was relatively small (Figure B1). Furthermore, compared to other advanced economies' cross-currency swap basis against the USD, such as the EUR, HKD, JPY, and KRW, the SGD swap basis returned to the pre-stress level more quickly. This demonstrates that the cross-currency basis swap market in Singapore has been resilient (Figure B2).

Factors behind Singapore's FX swap market resilience

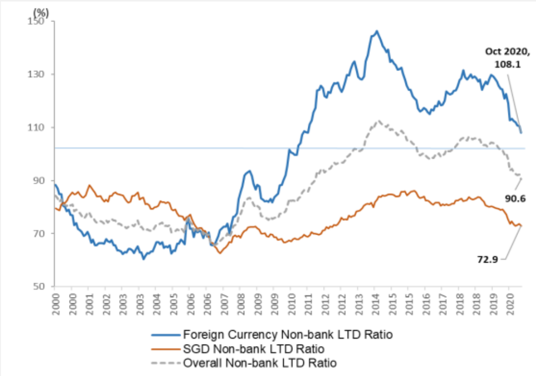
There are a number of factors that support favorable U.S. dollar liquidity conditions and the relatively robust FX swap market in Singapore:

First, Singapore banks' USD demand in the FX swap market is relatively balanced. Singapore banks' foreign currency (FCY) loan-to-deposit (LTD) ratio declined from its peak of 146.4 percent in May 2014 to 108.1 percent in October 2020 due to high deposit growth and a contraction in loans[12]. Specifically, local banks' USD LTD ratio remained low at 69 percent in Oct 2020 (Figure B3). Additionally, Singapore's domestic banks' U.S. dollar demand is relatively balanced as currency hedging demand is modest because the USD/SGD exchange rate is relatively stable on the back of

[9] Prepared by Yang Yang-Hyeon.
[10] The market volatility index rose sharply in early March 2020 due to the onset of COVID-19 to a level similar to the peak observed during the global financial crisis (GFC). While the LIBOR-OIS spread rose to around 140 bps, it was still lower than the 350 bps spread registered during the GFC.
[11] Dollar liquidity stress periods, which normally overlap with financial stress periods, include the GFC (2008), Euro crisis (2012), taper tantrum (2013), and China–led market distress (2015).
[12] A surge in deposits was driven by increased liquidity in financial markets amid global central banks' monetary easing. In addition, higher uncertainties over the past years have also led to higher precautionary savings among private corporates (MAS Financial Stability Review, Dec 2020).

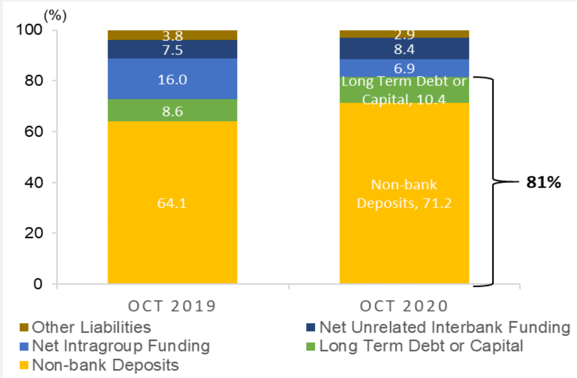
managed floating exchange rate system[13]. In the case of the JPY and KRW, local institutional investors' currency hedging demand is very high as they invest significantly in overseas securities. Very high levels of hedging activity by institutional investors, such as insurance companies and pension funds, have led to strong U.S. dollar demand and FX swap market imbalances as reflected by the deep negative currency swap basis in these countries. Singapore's domestic banks have not had big mismatches of FCY assets and liabilities, or short-term versus long-term positions to start with. This means the need for cross-border funding has not been as high as in those other markets. In addition, most MNCs rely on foreign banks, rather than domestic banks, to fund their capacity expansion[14].

Figure B3. Banking System's Loan-to-Deposit Ratios



Source: Monetary Authority of Singapore

Figure B4. Funding Structure of Foreign Banks in Singapore



Source: Monetary Authority of Singapore

Second, foreign banks' funding structures have been stable. Singapore's USD FX swap market is dominated by banks, with European and U.S. banks as major USD providers. Around 80 percent of funding is from stable non-bank deposits and long-term debt. Seven percent of the funding is relatively stable in the form of net intragroup funding from banks' head offices, while net unrelated interbank funding, which is a less stable type of funding, contributes less than 10 percent (Figure B4)[15]. In particular, European, U.S. and Japanese banks in Singapore are generally supported by funding from their headquarters, which have an unlimited U.S. dollar supply—if required—given that the U.S. Fed has unlimited standing currency swap lines with the ECB and the BOJ. Many corporates' headquarters and treasury functions have shifted to Singapore over the past 10 years, adding USD deposits in Singapore's banking system and contributing positively to U.S. dollar liquidity conditions in Singapore[16].

Third, the MAS' injection of USD, through the MAS USD Facility, has provided an important backstop for USD funding needs and boosted market confidence. The MAS-Fed USD60 billion swap line, announced in March 2020 and subsequently extended to end-December 2021[17], has boosted market confidence and stabilized U.S. dollar funding and supported lending to businesses. USD24.6 billion has been used from this facility as of May 2021 to support the USD funding needs of banks' customers in Singapore and the region (Figure B5). The establishment of the Temporary Foreign and International Monetary Authorities Repo Facility by the Fed has also eased stress in the USD funding market.

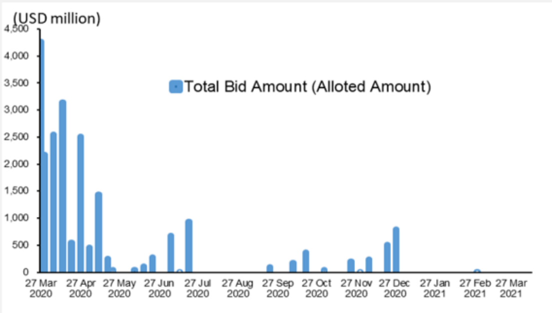
Fourth, authorities have provided USD liquidity through the FX swap market. Singapore's forex reserves climbed to USD398.1 billion as of May 2021, an increase of USD119.5 billion from January

[13] The MAS manages the SGD against a trade-weighted basket of currencies within an adjustable band, and executes monetary policy through the adjustment of the slope, mid-point and width of the SGD nominal effective exchange rate (NEER) policy band.
[14] The investing MNCs are mostly exporters or regional headquarters. Funding in USD or other major FCY will be a natural hedge against their export proceeds. Therefore, MNCs may not need significant funding from local banks, at least in the initial investment phase (Maybank, February 2020).
[15] MAS Financial Stability Review (December 2020).
[16] For example, banks' USD trading market in Asia is split between Hong Kong and Singapore. Over the years, equity and dollar credit have been concentrated in Hong Kong, and FX and local currency operations in Singapore. Financial institutions have continued to shift their USD liquidity desks to Singapore in recent times.
[17] The Fed announced the extension of its temporary USD liquidity swap lines with nine central banks, including Singapore's (16 June 2021).

2020, on the back of large capital inflows into banks' deposits and corresponding MAS intervention (Figure B6). FX swaps comprise about one third of the MAS' money market operations to manage banking system liquidity. Specifically, at the onset of the global rush for USD, the MAS increased its daily USD provision to the banking system by up to USD1 billion in excess of the usual provision. This pre-emptive provision of USD liquidity helped boost market confidence by signaling that MAS was ready to intervene further if necessary.

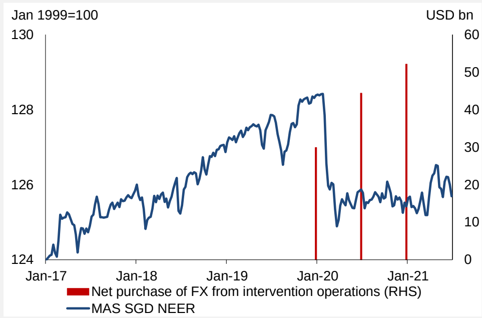
Lastly, Singapore's FX swap market continues to grow and deepen. Singapore's FX and over-the-counter (OTC) derivatives market has continued to grow robustly over the years. The country's average daily FX trading volume reached USD638.4 billion in March 2021, ranking third in global FX volumes[18]. FX swaps accounted for over half of the average daily turnover. Global and regional FX swap players continue to expand their trading in Singapore. The growth in Singapore's FX swap market has been broad-based across G10 and emerging market currencies, reflecting Singapore's standing as a well-diversified international financial center. This contributes to ample liquidity and enhances price discovery in the market.

Figure B5. MAS USD Facility



Source: Monetary Authority of Singapore

Figure B6. FX Market Intervention



Source: Monetary Authority of Singapore

Policy implications

Going forward, the authorities should ensure that Singapore banks continue to manage their FCY risk prudently and strengthen USD liquidity contingency plans. While the aforementioned factors have enabled Singapore FX swap market to function well and remain resilient, local and regional banks still depend on Singapore's FX swap market to overcome USD funding shortages, particularly during crisis periods. Easy access to USD funding is important in maintaining Singapore's status as an international financial center. The eventual normalization of monetary policy in major advanced economies could lead to tighter dollar liquidity conditions and heightened uncertainties. Therefore, the recent extension of MAS-Fed swap line until December 2021 is a welcome policy move. It is also essential that banks manage FCY risk prudently by developing liquidity contingency plans.

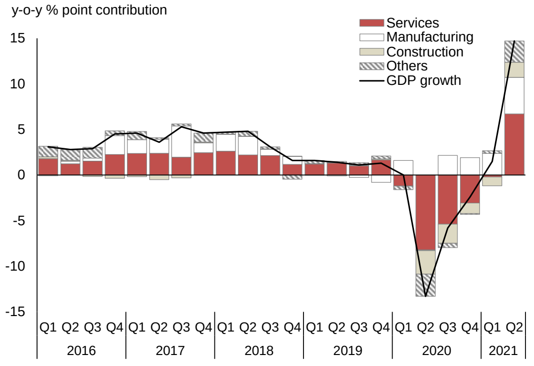
[18] According to the 2019 BIS Triennial Central Bank Survey of the global FX and OTC derivatives market, Singapore retained its position as one of the largest FX centers globally – ranked third with a 7.6 percent share of global FX volume in April 2019. Average daily volumes reached a new high of USD633 billion in April 2019, up 22 percent from USD517 billion in April 2016.

Appendices

Appendix 1. Selected Figures for Major Economic Indicators

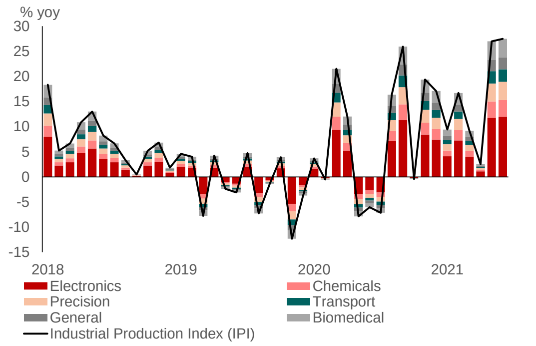
Figure 1.1. Real Sector

Singapore's economy contracted sharply in 2020 due to a sharp fall in services and construction while the manufacturing sector expanded.



