INTERNATIONAL MONETARY FUND

IMF Country Report No. 22/233

SINGAPORE

July 2022

2022 ARTICLE IV CONSULTATION—PRESS RELEASE; STAFF REPORT; AND STATEMENT BY THE EXECUTIVE DIRECTOR FOR SINGAPORE

Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. In the context of the 2022 Article IV consultation with Singapore, the following documents have been released and are included in this package:

- A **Press Release** summarizing the views of the Executive Board as expressed during its July 15, 2022 consideration of the staff report that concluded the Article IV consultation with Singapore.
- The **Staff Report** prepared by a staff team of the IMF for the Executive Board's consideration on July 15, 2022, following discussions that ended on May 20, 2022, with the officials of Singapore on economic developments and policies. Based on information available at the time of these discussions, the staff report was completed on June 27, 2022.
- An **Informational Annex** prepared by the IMF staff.
- A **Statement by the Executive Director** for Singapore.

The IMF's transparency policy allows for the deletion of market-sensitive information and premature disclosure of the authorities' policy intentions in published staff reports and other documents.

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Washington, D.C.

PRESS RELEASE

PR22/269

IMF Executive Board Concludes 2022 Article IV Consultation with Singapore

FOR IMMEDIATE RELEASE

Washington, DC –July 21, 2022: The Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation[1] with Singapore.

Singapore's skillful containment measures, effective vaccination campaign and decisive policy support helped the economy to recover impressively. In 2021, real GDP growth reached 7.6 percent and overall activity surpassed pre-COVID levels, making Singapore one of the top performing advanced economies. However, the recovery has been uneven with tourism-related, consumer-facing, and construction sectors remaining below pre-pandemic levels. The labor market is recovering from the pandemic, albeit with some heterogeneity reflecting the uneven recovery. Overall unemployment declined from its peak of 3.6 percent in October 2020 to about the pre-pandemic level of 2.2 percent in March 2022. Inflation has risen rapidly and reached 5.4 percent in April 2022, mostly reflecting higher costs of private transport and housing. The external sector has continued to perform well, supported by robust exports, with the current account surplus reaching 18.1 percent of GDP in 2021.

Growth is expected to remain above potential in the near term and broaden across sectors, supported by widespread vaccinations and pent-up demand as the economy reopens. Staff projects a GDP growth of 3.7 percent for 2022. Headline inflation is expected to remain elevated at about 4.8 percent in 2022, driven by rising domestic cost pressures, and exacerbated by external factors such as the war in Ukraine's impact on commodity prices and tight supply conditions. With the recovery in domestic demand, the current account surplus is expected to decline to 13.2 percent of GDP in 2022. Over the medium term, growth should converge to 2.5 percent with the current account surplus declining and inflation stabilizing at 1.5 percent. The outlook is subject to significant uncertainty and risks are titled to the downside, stemming mostly from the war in Ukraine and the related sanctions, China's growth slowdown, monetary policy normalization in advanced economies, and the risk of vaccine-resistant new COVID-19 variants emerging.

Executive Board Assessment[2]

Executive Directors commended the authorities for their effective management of the pandemic, swift vaccination rollout and decisive policy support, which led to an impressive economic recovery. Directors noted, however, that the recovery has been uneven across

[1] Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board.

[2] At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: http://www.IMF.org/external/np/sec/misc/qualifiers.htm.

sectors. Furthermore, downside risks to the outlook remain significant, including increasing economic uncertainties, tightening global financial conditions, and inflationary pressures amplified by the war in Ukraine. In this context, Directors considered that macroeconomic policies should focus on calibrating the pace of normalization to facilitate a broader recovery while managing price pressures and downside risks.

Directors agreed that a prudent fiscal stance combined with targeted and temporary assistance to vulnerable households, workers, and firms would strike the right balance in the current uncertain environment. Should downside risks materialize, Directors recommended that fiscal policy be the first line of defense.

Directors observed that Singapore's external position remained substantially stronger than warranted by fundamentals in 2021, although a number of Directors noted the uncertainties relating to the external balance assessment. Directors concurred that Singapore is well-positioned to withstand medium- and long-term challenges such as higher projected spending related to aging, climate change, public housing and infrastructure needs. While planned revenue mobilization will help meet a part of the financing need, a slower pace of fiscal surplus accumulation may be warranted and would also help external rebalancing.