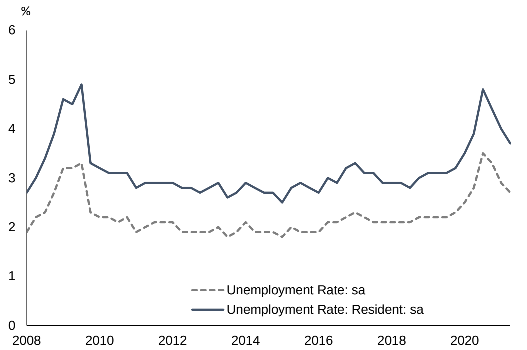
Source: Singapore Department of Statistics

Manufacturing output rose across most industry clusters, particularly electronics.



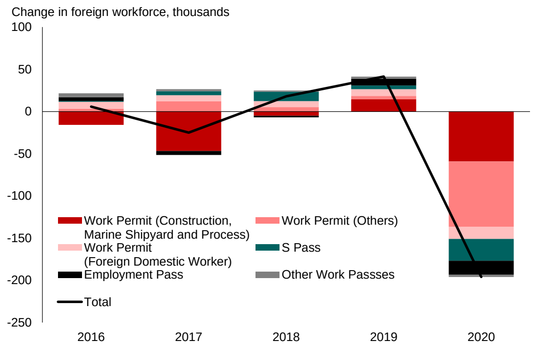
Source: Economic Development Board

The unemployment rate rose, peaking in Q3 2020 before decreasing thereafter into H1 2021.



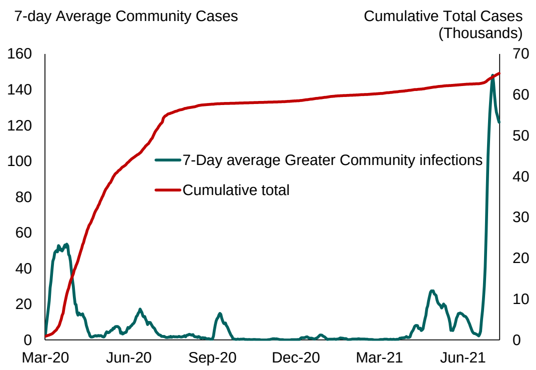
Source: Ministry of Manpower

Non-resident employment declined at a record pace, especially among work permit holders.



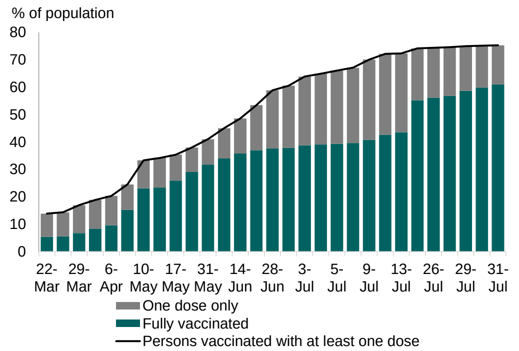
Source: Ministry of Manpower

The number of community cases has spiked due to the more transmissible Delta variant.



Source: Ministry of Health

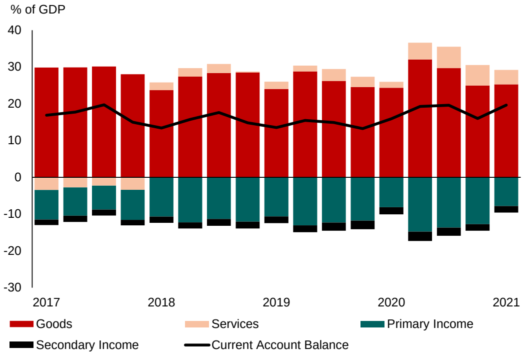
The rollout of vaccinations continued to be steady.



Source: Ministry of Health

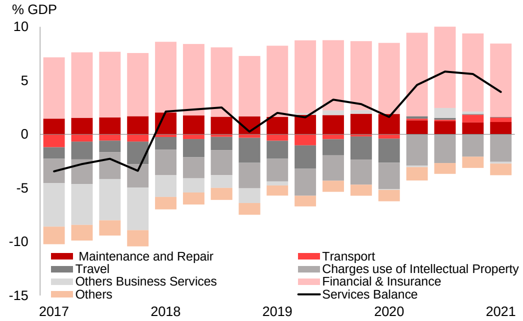
Figure 1.2. External Sector

The current account surpluses improved further due to the higher services balance and narrower primary income deficit in 2020.



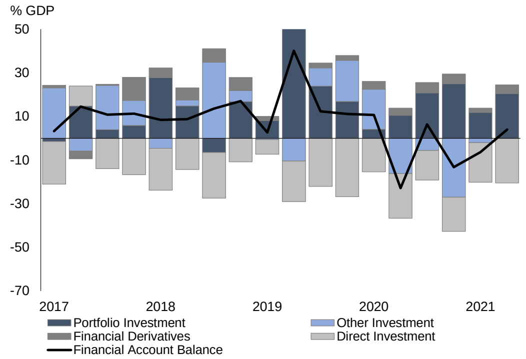
Source: Singapore Department of Statistics

The services trade balance rose in 2020 mainly due to the contraction of travel and transport services imports which exceeded the decline in exports.



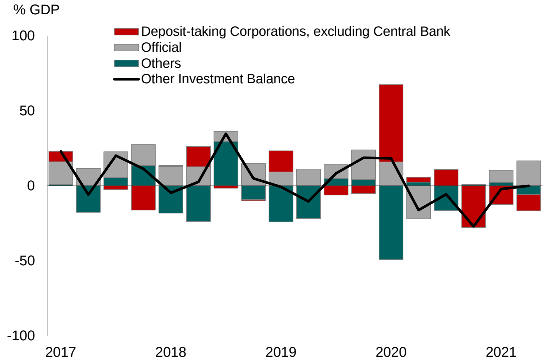
Source: Singapore Department of Statistics

The financial account registered large net inflows due to net inflows in “other investment” during the pandemic.



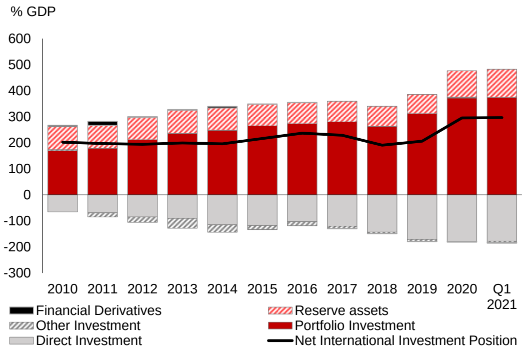
Source: Singapore Department of Statistics
Note: A decrease in assets and liabilities, and net inflows in net balances, are indicated by a minus (-) sign.

The large net outflows from resident deposit-taking corporations in Q1 2020 have eased in subsequent quarters.



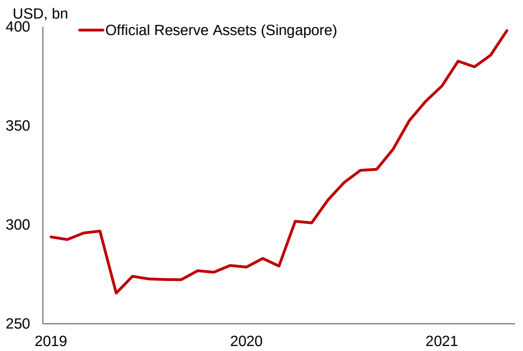
Source: Singapore Department of Statistics
Note: A decrease in assets and liabilities, and net inflows in net balances, are indicated by a minus (-) sign.

The net international investment position strengthened substantially during the pandemic.



Source: Singapore Department of Statistics

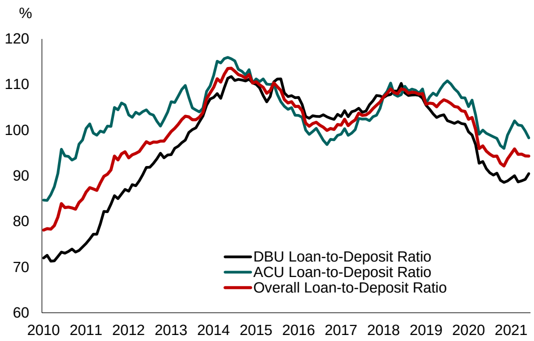
Likewise, gross official reserves have increased significantly.



Source: Monetary Authority of Singapore

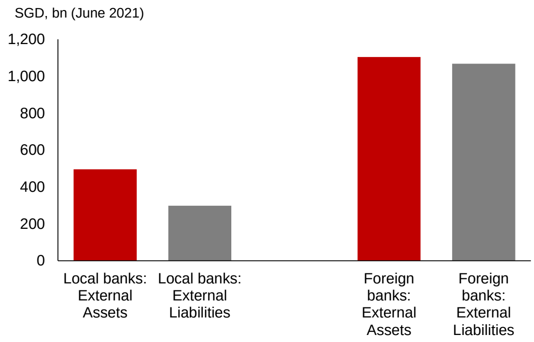
Figure 1.3. Monetary and Financial Sector

The non-bank loan-to-deposit ratios declined in 2020 due to the increases in DBU and ACU deposits.



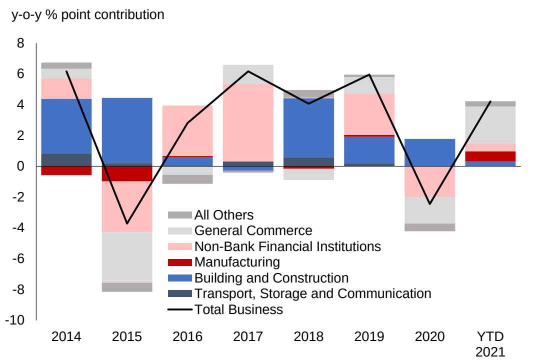
Source: Monetary Authority of Singapore

Local and foreign banks' external liabilities are matched by their external assets.



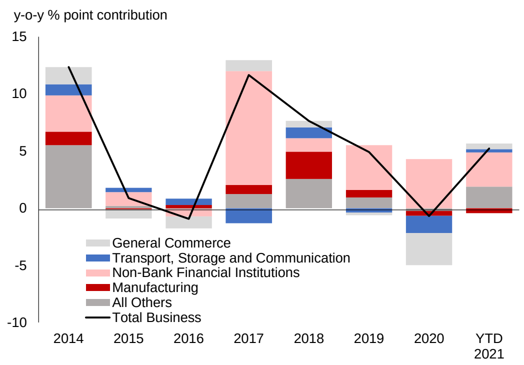
Source: Monetary Authority of Singapore

DBU business lending declined sharply in 2020, mainly to general commerce and non-financial institutions, but has improved in 1H 2021.



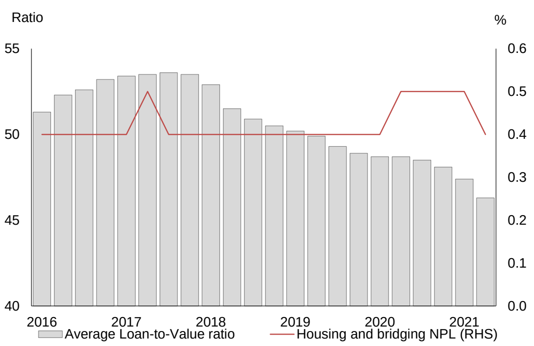
Source: Monetary Authority of Singapore

Although overall ACU business lending growth contracted slightly in 2020, lending to non-bank financial institutions has grown and remained steady in 2021.