Directors supported the tighter monetary policy stance, given upside risks to inflation. They agreed that monetary policy should continue to be data dependent and encouraged the authorities to remain vigilant towards price developments and to take further action if higher inflation becomes more persistent than currently envisaged.

Directors agreed that the financial sector remains healthy and welcomed the authorities' continued monitoring of risks. They concurred that the macroprudential stance has been appropriately tightened and further actions might be needed should financial risks continue to grow. Directors welcomed the authorities' plans to ramp up housing supply, which would complement the tighter macroprudential stance in supporting the stabilization of the residential real estate prices. They took positive note of the progress in implementing the 2019 FSSA recommendations and encouraged continued enhancement of the AML/CFT framework.

Directors welcomed the authorities' pivot to post-pandemic and longer-term policy priorities by accelerating transformation towards a greener, digital, and more inclusive economy. They encouraged continuous progress in the authorities' ambitious strategy on climate change, as well as in their digitalization and inclusion initiatives.

Table 1. Singapore: Selected Economic and Financial Indicators, 2016–23

Nominal GDP (2021): US$396.9 billion

Population (2021): 5.5 million

GDP per capita (2021): US$72,766

Main goods exports (2021, percent of total non-oil goods exports): machinery & transport equip. (61.6 percent); chemical products (15.5 percent); and misc. manufactured articles (9.9 percent).

Top three destinations for goods exports (2021, percent of gross goods exports): China (14.8 percent); Hong Kong SAR (13.1 percent); and USA (8.4 percent).

							Projections	
	2016	2017	2018	2019	2020	2021	2022	2023
Growth (percentage change)								
Real GDP	3.6	4.7	3.7	1.1	-4.1	7.6	3.7	2.6
Total domestic demand 1/	5.5	6.1	0.9	2.0	-9.9	8.9	3.8	2.3
Final domestic demand 1/	2.3	4.0	0.5	2.7	-9.6	9.4	3.9	2.3
Consumption	3.3	3.2	3.7	3.2	-7.2	4.5	3.6	3.6
Private consumption	3.2	3.2	4.0	3.2	-12.9	4.5	4.5	3.9
Gross capital formation 1/	9.6	11.0	-3.7	-0.3	-14.7	17.7	4.3	0.1
Gross fixed investment	0.6	5.3	-5.1	1.7	-14.2	19.6	4.5	0.1
Change in inventories (contribution to GDP growth, percentage points) 1/	2.3	1.6	0.3	-0.5	-0.4	-0.2	0.0	0.0
Net exports (contribution to GDP growth, percentage points) 1/	-0.2	0.9	2.5	0.5	3.1	0.9	1.2	1.0
Saving and investment (percent of GDP)								
Gross national saving	44.1	44.6	39.9	39.1	39.3	42.5	40.0	38.3
Gross domestic investment	26.5	27.3	24.8	24.7	22.5	24.4	26.8	25.7
Inflation and unemployment (period average, percent)								
CPI inflation	-0.5	0.6	0.4	0.6	-0.2	2.3	4.8	2.5
CPI inflation, excluding food and energy 2/	-0.5	-0.7	-0.1	0.4	-0.3	2.4	2.8	2.0
MAS core inflation 2/	0.9	1.5	1.7	1.0	-0.2	0.9	3.0	2.0
Unemployment rate	2.1	2.2	2.1	2.3	3.0	2.7	2.2	2.2
Central government finances (percent of GDP) 3/								
Revenue	18.3	18.8	17.9	17.8	17.8	18.3	17.8	16.9
Expenditure	15.1	14.0	13.8	14.0	22.1	20.2	16.8	15.5
Net lending/borrowing	3.2	4.8	4.1	3.8	-4.2	-1.9	1.0	1.4
Net lending/borrowing, excluding nonproduced assets	0.4	1.7	1.1	1.4	-5.9	-3.8	-1.0	-0.5
Primary balance 4/	-2.6	-1.5	-2.0	-1.9	-9.6	-7.6	-4.7	-3.2
Money and credit (end of period, percent change) 5/								
Broad money (M2)	8.4	4.2	5.1	4.4	10.7	9.7	8.9	5.1
Credit to private sector	5.5	3.3	4.8	3.0	1.4	6.2	3.7	2.6
Three-month S$ SIBOR rate (percent)	1.0	1.5	1.9	1.8	0.4	0.4	...	...
Balance of payments (US$ billions)								
Current account balance	56.3	59.4	57.1	54.3	58.1	71.9	56.2	56.4
(In percent of GDP)	17.6	17.3	15.2	14.5	16.8	18.1	13.2	12.6
Goods balance	89.9	101.0	104.1	98.1	103.6	118.2	100.9	111.2
Exports, f.o.b.	373.2	417.2	460.6	442.6	417.8	503.9	610.1	647.7
Imports, f.o.b.	-283.3	-316.2	-356.4	-344.5	-314.1	-385.7	-509.1	-536.5
Financial account balance 6/	57.5	32.5	44.5	62.5	-15.8	8.2	6.1	4.9
Overall balance 6/	-1.8	27.4	12.5	-8.4	74.9	66.2	50.1	51.4
Gross official reserves (US$ billions)	246.6	279.9	287.7	279.5	362.3	417.9	460.5	519.0
(In months of imports) 7/	5.9	6.0	6.3	6.5	7.1	6.3	6.6	7.0
Singapore dollar/U.S. dollar exchange rate (period average)	1.38	1.38	1.35	1.36	1.38	1.34	...	...
Nominal effective exchange rate (percentage change) 8/	-1.0	-1.0	0.5	1.5	-2.4	0.4	...	...
Real effective exchange rate (percentage change) 8/	-6.0	-9.4	-5.9	4.6	-25.1	0.4	...	...
Memorandum items:								
Nominal GDP (in billions of Singapore Dollars)	440.5	473.9	508.5	512.2	476.4	533.4	581.0	610.9
Growth (%)	4.0	7.6	7.3	0.7	-7.0	12.0	8.9	5.1

Sources: Data provided by the Singapore authorities; and IMF staff estimates and projections.

Note: Data and forecasts as of May 24, 2022

1/ Approximation based on available data.

2/ IMF staff estimates, showing projections from 2021. MAS core inflation excludes the costs of accommodation and private transport.

3/ IMF staff estimates on a calendar year basis following GFSM 2014.

4/ Net lending/borrowing excluding net investment return contribution (NIRC).

5/ Data reporting by financial institutions changed since July 2022 after two major changes in MAS' banking sector regulatory framework took effect, creating a break in the broad money and credit to private sector series.

6/ Following the BPM6 sign convention, a positive entry implies net outflows.

7/ In months of following year's imports of goods and services.

8/ Increase is an appreciation.

INTERNATIONAL MONETARY FUND

SINGAPORE

STAFF REPORT FOR THE 2022 ARTICLE IV CONSULTATION

June 27, 2022

KEY ISSUES

Context. Singapore registered one of the most impressive recoveries from the pandemic, with economic output having surpassed pre-crisis levels at end-2021. This was spurred by the country's strong economic fundamentals, an impressive vaccination rollout, and the authorities' decisive policy responses. However, the recovery has been uneven with activities in tourism-related, consumer-facing and construction sectors remaining well below pre-pandemic levels. Inflation has risen rapidly due to higher food and energy, private transport, and housing prices, but inflation expectations remain well anchored. Risks to the outlook are tilted to the downside, arising mainly from the war in Ukraine and the related sanctions, the pandemic, China's growth slowdown, and monetary policy normalization in advanced economies.

Economic Policy Recommendations. In view of the strong but uneven recovery, near-term policies should focus on calibrating the pace of normalization to facilitate a broadening of the recovery, while managing price pressures and downside risks:

- The tighter fiscal stance in 2022, combined with targeted and temporary assistance for vulnerable households, workers, and firms, will limit inflationary pressures from public demand while facilitating a broadening of the recovery.
- The tighter monetary policy stance is appropriate to help contain inflationary pressures, which have been exacerbated by the war in Ukraine and the related sanctions.
- The tight macroprudential stance should be maintained, and further tightened as needed. This combined with the authorities' plans to ramp up housing supply would help ensure a soft landing in residential real estate prices and prevent a further rise of systemic financial risks.
- The financial sector remains healthy, but the authorities should continue to be vigilant as a premature withdrawal of financial support schemes could increase corporate stress, particularly for SMEs.
- Should downside risks materialize, Singapore can continue to deploy its ample fiscal buffers to cushion the economic impact, with targeted fiscal support continuing to be the first line of defense.
- The authorities are pivoting to post-pandemic and longer-term priorities. Recent initiatives, included as part of the FY2022 budget, to accelerate transition towards a smarter, greener, and more inclusive economy post-pandemic are welcome.