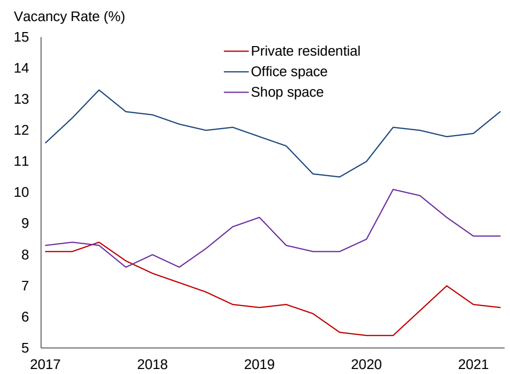
Source: Monetary Authority of Singapore

The average loan-to-value ratio for mortgage loans has continued to decline, and the housing and bridging NPL ratio remains low.



Source: Monetary Authority of Singapore

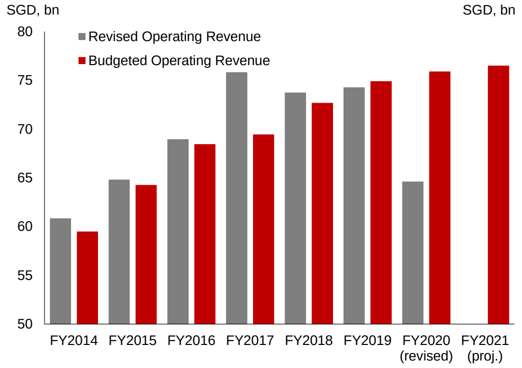
The private residential and shop vacancy rates rose in 2020 but have declined in 2021.



Source: Urban Redevelopment Authority

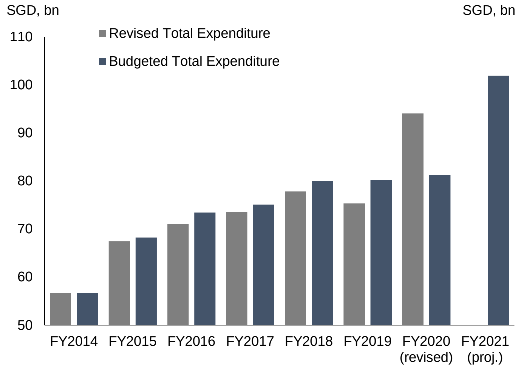
Figure 1.4. Fiscal Sector[19]

Operating revenue in FY2020 was revised downward significantly because of the pandemic, but is budgeted to increase in FY2021.



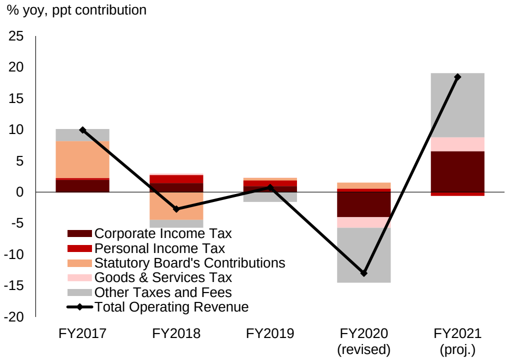
Source: Ministry of Finance

Total expenditure in FY2020 was higher than budgeted, and is projected to rise further in FY2021.



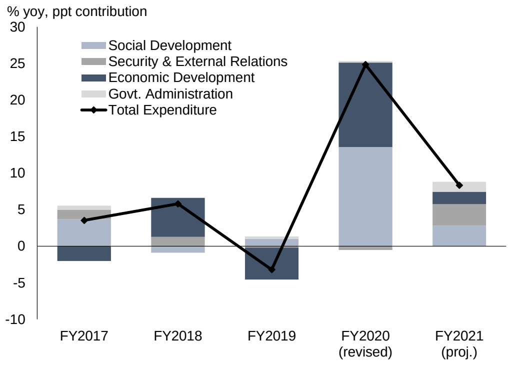
Source: Ministry of Finance

Operating revenue is projected to recover due to higher Other Taxes and Fees, and corporate income tax collection, on the back of the economic recovery.



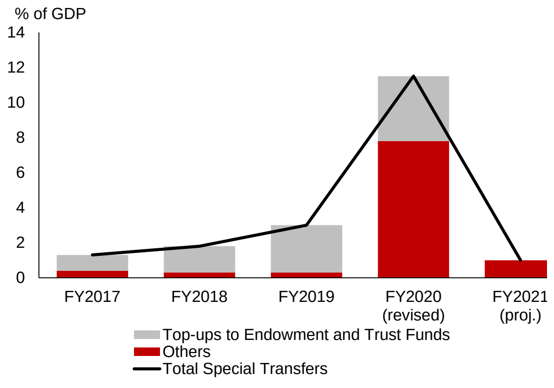
Source: Ministry of Finance
Note: Other Taxes refer to Withholding Tax, Statutory Board's Contributions, Asset Taxes, Customs and Excise Taxes, Betting Taxes, Stamp Duty, Other Taxes, and Other Fees and Charges and Others.

Fiscal expenditures are rising across all sectors.



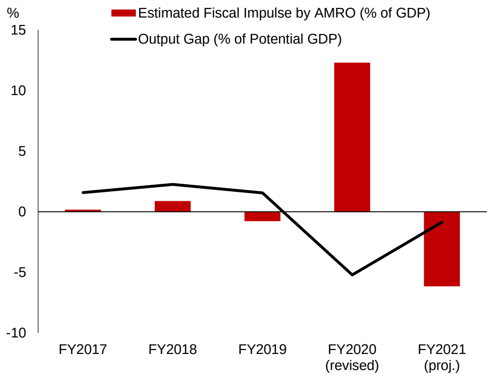
Source: Ministry of Finance

Special Transfers rose significantly in FY2020.



Source: Ministry of Finance

The fiscal impulse, which was considerable in FY2020, is expected to turn negative in FY2021.



Source: Ministry of Finance

[19] Based on data available in the FY2021 Budget as of 16 February 2021.

Appendix 2. Selected Economic Indicators for Singapore

	2017	2018	2019	2020	Projection	
					2021	2022
Real sector	(in annual percentage change, unless otherwise indicated)					
Real GDP	4.5	3.5	1.3	-5.4	6.5	4.0
Private consumption	3.1	4.0	3.3	-14.1	5.6	4.5
Government consumption	3.1	3.2	3.4	12.6	3.7	-0.3
Gross fixed capital formation	5.4	-4.3	1.2	-13.7	8.4	5.7
Exports of goods & services	7.1	7.7	0.1	-4.3	6.4	3.2
Imports of goods & services	7.8	7.5	0.2	-7.1	6.2	3.2
MAS Core Inflation	1.5	1.7	1.0	-0.2	0.6	1.4
Headline inflation	0.6	0.4	0.6	-0.2	1.6	1.3
Overall unemployment rate, annual average	2.2	2.1	2.2	3.0	2.5	2.3
External sector	(in percent of GDP, unless otherwise indicated)					
Current account	17.3	15.4	14.3	17.6	18.7	18.6
Goods balance	29.4	27.0	25.9	27.5	27.6	27.1
Capital and financial account balance	10.0	12.1	16.5	-4.2	11.3	9.6
Direct investment (net)	-10.5	-16.2	-18.7	-16.2	-12.4	-12.7
Portfolio investment (net)	5.7	13.0	28.4	15.1	13.6	12.4
Other investment (net)	12.3	9.7	4.2	-7.2	6.5	6.2
Derivatives (net)	2.4	5.6	2.5	4.1	3.5	3.7
Errors and omission	0.7	0.0	0.0	0.2	0.0	0.0
Overall Balance of Payments	8.0	3.3	-2.2	22.0	7.4	9.1
Net Investment International Position	227.5	188.1	205.0	295.0	-	-
International Reserves (USD bn, end period)	279.9	287.7	279.5	362.3	-	-
Fiscal Sector	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022*
Operating Revenue (% GDP)	15.8	14.4	14.6	13.9	15.2	15.3
Total Expenditure (% GDP)	15.3	15.2	14.8	20.2	20.2	18.7
Primary Budget Balance (% GDP)	0.5	-0.8	-0.2	-6.3	-5.1	-3.5
Special Transfers (% GDP)	1.3	1.8	3.0	11.4	1.0	0.9
Net Investment Returns Contribution (% GDP)	3.1	3.2	3.3	3.9	3.9	3.9
Overall Budget Balance (% GDP)	2.3	0.7	0.2	-13.9	-2.2	-0.5
Monetary	(in annual percentage change, unless otherwise specified)					
3-month SGD SIBOR (% end period)	1.50	1.89	1.77	0.41	-	-
Broad Money, M2 (DBU and ACU)	4.2	5.1	4.4	10.7	-	-
Narrow Money, M1 (DBU and ACU)	7.1	-1.4	5.0	33.7	-	-
DBU Loans and Advances to Non-Bank (including Trade Bills)	5.6	3.0	3.1	-2.0		
ACU Loans and Advances to Non-Bank (including Trade Bills)	10.8	7.7	5.5	-0.4	-	-
Memorandum Items						
Straits Times Index (end period)	3403	3069	3223	2844	-	-
Nominal GDP (SGD, bn)	474.1	507.1	510.7	469.1	-	-
Nominal GDP (USD, bn)	343.4	375.9	374.4	340.1	-	-
Private Residential Property Index (2009Q1=100)	138.7	149.6	153.6	157.0	-	-
Exchange rate (in SGD/USD, period average)	1.3807	1.3491	1.3642	1.3792	-	-
Government debt (% GDP)	105.9	107.8	125.5	150.2	-	-

* Fiscal Sector figures for FY2022 reflect AMRO staff calculations.
Source: Singapore authorities; CEIC; AMRO staff calculations

Appendix 3. Balance of Payments and International Investment Position

	2017	2018	2019	2020	2021 Q1
	(In percent of GDP, unless otherwise indicated)				
Current Account	17.3	15.4	14.3	17.6	19.4
Goods Balance	29.4	27.0	25.9	27.5	24.7
Exports	121.3	122.1	117.9	121.1	122.4
Imports	91.9	95.1	92.0	93.5	97.7
Services Balance	-3.0	1.8	2.4	4.4	4.1
Exports	49.8	55.0	58.0	55.2	51.1
Imports	52.8	53.2	55.6	50.8	47.0
Primary Income Balance	-7.6	-11.6	-11.9	-12.2	-7.5
Secondary Income Balance	-1.6	-1.8	-2.1	-2.1	-1.8
Capital and Financial Account	10.0	12.1	16.5	-4.2	-6.4
Direct Investment	-10.5	-16.2	-18.7	-16.2	-18.1
Assets	18.9	5.9	13.5	9.5	13.0
Liabilities	29.4	22.1	32.2	25.7	31.2
Portfolio Investment	5.7	13.0	28.4	15.1	11.9
Assets	12.0	9.3	29.6	15.1	11.7
Liabilities	6.3	-3.7	1.1	-0.1	-0.1
Other Investments	12.3	9.7	4.2	-7.2	-2.0
Assets	21.8	29.5	15.5	20.2	13.3
Liabilities	9.5	19.8	11.2	27.4	15.4
Financial Derivatives	2.4	5.6	2.5	4.1	2.0
Overall Balance	**8.0**	**3.3**	**-2.2**	**22.0**	**25.6**
Net International Investment Position (SGD bn, end period)	1,078.4	954.1	1,047.0	1,383.7	1,394.5
External Assets	5,076.2	5,214.3	5,615.7	6,118.4	6,248.4
External Liabilities	3,997.8	4,260.1	4,568.6	4,734.7	4,853.9