Approved By
Krishna Srinivasan (APD) and Anna Ilyina (SPR)

Discussions were held in Singapore during May 9–20, 2022. The mission met with Deputy Prime Minister and Minister of Finance Lawrence Wong, Senior Minister Tharman Shanmugaratnam, Permanent Secretary (Ministry of Finance) Tan Ching Yee, Monetary Authority of Singapore (MAS) Managing Director Ravi Menon, senior staff from the Ministry of Finance, MAS, various line ministries, and public sector entities, as well as representatives from the private sector. The mission comprised Lamin Leigh (Head), Kodjovi Mawulikplimi Eklou, Ghada Fayad, Tidiane Kinda, Sohrab Rafiq (all APD), Natalia Novikova (Resident Representative) and Tian Yong Woon (Economist in Singapore Office). Krishna Srinivasan (APD) joined the courtesy calls on Senior Minister Shanmugaratnam and the MAS Managing Director Menon as well as the concluding meeting. Rosemary Lim (Executive Director) and David Ong (Senior Advisor, OED) joined meetings with the public sector. Kaustubh Chahande and Justin Flinner (both APD) assisted in the preparation of this report. Data used in this report for staff analyses are as of May 25, 2022, unless otherwise noted.

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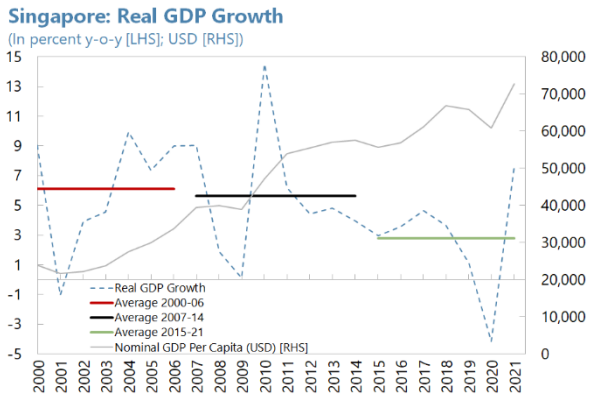
TABLES

APPENDICES

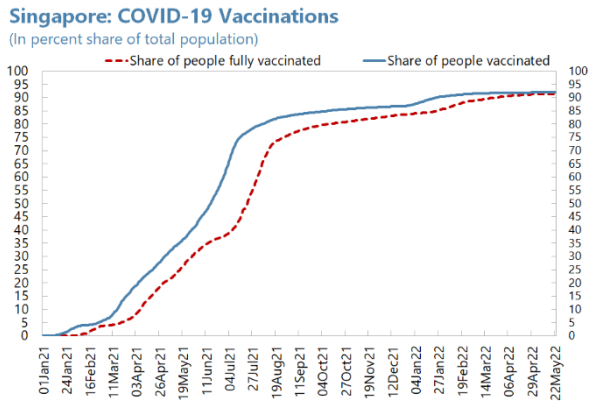
CONTEXT

1. Singapore has benefited from substantial policy buffers and robust policy frameworks to manage the COVID-19 pandemic. A track record of fiscal prudence, notably strong compliance with the balanced budget rule, have led to the accumulation of large net public sector assets. In addition, Singapore's macroeconomic policy frameworks are solid, including a credible monetary policy and smart financial sector regulation and supervision. These strong initial conditions have supported robust economic performance pre-pandemic and enabled the authorities to respond decisively to the health crisis.

2. On the back of a highly vaccinated population, Singapore is gradually moving from a pandemic to an endemic phase and pivoting to longer-term challenges. With an impressive vaccine rollout —92 percent of the total population is fully vaccinated[1]—Singapore appears to be safely re-opening the economy. Singapore is also shifting policies to address longer-term challenges such as climate change, inequality, and technological shifts.



Sources: SGP Dept. of Statistics, CEIC Data, and IMF staff calculations.



Sources: Our World in Data and CEIC Data.

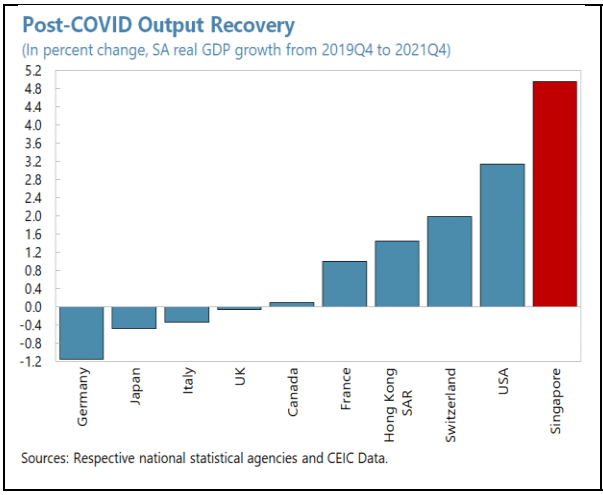
RECENT DEVELOPMENTS: A STRONG BUT UNEVEN RECOVERY FROM THE COVID-19 PANDEMIC

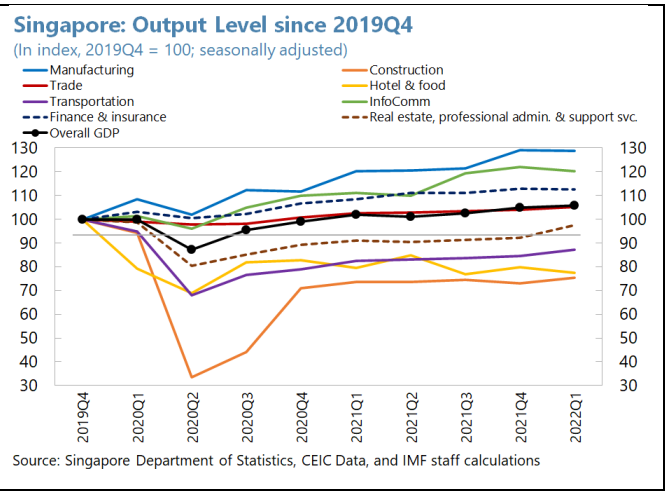
3. Despite multiple COVID waves, the recovery has been impressive, but is uneven. Following a contraction of 4.1 percent in 2020, real GDP growth recovered sharply to 7.6 percent in 2021, underpinned primarily by net external demand and complemented by a strong rebound in domestic demand, including robust investment, and private consumption (Figure 1 and Table 1).[2]. Overall activity surpassed pre-COVID levels, placing Singapore's recovery as one of the strongest among advanced economies. However, the hardest hit sectors of tourism and aviation-related, consumer-facing and construction remained below pre-pandemic levels in Q1 2022, while

[1] In addition, about 77 percent of the population have received a booster shot as of June 13th, 2022.

[2] Based on the definition of the GDP from the demand side with external demand defined as net exports of goods and services.

manufacturing and tech-related activities thrived.[3] Private sector domestic non-bank credit growth accelerated to 6.2 percent in 2021, up from 1.4 percent in 2020, in line with the recovery.[4]





4. Pandemic-related policies supported the recovery. While the authorities appropriately shifted from broad-based emergency relief to more targeted support in 2021, the lingering impact of the exceptionally strong fiscal response in FY2020 (about 20 percent of GDP) continued to support the recovery (Appendix I).[5] The FY2021 budget also supported public health capacity and extended selected measures (about 2 percent of GDP) to provide targeted benefits to workers and businesses still impacted by the pandemic. In particular, wage subsidies under the Jobs Support Scheme (JSS), which initially supported the entire stock of jobs and were subsequently targeted to the sectors most affected by pandemic, were pivotal in minimizing scarring. After easing monetary policy in March 2020, the Monetary Authority of Singapore (MAS) maintained an accommodative monetary policy stance with a zero percent per annum rate of appreciation of the S$NEER policy band and an unchanged width of the band through October 2021. Regulatory and supervisory forbearance measures expired in September 2021 and continued targeted financial sector support measures have provided some cushion to firms and households still impacted by the pandemic.[6]

5. The external sector has continued to perform well, supported by robust exports (Figure 2 and Table 2). Goods exports continued to be solid overall in 2022Q1 (4.3 percent year-on-year in real term) following a soft patch in 2020. The strong export growth was driven by non-oil re-exports.