Source: Singapore authorities; CEIC; AMRO staff calculations

Appendix 4. Government Accounts

	FY2017	FY2018	FY2019	FY2020	FY2021[1]
	(In billions of SGD otherwise indicated)				
Operating Revenue	**75.8**	**73.7**	**74.3**	**64.6**	**76.6**
% of GDP	15.8	14.4	14.6	13.7	15.2
% yoy	9.9	-2.7	0.7	-13.0	18.4
Tax Revenue	**66.4**	**66.2**	**67.6**	**58.6**	**70.0**
Income Tax	27.2	29.3	30.7	28.1	32.0
Corporate Income Tax	14.9	16.0	16.7	13.7	18.0
Personal Income Tax	10.7	11.7	12.4	12.8	12.4
Withholding Tax	1.5	1.6	1.6	1.5	1.6
Statutory Boards' Contributions	4.9	1.5	1.8	2.5	2.5
Assets Taxes	4.4	4.6	4.8	3.1	4.7
Customs, Excise and Carbon Taxes	3.1	3.1	3.3	3.5	3.8
Goods and Services Tax	11.0	11.1	11.2	9.9	11.3
Motor Vehicle Taxes	2.2	2.6	2.4	2.2	2.5
Betting Taxes	2.7	2.7	2.6	1.8	2.4
Stamp Duty	4.9	4.6	4.2	3.7	4.3
Other Taxes	6.0	6.6	6.7	3.8	6.4
Fees and Charges	**9.1**	**7.1**	**6.3**	**5.6**	**6.2**
Vehicle Quota Premiums	5.8	3.6	2.9	2.3	2.3
Other Fees and Charges	3.3	3.5	3.4	3.3	3.9
Other Receipts	**0.4**	**0.4**	**0.4**	**0.4**	**0.5**
Total Expenditure [2]	**73.6**	**77.8**	**75.3**	**94.1**	**102.3**
% GDP	15.3	15.2	14.8	20.0	20.2
% yoy	3.5	5.8	-3.2	24.8	8.3
Social Development	36.5	35.8	36.6	46.8	49.5
Security and External Relations	20.5	21.4	21.3	20.9	23.7
Economic Development	13.9	17.8	14.4	23.1	24.7
Government Administration	2.8	2.8	3.1	3.3	4.5
Primary Surplus/Deficit	**2.3**	**-4.1**	**-1.1**	**-29.4**	**-25.4**
% of GDP	0.5	-0.8	-0.2	-6.3	-5.1
Less: Special Transfers Excluding Top-ups to Endowment and Trust Funds [3]	**2.1**	**1.7**	**1.6**	**36.3**	**4.9**
Basic Surplus / Deficit	**0.1**	**-5.8**	**-2.6**	**-65.7**	**-31.2**
Less: Top-ups to Endowment and Trust Funds [4]	**4.0**	**7.3**	**13.6**	**17.3**	**0.0**
Add: Net Investment Returns Contribution [5]	**14.7**	**16.4**	**17.0**	**18.1**	**19.6**
Overall Budget Surplus / Deficit	**10.9**	**3.3**	**0.8**	**-64.9**	**-11.0**
% GDP	2.3	0.7	0.2	-13.8	-2.2

Source: Ministry of Finance
Notes:
[1] Based on the 2021 Budget as of February 2021.
[2] Total Expenditure consists of operating expenditure and development expenditure.
[3] Refers to discretionary transfers made by the government and these include one-off direct transfers to businesses and households.
[4] The government endowment fund is a fund established with an injection of government monies as principal, for which only the income earned will be used to finance specific programs on an ongoing basis. Examples include the Community Care Endowment Fund and Edusave Endowment Fund. The government trust fund is a fund established with an injection of government monies as principal, for which both the principal and income earned on the principal could be drawn down to finance specific programs on an ongoing basis. Examples include the National Research Fund and the GST Voucher Fund.
[5] Contributions from investment returns on Singapore's reserves, where Net Investment Returns Contributions are the sum of: (1) up to 50 percent of the expected long-term real returns on relevant assets specified in the Constitution; and (2) up to 50 percent of the Net Investment Income on remaining assets. Through NIR contributions that supplement the annual budget, Singaporeans benefit from the investments of MAS, GIC, and Temasek.

Appendix 5. Data Adequacy for Surveillance Purposes: a Preliminary Assessment

Criteria/ Key Indicators for Surveillance	Availability[1]	Reporting Frequency/ Timeliness[2]	Data Quality[3]	Consistency[4]	Others, if Any[5]
National Accounts	Available	Quarterly, no later than eight weeks after the end of the reference quarter for the "Preliminary Estimates"	-	-	-
Balance of Payments (BOP)	Available	Quarterly, no later than eight weeks after the end of the reference quarter	-	-	-
International Investment Position (IIP)	Available	Quarterly, no later than three months after the end of the reference quarter	-	-	-
External Debt	Available	Quarterly, no later than three months after the end of the reference quarter	-	-	-
State Budget and Government	Available	Central government revenue (monthly, within two months of the end of the reference period) Central government expenditure (quarterly, within two months of the end of the reference period)	-	-	-
Money Supply and Credit Growth	Available	Monthly, within one month of the end of the reference period	-	-	-
Financial Sector Soundness Indicators	Available	Quarterly, within six months	-	-	-
State-owned Enterprises Statistics[6]	Available if publicly listed on the stock exchange, otherwise limited	Quarterly data available for listed companies within two months of the reference quarter, but not available for non-listed companies	-	-	-
Housing Market Indicators	Available	Quarterly, within two months of the end of the reference quarter (for preliminary data)	-	-	-

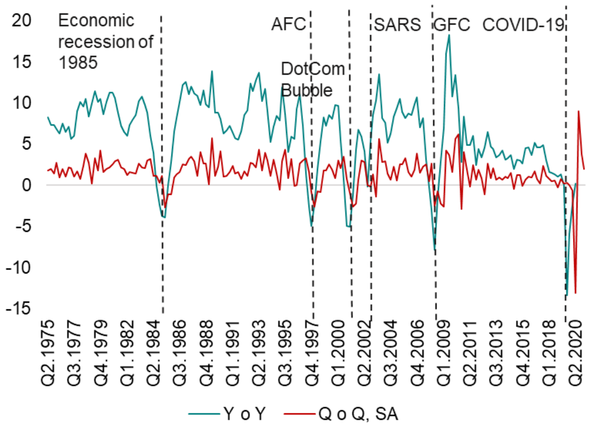
Source: AMRO staff compilation. This preliminary assessment will form the "Supplementary Data Adequacy Assessment" in the EPRD Matrix.
Notes:
[1] Data availability refers to whether the official data are available for public access by any means.
[2] Reporting frequency refers to the periodicity that the available data are published. Timeliness refers to how up-to-date the published data are relatively with the publication date.
[3] Data quality refers to the accuracy and reliability of the available data given the data methodologies are taken into account
[4] Consistency refers to both internal consistency within the data series itself and its horizontal consistency with other data series of either the same or different categories.
[5] Other criteria might also apply, if relevant. Examples include but are not limited to potential areas of improvement for data adequacy.
[6] This refers to government-linked companies, not SOEs.

Annexes: Selected Issues

1. Singapore's Fiscal Response to COVID-19 Crisis: Achievements and Takeaways for the Future[20]

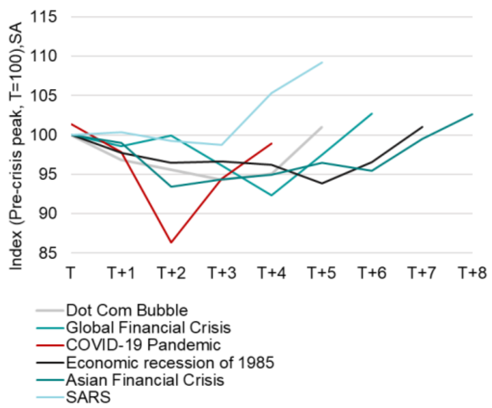
1. The COVID-19 crisis has had a deeper economic impact than all previous crises since 1985 (Figure A1.1). The COVID-19 crisis led to the fastest and deepest economic contraction, with quarterly GDP falling by almost 15 percent from pre-crisis levels in Q2 2020 (Figure A1.2). On the flip side, the recovery has also been very swift, with quarterly GDP rebounding to 2 percent below the pre-crisis level by Q4 2020. Nevertheless, how long the crisis will continue is highly uncertain, given numerous downside risks highlighted in Section B. Much hinges on the progress of the vaccination programs in Singapore and the regional economies as well as how quickly and effectively the pandemic is brought under control globally.

Figure A1.1. GDP Growth in Percent



Source: Haver; AMRO staff calculation

Figure A1.2. Quarterly GDP Path Per Crisis (T=Pre-crisis GDP Level)



Source: Haver; AMRO staff calculations
Note: T is the index quarter prior to the crisis. Each T interval is 1 quarter.

A. Size and Characteristics of Policy Support

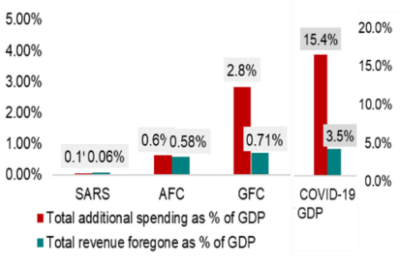
2. Singapore's COVID-19 fiscal support package is among the largest in the ASEAN+3 region. The five packages, worth nearly SGD100 billion or 20.6 percent of GDP, include budget and non-budget spending and foregone revenues (Figure A1.3). In comparison to other ASEAN+3 economies, Singapore had the second largest fiscal stimulus packages (20.1 percent of GDP) after Japan (54.8 percent of GDP). The comparison of the stimulus derived from the budget items (proxied by the change in budget position from 2019 to 2020 as a share of GDP in Figure A1.4 reveals that Singapore's stimulus composition was similar to that of advanced, high-income economies such as Japan, Hong Kong, Korea and Malaysia, with expenditure increase making up the majority of the overall budgetary increase[21].

3. Singapore's large fiscal reserves have been a crucial enabler for the strong fiscal stimulus. Based on AMRO's calculation, the Singapore government's net asset position is strong at about 132 percent of GDP[22]. With the President's special approval, an unprecedented amount of SGD52 billion, worth 11.1 percent of GDP, was tapped in 2020.

[20] Prepared by Madeleine D. Vinuya.
[21] Foregone revenues in Figure A1.4 could include revenue decline due to reduction in output.
[22] The net assets are calculated based on AMRO's assumptions about the stated assets of the government and adjustments given amount of government securities.

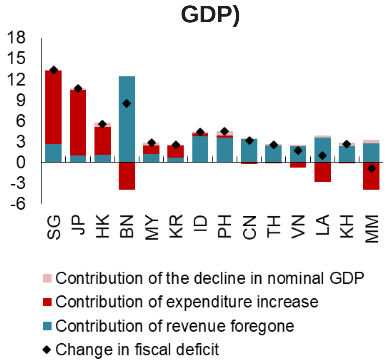
This has allowed the government to fund strong crisis response and recovery programs, and provided room for reinforcements should the pandemic situation worsen.

Figure A1.3. Singapore's Fiscal Packages



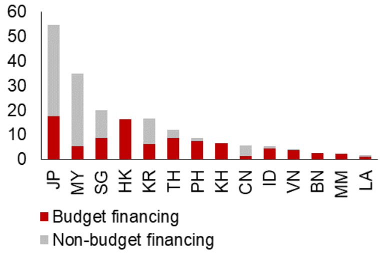
Source: Haver Analytics, Authorities' data; AMRO staff calculations
Note: COVID-19 total foregone revenue and spending as a % of GDP is scaled on the right-hand side.