[3] Foreign labor shortages due to border restrictions to curb the spread of the virus weighed on construction activities, which remained at about 30 percent below the pre-pandemic level in end-2021.

[4] Including credit to residents and non-residents, based on the MAS monetary survey.

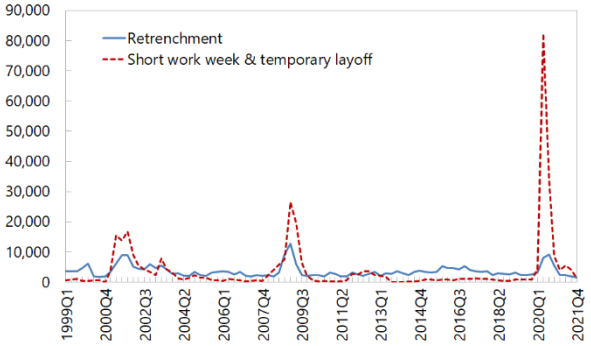
[5] As the fiscal year 2020 covers the period from April 1, 2020, to March 31, 2021, about a quarter of the FY2020 fiscal support was expected to impact growth in 2021. In addition, Kinda, Lengyel, and Chahande (2022) shows that cumulative fiscal multipliers one year after a health crisis are about twice larger than during normal times, particularly in advanced economies like Singapore (Appendix I).

[6] During the Delta wave, application deadlines for credit relief on specified loans — individuals and SMEs in sectors facing pandemic-related financial difficulties— were extended from June to September 2021, and for restructuring assistance for SME borrowers with credit facilities across multiple lenders to December 2021.

Oil imports grew by more than 50 percent in 2022Q1, while non-oil imports rose by 17.4 percent due to higher electronics and non-electronics imports. Services trade continued to recover in 2022Q1, driven by higher export and import of business and transport services.

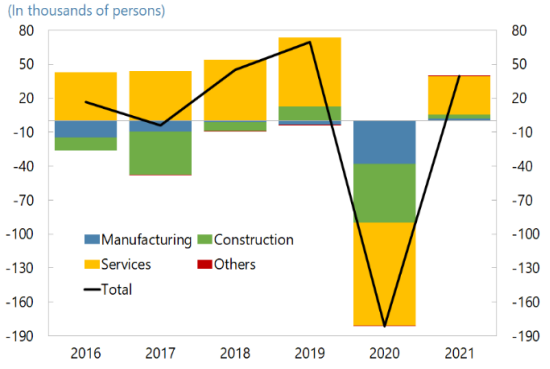
6. The labor market is recovering from the pandemic, albeit with some heterogeneity across groups and sectors (Figure 3). Overall, unemployment has steadily declined from its peak of 3.6 percent in October 2020 to about the pre-pandemic level of 2.2 percent in March 2022. Employment excluding migrant domestic workers continued to expand by about 42,000 in 2022Q1 while the number of retrenchments fell to a record low of 1,260. Labor market measures, including wage subsidies, training, and job placement initiatives, supported improvements in the overall labor market. However, employment in construction which remained sluggish reflecting foreign labor shortages, has started to recover in 2022Q1 as entry approvals resumed. Employment in services rebounded in 2021, but under-employment was elevated in June 2021 within the sector, reaching 8 percent in accommodation and food services. After shrinking by 211,500 between 2020 and 2021, and absorbing most of the labor market correction, the foreign workforce (excluding migrant domestic workers) has started to recover. The median gross wage increased by 3.2 percent in 2021, with variations across sectors.

Singapore: Temporary Adjustment & Retrenchment
(Persons)

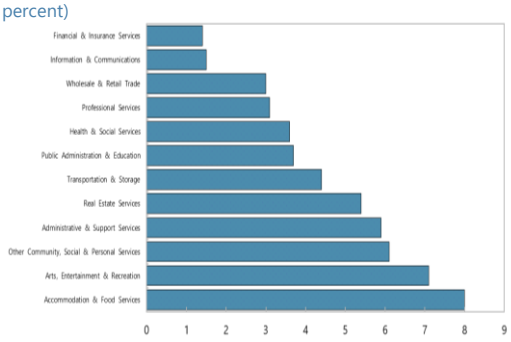


Source: Singapore Ministry of Manpower and Haver Analytics.

Singapore: Changes in Employment by Sector
(In thousands of persons)

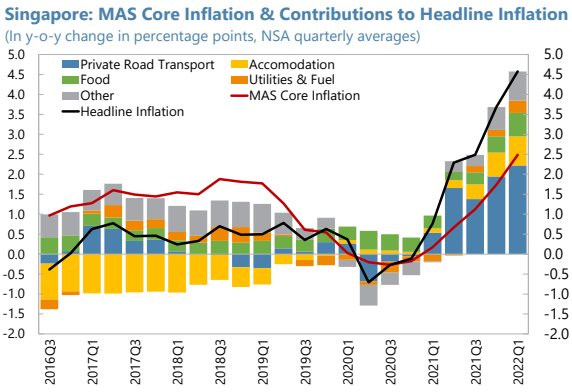


Singapore: Service Sector, Time Related Under-Employment Rate of Residents, June 2021
(In percent)



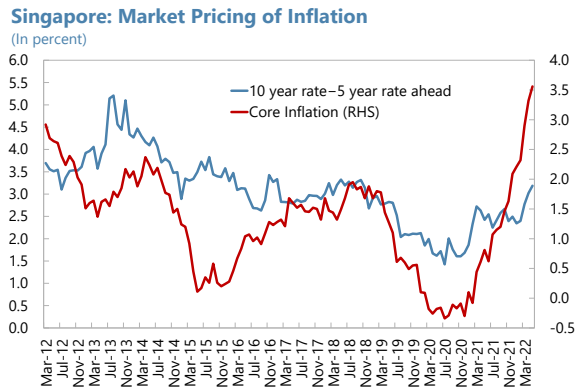
Sources: Singapore Ministry of Manpower and CEIC Data.

7. Inflation is on the rise. Both MAS core and headline average inflation increased rapidly in 2021 (Figure 4). Headline inflation reached 5.4 percent in April 2022, mostly reflecting higher costs of private transport and housing. MAS core inflation stood at 3.3 percent, driven by higher global food and energy prices. Market pricing of inflation suggest that inflation expectations remain well anchored.



Singapore: MAS Core Inflation & Contributions to Headline Inflation
(In y-o-y change in percentage points, NSA quarterly averages)

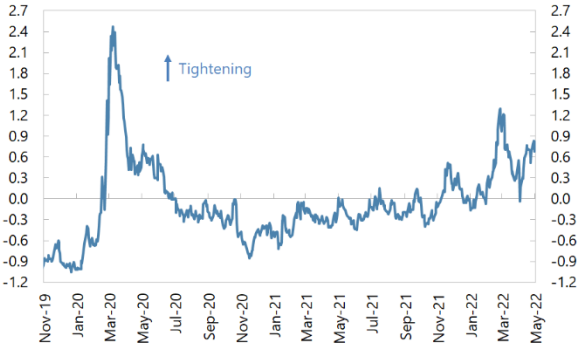
Sources: Singapore Department of Statistics, CEIC Data, and IMF staff calculations.



Singapore: Market Pricing of Inflation
(In percent)

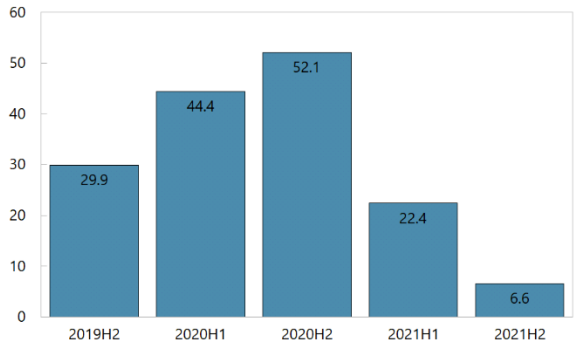
Sources: Haver Analytics and Bloomberg L.P.