Figure A1.4. Decomposition of Change in Budget Position Between 019 and 2020 (% of GDP)



Source: Haver Analytics; Authorities' data; AMRO staff calculations.
Note: Budget figures are taken from authority numbers and assumptions by AMRO staff.

Figure A1.5. Total Fiscal Stimulus by Budget and Non-budget Financing in 2020 (% of GDP)



Source: Authorities' data; AMRO staff calculations

4. The types and sequencing of fiscal support measures have taken into account the nature of the health crisis and lessons learned from the past (Table A1.1). The earliest form of fiscal assistance was in the form of measures to contain and prevent the spread of COVID-19, strengthen healthcare capacity and support healthcare personnel. As has been the case with Singapore's fiscal strategy in past crises, fiscal support measures that provide buffers against income shocks experienced by households, support employment and mitigate financial stress on businesses, have been key.

- When the pandemic struck, the government quickly provided subsidies[23] to help vulnerable households.

- Targeted employment- and wage support schemes such as the Jobs Support Scheme (JSS), Foreign Worker Levy Rebates & Waivers and Jobs Growth Incentive (JGI) were deployed early to minimize job losses. A tiered system was implemented for the JSS to provide greater support for the sectors that were hit harder[24]. SG United Jobs and Skills Packages were also used to improve the employability of displaced workers and new job market entrants.

- Financial strains on business have been mitigated by measures to help defray costs through wage support schemes, rebates and waivers for foreign worker levies, and credit risk sharing and guarantees to help sustain credit flows to corporates.[25] Rather than reducing the employers' Central Provident Fund (CPF) contribution rate, the government opted for direct wage support. The reasoning was that a contribution rate cut alone might not be highly effective in reducing business costs, and could also permanently reduce workers' retirement savings. A direct wage support approach would subsidize incomes while also helping to preserve long-term retirement savings.[26]

[23] Subsidies to households include the Care and Support Package (CSP) (including Workfare Special Payment (WSP), grocery vouchers (GV)), Temporary Relief Fund (TRF) to support retrenched workers, COVID-19 Support Grant (CSG) for income shocks to lower- to middle-income households, and the Self-employed Person Income Relief Scheme (SIRS).`
[24] The tiered support system is based on the expected recovery prospects of the different economic sectors. For sectors that have been slower to recover, more targeted measures and extensions have been provided after December 2020.
[25] These measures were taken in addition to the debt relief, credit support and bank regulatory easing measures by the MAS to help corporates in difficulties.
[26] Reductions in CPF contribution rates would also not have been helpful for individuals who had lost their jobs.

- Unlike stimulus packages during non-health crisis periods in the past, public infrastructure spending was not a component of this year's and last year's package. This was due to the need for social distancing measures, creating stiff challenges for carrying out infrastructure projects. Tight supply of labour in the construction sector as a result of the lockdown of the dormitories following the outbreak of infections among the foreign workers in 2020, and border closure measures were also a factor.

Table A1.1. Comparison of Fiscal Packages Across Crisis Periods

Problem to address	*Policy intention*	1985 Crisis	AFC	Dot.com bubble	SARS	GFC	COVID-19
Health crisis	Strengthen public health capacity				✓		✓
	Support frontliners				✓		✓
	Make premiums affordable				✓		✓
Income shock to households	Support vulnerable households	✓	✓	✓	✓	✓	✓
	Maintain employment and strengthen workers' skills	✓	✓	✓	✓	✓	✓
Business distress	Reduce business costs	✓	✓	✓	✓	✓	✓
	Credit risk sharing and guarantees				✓		✓
	CPF rate cuts	✓	✓				
	Public infrastructure investment	✓	✓	✓		✓	
Decline in investments	Incentives for private investment	✓				✓	✓
Contagion	Boost confidence in the banking system through deposit guarantees and bridging loan programs					✓	
Asset bubble	Stabilize property markets		✓				

Source: AMRO, "ASEAN+3 and COVID-19: Panoply of Fiscal and Monetary Policies", 2020; Lee Kuan Yew School of Public Policy, "Singapore's Approach to Managing Economic Crises", 2018.

B. Policy Results

5. The stimulus packages have mitigated the contraction of economic output, employment, and household income[27].

- **Challenges to business operations and continuity were mitigated by a wide range of fiscal measures.** In particular, the JSS, rental reliefs and waivers, deferment of corporate income tax payments, and rebates granted for foreign worker levies, non-residential property tax and corporate income tax, crucially offset the impact of income shocks on businesses—especially SMEs—and averted mass bankruptcies during the Circuit Breaker. Grants helped businesses digitalize and accelerate e-commerce adoption, allowing firms to operate at lower costs.

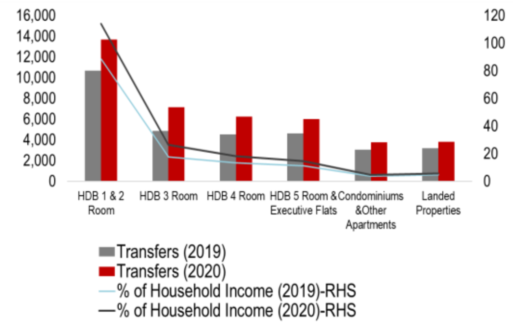
- **The strong and swift job support measures averted a sharp rise in unemployment[28].** Resident unemployment rates did not increase to the level seen during the SARS crisis. Skills training support, such as Skills Future and Workforce Singapore, also helped workers adapt and upgrade their skills. On the other hand, the JGI scheme helped move a number of displaced workers to new growth areas (see

[27] MAS estimated that the impact of fiscal policy support on real GDP was 5.6 percentage points for 2020, and even higher at 6.4 percentage points for 2021 due to lagged effects.
[28] According to the MAS' assessment, the fiscal measures helped curtail the unemployment increase by 1.7 percentage points in 2020, with about half attributed to the JSS.

Selected Issue 2: Pandemic Impact, Policy Responses and the Challenges Ahead in the Labor Market). Such measures reduced the scarring in the labor market substantially.

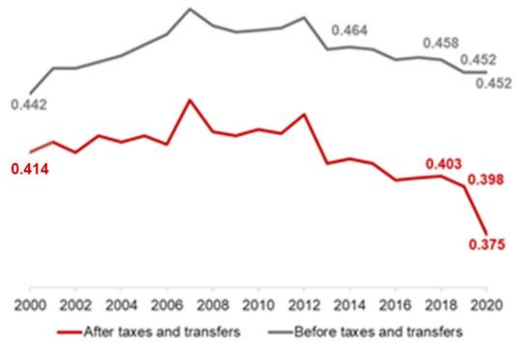
- **Significant support to lowest income households cushioned their income and helped maintain their spending to a significant degree**. Government transfers to lower income households, typically residing in smaller Housing and Development Board (HDB) 1-2 room flats, increased significantly to 114.0 percent of household income in 2020 from 88.6 percent in 2019 (Figure A1.6). The significant increase in transfers was also reflected in the sizable drop of the Gini coefficient that incorporates taxes and transfers from the government in 2020 (Figure A1.7).

Figure A1.6. Average Annual Government Transfers Per Household Member Among Resident Households by Type of Dwelling



Source: Singapore Department of Statistics

Figure A1.7. Gini Coefficients: Resident Employed Household



Source: Singapore Department of Statistics

C. Recommendations for the Remaining Pandemic Period

6. As most sectors have recovered and also become more adept at adjusting the way they operate in the evolving pandemic situation, tapering fiscal support measures would be appropriate. However, support is still needed for hard-hit sectors such as aviation, tourism and hospitality.

- Given that Singapore is committed to maintaining its position as a global aviation hub, continuing support to the aviation industry is understandable. The government announced the OneAviation Support Package for Budget 2021, to preserve the industry's core capabilities especially by retaining its workforce. This will enable Singapore to be ready when international travel resumes

- While support to tourism-related sectors should continue, further support should take into account business viability prospects, which differ among different sub-sectors. For example, given the much less favourable prospects of Meetings, Incentives, Conventions and Exhibitions (MICE) businesses due to widespread adoption of digital alternatives, support to firms in this sub-sector could be tapered and more efforts put into channelling resources and manpower from this sub-sector to other parts of the economy.

- Domestic tourism should be promoted further amid continued uncertainty over the resumption of international travel. Further incentives could be provided to domestic tourists. On this front, the SingapoRediscovers Vouchers—the validity of which has been extended from June 2021 to December 2021—are helpful. The growing number of fully vaccinated people in Singapore could also help support domestic tourism. However, expectations on the extent of the resultant lift from domestic tourism should be realistic, given domestic tourism's small share of the economy.

7. **Increased resilience may allow Singapore to reap the benefits of carefully removing restrictions on domestic activities and international travel.** The pace at which the number of fully-vaccinated people is increasing and approaching herd immunity threshold, as well as adaptation to the changing pandemic situation, has led to enhanced economic resilience. Allowing fully-vaccinated people to engage in a greater number of economic and social activities, and cautious reopening of borders to fully-vaccinated international travellers should be considered. Such policies would help the ongoing economic recovery gain more traction.

8. **It is essential to help the remaining displaced workers move to growth areas.** The JGI scheme could be extended if a large number of displaced workers are still unable to secure employment despite strong demand for workers from firms in growth sectors.

9. **The government should be ready to support the economy if there are further waves of the pandemic or if economic growth slows significantly.** While Singapore has done well with pandemic control measures, the risk of renewed COVID-19 waves, especially its new variants, is still significant. In addition, several regional economies continue to grapple with a worsening situation and a slow pace of vaccination. If the need arises, additional fiscal packages could be deployed and funding from fiscal reserves could also be considered.

D. Takeaways for the Longer Term

10. **Lessons learnt from the implementation of fiscal policy packages to tackle the impacts of COVID-19 pandemic could help with the design and implementation of fiscal stimulus to address future crises.** The following achievements and areas for further improvements should be taken into consideration:

- **Most importantly, policy responses during a crisis should be swift, tailored and flexible to maximize effectiveness.** A decisive government response, strong coordination among governmental bodies and between the government and the private sector, as well as clear communication, are essential for effective crisis management. The unforeseen outbreak of infections in worker dormitories in April 2020 and in fishery ports and karaoke lounges in July 2021, demonstrates the importance of comprehensive gathering of information and views from different parts of the economy and society to avoid blind spots.

- **Well-documented business classification, information from tax administrative records, and employee data with the CPF, are critical in identifying the most vulnerable groups.** At the pandemic's onset, the authorities had to trade-off precision in identifying the vulnerable groups for speed in rolling out support packages. Going forward, the authorities are encouraged to further enhance the data system to identify the most vulnerable segments of society more accurately and quickly.

- **It is important to recalibrate the policy responses in the face of evolving challenges.** Given the fluidity of challenges during crises, the effectiveness of initial policy responses may diminish over time. The authorities should therefore be mindful of the evolving situation, stand ready to reassess policy measures and adjust them as needed. For example, in response to SMEs' comments that initially, some workers' training programs provided by the government were too generic, the government began to provide more specialized courses for them, which have been more beneficial.

Moreover, re-extending support to viable but vulnerable businesses, given new waves of infections that resulted in further restrictions from May to July, 2021, was also helpful, and demonstrated that agility of response is essential.

11. **Social safety nets should be strengthened to enhance household resilience to future crises.** A significant part of the adverse impact on households and workers during the pandemic was due to the circuit breaker and social distancing measures imposed by the government. Fortunately, the government was able to respond swiftly and extend appropriate income support to the households and workers in a timely manner which minimize the financial distress and scarring of the labor market. Looking forward, the authorities are encouraged to strengthen social safety nets as an automatic stabilizer against unexpected shocks. For example, it could be worthwhile to explore mechanisms to extend income support in the form of unemployment benefits, which can kick in quickly during periods of economic downturns, but do not significantly disincentivize job seeking efforts of the unemployed.

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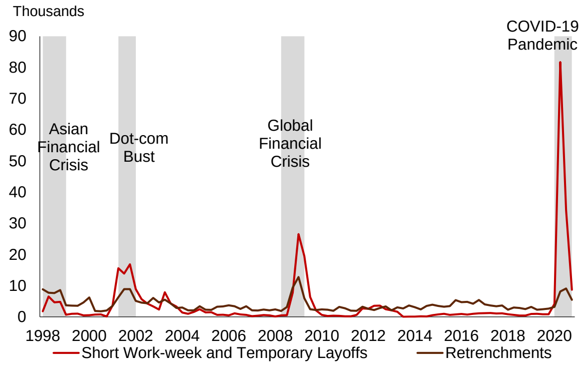
2. The Pandemic's Impact on the Labor Market, Policy Responses and the Challenges Ahead[29]

1. **Policy efforts have significantly mitigated the pandemic's impact and supported resident employment, but there are still challenges in the labor market.** Total employment fell at a record pace in 2020 due to the pandemic and the implementation of containment measures. The authorities have deployed various support measures to mitigate the pandemic's impact and minimize scarring through efforts to preserve jobs, boost hiring, help displaced workers regain employment and improve job-matching. These policy efforts have underpinned employment recovery. However, frictional and structural labor market challenges remain.

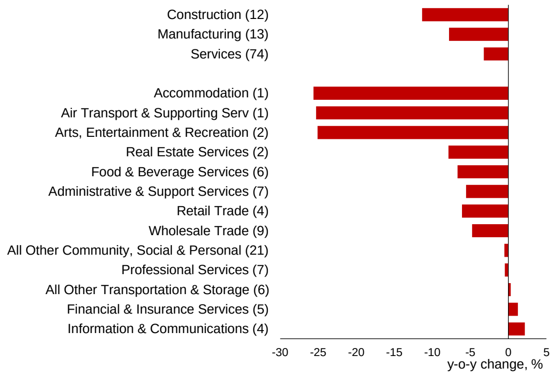
A. Impact of the Pandemic on the Labor Market in 2020

Figure A2.1. Retrenchments, Short Work-week and Temporary Layoffs



Source: Ministry of Manpower, AMRO estimates

Figure A2.2. 2020 Employment Change by Sector



Source: Ministry of Manpower, AMRO estimates
Note: Figures in parenthesis denote employment shares in 2019.

2. **The COVID-19 pandemic and containment measures have had a severe and uneven impact on the labor market.** The impact was most acute during Phase 1 of the CB in Q2 2020 with heavy retrenchments. The number of workers who were either temporarily laid off or placed on shorter work-week increased very quickly and far exceeded the peak recorded during the GFC (Figure A2.1). The labor market has improved gradually following the phased reopening of the economy and on the back of strong policy support. However, the recovery was uneven across sectors (Figure A2.2). Overall, employment in travel-related[30] sectors declined most sharply, by over 25 percent from 2019. Employment in domestic-oriented[31] sectors declined by 5-10 percent. Employment gains, however, were recorded in the modern services[32] sectors. The severe impact on travel-related and domestic-oriented sectors has disproportionately affected clerical, sales and service workers and lower income earners given the high concentration of such workers in these sectors.

B. Policy Responses and Effectiveness

3. **Sizable and targeted wage subsidies for resident workers, together with foreign worker levy waiver and rebates, prevented a sharper spike in job losses.** In FY2020, a total of SGD26.9 billion in wage support was provided to firms to retain resident workers under

[29] Prepared by Mr. Lim Ming (Justin) Han.
[30] The travel-related sectors comprise the accommodation, air transport, arts and entertainment, and the recreation sectors.
[31] The domestic-oriented sectors include construction, real estate, food and beverage, administrative and support services, and retail trade sectors.
[32] The modern-services sectors include ICT, finance and insurance, and professional services sectors.

the Jobs Support Scheme (JSS) (Table A2.1). During the downturn's most acute phase, all firms received a 75 percent subsidy for each resident worker's salary on the first SGD4,600. This wage support has been reduced and phased out as the economy has recovered, albeit at a slower pace for the hard-hit air travel and tourism-related sectors. Waivers and rebates of foreign worker levies have been very helpful for firms in the sectors that rely heavily on foreign workers. These measures have been extended and rebates have been increased to mitigate the impact of tighter border restrictions. The JSS has been timelier and larger compared to the same type of schemes during past crises. According to the authorities, it has helped reduce firms' effective wage bills by 16.7 percent on an annual basis (MAS, 2020) and prevented the resident unemployment rate from rising by a further 0.9 percentage point in 2020 (MAS, 2021).

Table A2.1. Summary of Key Labor Market Measures and Effectiveness

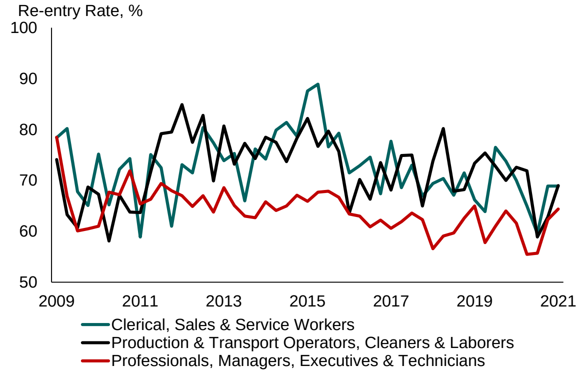
Measures	Key Objectives	Main Features	Fiscal Spending (SGD, bn)		Labor Market Impact
			FY2020 (actual)	FY2021 (budgeted)	
Jobs Support Scheme (JSS)	Preserve jobs and minimize firm closures	• Tiered wage subsidy schemes	26.9	0.7	• Reduced wage costs by 16.7 percent on an annual basis • Prevented the resident unemployment rate from rising by a further 0.9 percentage points in 2020
SGUnited Jobs and Skills Packages • SGUnited Traineeships • SGUnited Skills • SGUnited Mid-Career Pathways	Facilitate job-matching and shifting of displaced workers to recovering sectors	Skills training, career matching and conversion services, and highly subsidised training and attachments for displaced workers	2.0	0.2	Placed nearly 76,000 individuals into jobs, traineeships, attachments, and skills training in 2020
Jobs Growth Incentive (JGI)	Foster resident employment and temporarily lower the cost of hiring new resident workers	Provision of temporary partial salary support for the hiring of new resident workers.	1.0	5.2	Helped 42,000 firms to hire 270,000 local workers between September and February 2021

Source: AMRO staff estimates; Ministry of Finance; Ministry of Manpower; Monetary Authority of Singapore

4. **Policies to improve job-matching, support the rehiring of displaced workers and spur job creation, have added significant support to the labor market.** The SGUnited Jobs and Skills Packages and Job Growth Incentives (JGI) were rolled out to spur labor market recovery (Table 1). The SGUnited Jobs and Skills Packages were crucial in speeding up job-matching and helping displaced workers regain employment. These packages placed about 76,000 workers in jobs, traineeships, attachments, and skills training in 2020. Between September 2020 and February 2021, as many as 270,000 local workers were hired under the JGI scheme; nearly half of these were previously retrenched workers. As a result, the re-entry rate of displaced workers picked up considerably by end-2020 across all occupational segments (Figure A2.3). Moreover, as many as 6 in 10 workers were also able to switch industries under this scheme. Looking ahead, the recovery in resident workers' employment is expected to improve further, in line with a firmer economic outlook. In addition, this

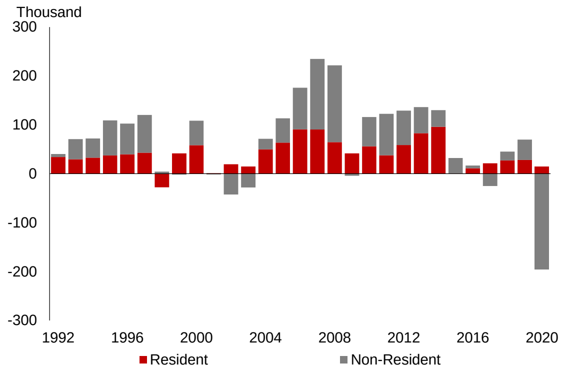
employment recovery will be bolstered by the extended JGI scheme and SGUnited Jobs and Skills Packages.[33]

Figure A2.3. Quarterly Rate of Re-Entry Into Employment of Retrenched Residents



Source: Ministry of Manpower

Figure A2.4. Annual Change in Employment



Source: Ministry of Manpower

5. Non-resident employment fell at a record pace in 2020, partly due to tighter border restrictions and lower hiring costs for resident workers. The pandemic shock was borne largely by the foreign workforce, which declined by a record 195,900 (Figure A2.4). Compared to resident workers, the rehiring of foreign workers was more limited in 2H 2020 due to tighter border measures and higher hiring costs associated with the Stay-Home Notice and testing requirements. In addition, the duration and amount of wage support and hiring subsidies for resident workers were longer and larger, compared to the temporary waiver and rebates of foreign worker levies. These factors have made it more appealing for affected firms to retain resident workers. Foreign workers, who were laid-off during the pandemic, have thus acted as a buffer to the local workforce (MAS, 2021). Indeed, AMRO's empirical findings show that the elasticity of resident employment to growth, at 0.24, is estimated to be much lower than the estimate for non-resident workers of 2.10 (Table A2.2). These results indicate that policy support measures have led to more stable resident employment outcomes.

Table A2.2. Estimation Results based on Change in Logged Annual Employment, 1991-2020

Explanatory Variables	Total	Resident	Non-Resident
Logged Real GDP growth	0.56**	0.24**	2.10**
Constant	0.45	1.08	-1.75
Adjusted R-squared	0.46	0.38	0.41

Source: AMRO staff estimates

Note: *** Indicates that the coefficients are statistically significant at 1 percent; ** indicates that the coefficients are statistically significant at 5 percent; * indicates that the coefficients are statistically significant at 10 percent. Based on the "difference" versions of the Okun's Law in MAS (2018), the implied Okun's coefficients are estimated with Newey-West standard errors via the following regression: $\Delta U_t = \beta \Delta Y_t + \varepsilon_t$ in Table 3, where U_t denote the unemployment rate and change in employment, and Y_t are the log of real output and asterisks indicate the equilibrium levels of the variables.

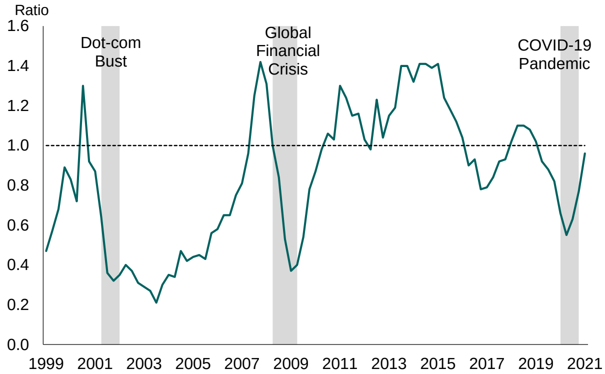
C. Challenges Ahead

6. Rising skills mismatches can exacerbate unevenness in the labor market recovery and result in higher long-term unemployment. Although the number of job vacancies has increased, the job vacancy-to-unemployed-person ratio has increased in tandem (Figure A2.5). Although this would suggest that labor market slack has diminished, it also indicates that job mismatches have increased. This is because the pace of rehiring displaced workers may have slowed, relative to the number of new job openings. Moreover,

[33] These measures aim to support the hiring of nearly 200,000 resident workers in 2021 and provide up to 35,000 training and attachment opportunities.

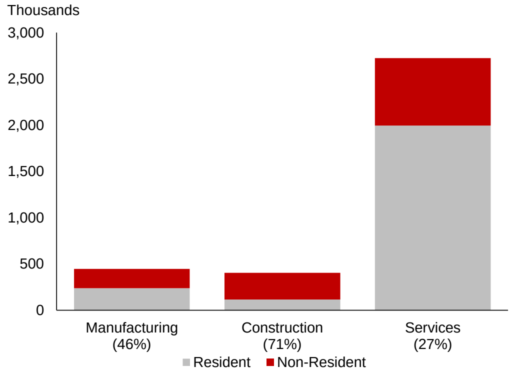
the resident long-term unemployment rate remains elevated at 1.1 percent, further indicating the uneven pace of labor market recovery. As job seekers with higher skills mismatches are more prone to becoming long-term unemployed (MTI, 2018), greater efforts to intensify reskilling and improve job matching are critical in minimizing labor market scarring.

Figure A2.5. Seasonally-adjusted Job Vacancy to Unemployed Person Ratio



Source: Ministry of Manpower; AMRO estimates

Figure A2.6. 2020 Employment by Residential Status



Source: Ministry of Manpower; AMRO estimates
Note: Figures in parenthesis denotes non-resident worker's employment share as of end-2020.

7. Foreign manpower bottlenecks can hamper recovery in some sectors. On the migrant workers' front, further tightness in sectors that are reliant on the foreign workforce (Figure A2.6), such as the construction and built environment sectors, can potentially constrain recovery and lead to further delays in the completion of key infrastructure and building projects. Fewer migrant workers in essential services sectors such as healthcare and cleaning could also hamper the government's effort to safely reopen the economy. Further declines in non-resident employment can result in rising wage pressures in these sectors. The authorities should ensure that there is sufficient foreign manpower to meet demand for skilled and unskilled migrant workers in Singapore.

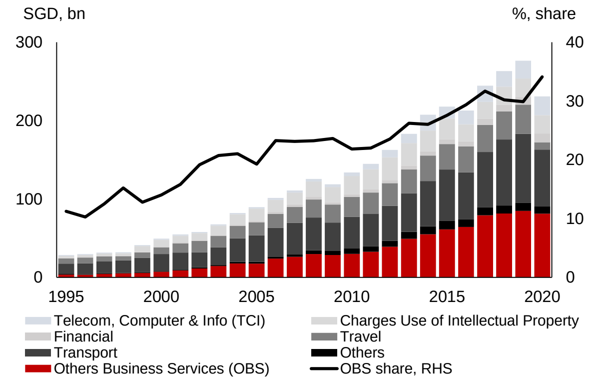
8. Workers will also need to navigate the challenges ahead in the post-pandemic environment.

- **Professionals, Managers, Executives and Technicians (PMETs) would face greater competition due to the greater ease with which companies can outsource and with the growing popularity of remote work.** As an international business hub and leading financial center, these trends will further strengthen the competitiveness of Singapore's modern services, particularly in finance and ICT, which bodes well for employment prospects in these sectors (See Selected Issue 2: Rise in Singapore's Modern Services). However, PMETs in other sectors would face greater competition from professional workers abroad as the outsourcing trend intensifies, as denoted by the increasing share of Other Business Services (OBS) imports over the past two decades (Figure A2.7). This trend can weigh on PMETs' prospects in many services sectors.

- **Non-PMETs may benefit less from the digitalization trend as they typically have fewer training opportunities.** The training participation rate of resident non-PMETs are lower compared to PMETs (Figure A2.8). Since PMETs are more adept at retraining and upskilling due to the nature of their jobs, the widening of training opportunities between PMETs and non-PMETs can lead to further inequality amid the digitalization shift.

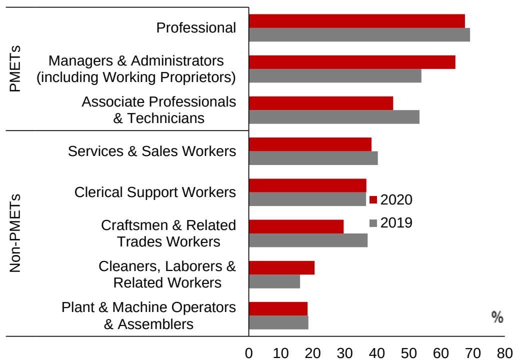
9. Therefore, policymakers are encouraged to continue paying close attention to challenges from accelerated remote working, business outsourcing and digitization trends. It is critical that reskilling and upskilling efforts continue and be adaptable to the changing environment and business needs. Further support for employers in job redesign, under the Job Transformation Maps, will boost digital adoption and productivity.

Figure A2.7. Singapore's Services Imports



Source: Singapore Department of Statistics
Note: Other Business Services (OBS) includes accounting, advertising and market Research, architectural, business management, engineering and technical, legal, research and development, operating leasing, trade related and other services.

Figure A2.8. Training Participation Rate of Employed Residents by Occupation



Source: MOM (2020)

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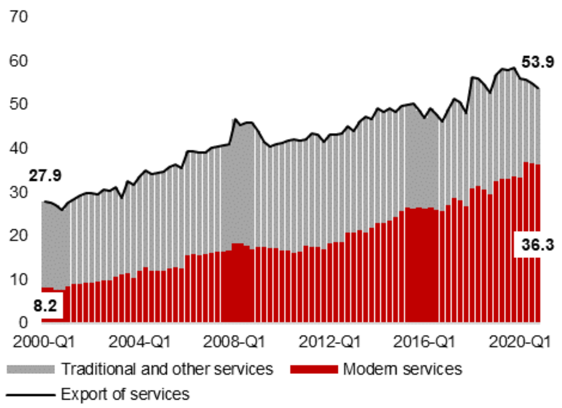
3. Rise of Modern Services as a Growth Driver[34]

A. Introduction

1. **Exports of services, particularly *modern services*, have become an increasingly important growth driver for the Singapore economy.** The share of services exports in the economy has more than doubled since the start of the millennium, reaching 55.2 percent of GDP in 2020 (Figure A3.1). The increase in services exports to GDP is mainly due to the growth in modern services — defined as services that can be provided without the need for close proximity between purchasers and suppliers (Lougani et.al., 2017). Export of modern services have seen their share of GDP increasing more than fourfold in the past two decades – to 35.8 percent in 2020.

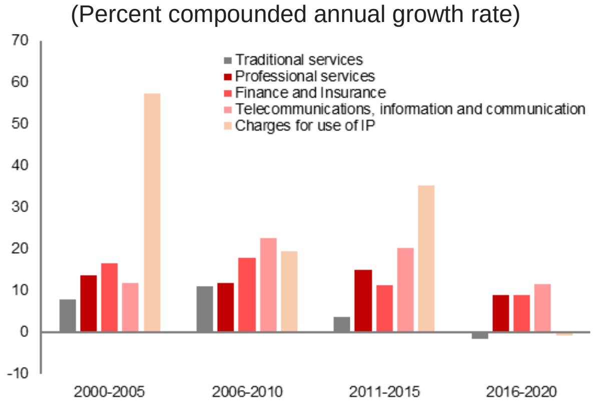
2. **The expansion of modern services has been driven by strong global demand and structural shifts enabled by technological innovation.** The growth of all sectors of modern services exports has outpaced traditional exports since 2000 (Figure A3.2), driven by rising demand in key export markets as well as sector-specific factors. As an international financial center, Singapore's exports of finance and insurance services have been boosted by financial sector liberalization in major export markets (MTI, 2014). The rapid advancement in ICT has enabled fragmentation of job functions and the outsourcing of support functions. Professional services, charges for the use of Intellectual Property (IP) and telecommunications, and information and communications (ICT) exports, have benefitted from the relocation of global business headquarters to Singapore and the nation's development of its role as an ICT hub (MAS, 2011).

Figure A3.1. Share of Export of Services by Categories (Percent share of GDP)



Source: Singapore Department of Statistics via Haver Analytics; AMRO calculations
Note: Traditional services refer to transportation services and travel receipts. Modern services refer to ICT, finance and insurance, charges for the use of Intellectual Property (IP), and professional services sectors.

Figure A3.2. 5-year Average Growth Rate for Exports of Services by Categories
(Percent compounded annual growth rate)



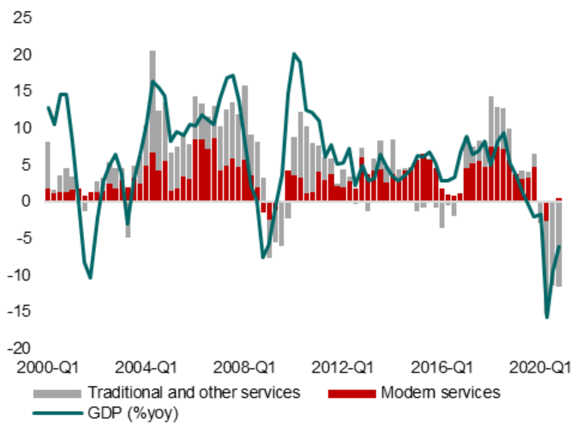
Source: Singapore Department of Statistics via Haver Analytics; AMRO calculations
Note: Professional services is also referred as "other business services" in the official national statistics.

[34] Prepared by Ms. Catharine Kho.

B. Interlinkages between Modern Services and the Overall Economy

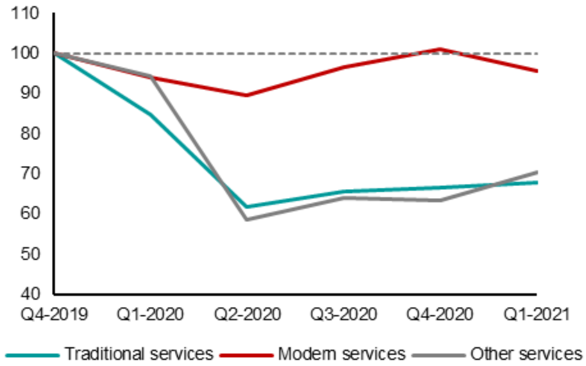
3. **Exports of modern services have been resilient during economic downturns**. Over the past two decades, exports of modern services have barely been a drag on GDP growth, contracting slightly and only in four of the 13 quarters of economic contraction (Figure A3.3). In contrast, growth in traditional services has been much more cyclical, weighing more heavily on GDP during those periods. In the recent pandemic, exports of modern services declined slightly in the second quarter of 2020 due to the Circuit Breaker, but quickly rebounded, reaching pre-pandemic levels by the end of the year (Figure A3.4). On the other hand, exports of traditional services have recovered gradually and are still far below the pre-pandemic levels.

Figure A3.3. Contribution of Exports of Services to Nominal GDP Growth
(Percentage point contribution; percent year-over-year)



Source: Singapore Department of Statistics; AMRO calculations.

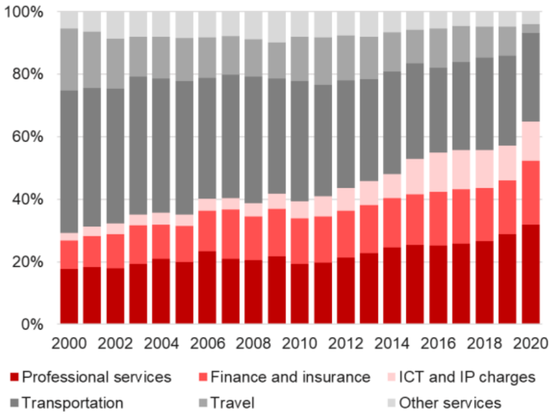
Figure A3.4. Exports of Services by Categories
(Index, Q4 2019 = 100)



Source: Singapore Department of Statistics via Haver Analytics; AMRO calculations.
Note: Other services refer to construction services, manufacturing services on physical inputs owned by others, maintenance and repair services, government services and personal, cultural and recreational services.

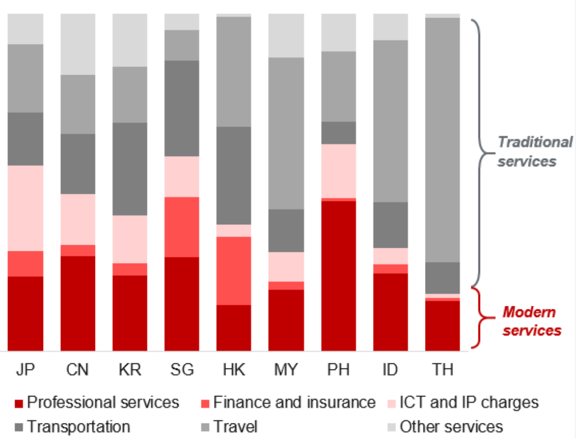
4. **Broad-based expansion of modern services has raised Singapore's services exports diversity and will mitigate the impact of the slow recovery of traditional services sectors on overall economic growth.** Following the broad-based expansion across modern services since 2000, all major services sectors, such as *professional services*, *transportation*, *finance and insurance*, as well as *ICT and charges for the use of IP*, accounted for about 30 percent of Singapore's services exports in the last five years (Figure A3.5). This export diversity stands in stark contrast to 20 years ago when traditional and other services accounted for 70 percent of Singapore's services exports. As one of the more diversified economies in the region (Figure A3.6), Singapore is well-positioned to leverage modern services to buttress overall growth against continued headwinds for the travel and tourism sectors from the resurgence of COVID-19 infections in regional economies, slow vaccination progress, and the emergence of more virulent COVID-19 strains.

Figure A3.5. Exports of Services by Categories
(Percent share of exports of services)



Source: Singapore Department of Statistics via Haver Analytics; AMRO calculations.

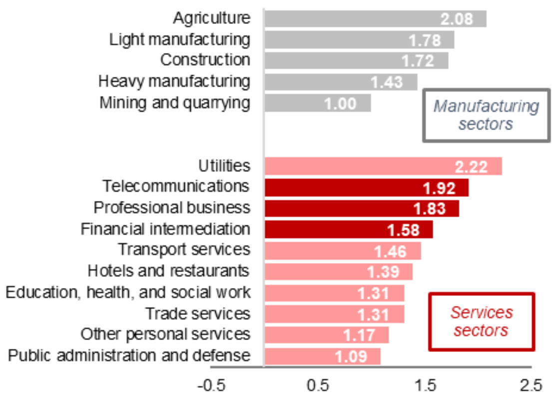
Figure A3.6. Selected ASEAN+3: Exports of Services by Categories
(2016-2020 average; Percent share of exports of services)



Source: National authorities via Haver Analytics; AMRO calculations.
Note: Due to data limitation, data for the Philippines and Thailand refers to the average of 2016-2019, and data for Hong Kong refers to the average for 2016-2018.

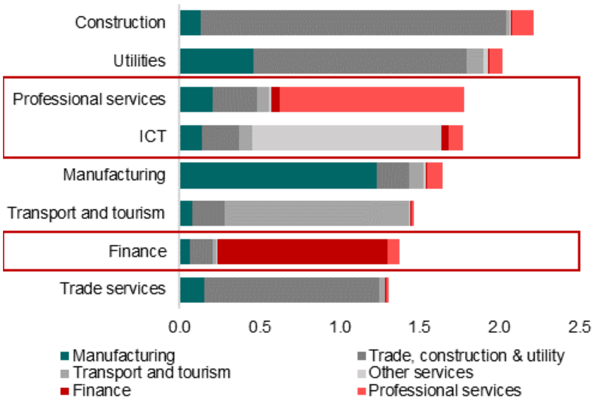
5. **Growth in modern services will spur growth in other sectors given their high and diversified forward linkages.** Forward linkages represent the supply perspective and refers to the linkages of a sector to other economic sectors that purchase its outputs to serve as inputs in their production (ADB, 2020). An increase in output of a sector with high forward linkages would therefore induce an increase in production in sectors along its downstream supply chain. Apart from utilities, modern services have the highest forward linkages among services sectors (Figure A3.7) and contribute to growth in the manufacturing sector, traditional services, and other modern services subsectors (Figure A3.8).

Figure A3.7. Total Forward Linkage by Sectors
(Percentage change in value added, 2019)



Source: ADB National Input-Output Table (Singapore); AMRO estimates.
Note: Red bars denote modern services subsectors. Total forward linkage is defined as the total economy-wide impacts induced by a change in primary inputs in a sector. Total forward linkages are measured as the row sums of Ghosh inverse matrix of the 2019 national input-output table.

Figure A3.8. Forward Linkage to Various Sectors
(Percentage change in value added, 2019)

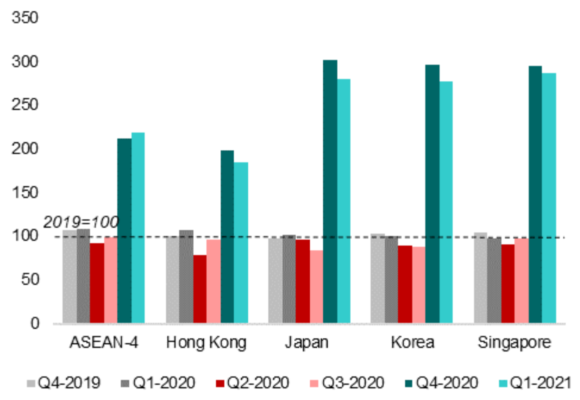


Source: ADB National Input-Output Table (Singapore); AMRO estimates.
Note: Red boxes denote modern services subsectors.

C. Policy Implications

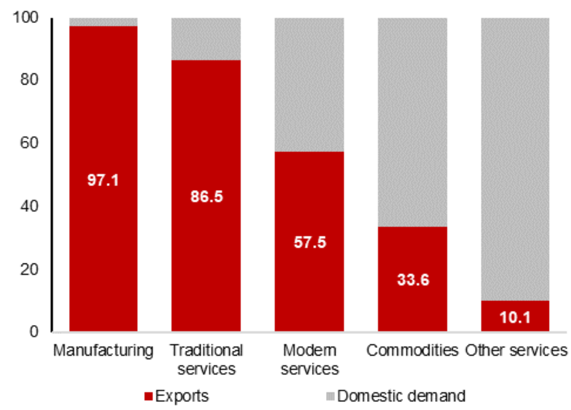
6. Structural shifts accelerated by the pandemic have created both opportunities and challenges for Singapore's exports of modern services. The pandemic has accelerated digital adoption globally and enabled greater proliferation of remote working. Firms and economies have also taken the opportunity to enhance digital infrastructure. While such trends offer potential for more seamless provision of cross-border services, they would also intensify competition in these areas. The resilience of modern services exports is not unique to Singapore. All major regional economies saw modern services recovering to pre-pandemic levels by the end of 2020, underscoring the highly competitive service offerings of each regional economy (Figure A3.9). In order to differentiate itself, Singapore should capitalise on its strengths in financial sector innovation, its skilled workforce, and dynamic technological ecosystem[35] to strengthen its foothold in new growth areas such as green financing, consulting services on climate change management, and telemedicine.

Figure A3.9. Selected ASEAN+3: Recovery in Exports of Modern Services by Economies
(Index, 2019=100)



Source: ADB National Input-Output Table (Singapore); AMRO estimates.
Note: ASEAN-4 refers to Indonesia, Malaysia, Philippines and Thailand.

Figure A3.10. Source of Demand for Major Production Sectors in Singapore
(Percent share of total input)



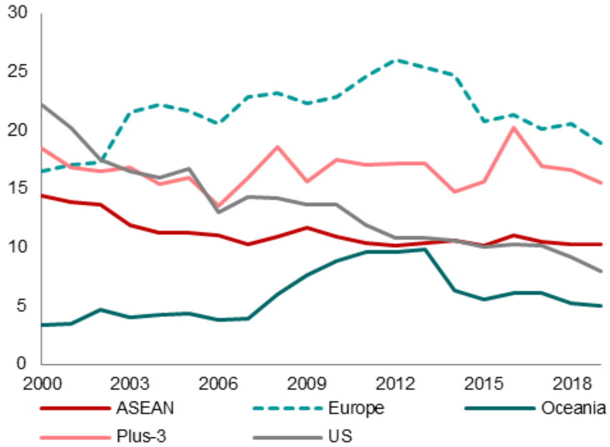
Source: ADB National Input-Output Table (Singapore); AMRO estimates.
Note: Total input refers to the sum of intermediate inputs and imports derived from the national input-output table.

7. Further development of modern services would boost growth, employment and income. As a sector with high forward linkages, the development of modern services largely depends on its ability to create new services and solutions. Availability and access to quality modern services are crucial to all economic sectors in the increasingly digitally-driven business environment. The enhancement of modern services would therefore benefit the domestic economy by raising output, employment and wages in a wide range of downstream sectors[36]. The deepening of capabilities in modern services would also enable Singapore to increase the export content of the services sector, further boosting productivity (MAS, 2011). The refreshing of the ITMs under the ITM2025 presents an opportunity to deepen production linkages between modern services and the production sectors and to strengthen local firms' capabilities, particularly in the areas of professional, scientific and technical services.

[35] Singapore ranked first in the world for technological framework in the World Bank Ease of Doing Business Report (2020), and first in Asia for IP protection infrastructure and innovation center in the Global Innovation Index (2018 and 2019, respectively).
[36] The share of modern services in total employment was about 16 percent in 2020. Rising employment was witnessed across modern services sectors during the pandemic period. See Selected Issue 1 on Pandemic's Impact on the Labor Market, Policy Responses and the Challenges Ahead.

8. **There is room to further increase exports of modern services, especially to regional economies.** Currently, 57.5 percent of demand for modern services comes from overseas (Figure A3.10), which is still significantly lower than that for traditional services. The share of Singapore's exports of modern services to the ASEAN region has been quite stable—at around 11 percent since the global financial crisis (Figure A3.11). Hence, there is room to boost exports of modern services particularly, in the region. As a member of recent trade agreements such as the Regional Comprehensive Economic Partnership (RCEP) and ASEAN Trade in Services Agreement (ATISA), Singapore is well-positioned to expand its modern services offerings to the region. Moving forward, Singapore's expansion of modern services exports could also benefit from the ASEAN+3 region's expected strong rebound from the pandemic (AMRO, 2021) and the region's commitment toward a greener recovery. This would also facilitate further increases in intra-regional trade and investment flows.

Figure A3.11. Singapore's Exports of Modern Services by Major Markets
(Percent share of export of modern services)



Source: Singapore Department of Statistics via Haver Analytics; AMRO calculations.

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