8. MAS shifted to a tighter policy stance, and financial conditions have tightened. After normalizing in 2021, financial conditions have started tightening somewhat. The MAS pre-emptively tightened monetary policy in October 2021, and out-of-cycle in January 2022 by raising the slope of the S$NEER policy band slightly, and more aggressively in April 2022 by re-centering the mid-point of the S$NEER policy band upward at the prevailing level and increasing slightly the rate of appreciation of the policy band. The MAS also revised its core inflation outlook upwards to 2.5–3.5percent in 2022, from the 2.0–3.0percent expected in January, and its headline inflation outlook to 4.5–5.5percent, from 2.5–3.5percent expected in January. In the face of inflows that required significant FX reserve purchases, net FX purchases reached US$52.1 billion in 2020H2, moderating to US$6.6 billion in 2021H2. Total FX reserves stood at S$563 billion in 2021, up from S$479 billion in 2020. SGD interest rates have increased lately in tandem with the rise in USD and other interest rates globally; both the 3-month SGD SIBOR and the Singapore Overnight Rate Average (SORA) had climbed above 1 percent by mid-May 2022 (Figure 5 and Tables 3 and 4).[7]



Singapore: Daily Financial Conditions Index
(Standard deviations)

Sources: Bloomberg LP and IMF staff calculations.



Singapore FX Intervention
(In billions of USD)

Sources: Monetary Authority of Singapore.

9. Singapore's banking system remains sound, supported by strong buffers. Total regulatory capital to risk weighted assets stood at 16.5 percent in 2022Q1, substantially above the

[7] The MAS introduced SORA as a new short-term benchmark rate given the likely discontinuation of LIBOR after 2021. Since the establishment of an industry-led Steering Committee in 2019 to guide the transition to SORA, its adoption has broadened significantly. For additional information see: https://www.mas.gov.sg/monetary-policy/sora.

10 percent regulatory minimum. Asset quality in local banks continued to hold up, with non-performing loans (NPL) at 1.4 percent of total non-bank loans in 2022Q1. In addition, provisioning coverage remained healthy and local banks' SGD and foreign currency non-bank loan-to-deposit ratios (LTD) remained well below 100 percent in 2022Q1 (Figure 6 and Table 7). In 2022Q1, large domestic banks reported healthy and stable asset quality, and strong balance sheet fundamentals in terms of capital, funding, and liquidity. Some have pursued growth across the Asia-Pacific region through recent acquisitions to further alleviate concentration risk and diversify earnings sources beyond their home market.

10. The nonbank financial sector, a pillar in Singapore's role as an important regional financial hub, continues to perform well. Singapore's asset management industry continues to expand at double-digits with total assets under management (AUM) of about $3.5 trillion in 2020. The industry linkages to the domestic economy is however limited given its focus on cross-border activities.[8] The MAS is enhancing its monitoring of the non-bank financial sector for potential liquidity stresses, and in that respect it has expanded the reporting requirements for fund managers to cover significant redemptions.[9,10] The MAS' 2021 stress-test of insurers and re-insurers showed their ability to meet regulatory capital requirements under a range of macro-financial stresses, including equity price declines, wider credit spreads and lower interest rates.

11. Corporate debt risks remain elevated, **with significant variation across sectors**. Non-financial corporates (NFC) entered the pandemic with high levels of debt (149 percent of GDP in 2019Q4), which increased to 156 percent of GDP by 2021Q2, but has since moderated to 147 percent of GDP as of 2021Q4. Since the height of the pandemic, the maturity profile of NFC debt has improved, with the proportion of short-term debt to total debt falling from 42 percent in 2020Q2 to 40 percent in 2021Q4. While corporate earnings, profitability and debt servicing capacity have recovered, significant disparities in performance persist, given the differentiated COVID-19 restrictions across sectors. Profitability of firms in the property and multi-industry sectors is still below pre-pandemic levels. Debt servicing ability of the construction sector has improved, although it has remained weak, with the interest coverage ratio (ICR) still below pre-pandemic levels, unlike ICRs of firms in most other sectors which surpassed pre-pandemic levels. While the overall corporate NPL ratio fell to 2.7 percent in 2021Q4, some sectors such as transport & storage, and construction recorded NPL ratios as high as 8.9 percent and 7.0 percent respectively in 2021Q4.

12. SMEs, particularly in contact-intensive sectors, remain vulnerable. The proportion of vulnerable SMEs is estimated to be about 30 percentage points higher than that of vulnerable large

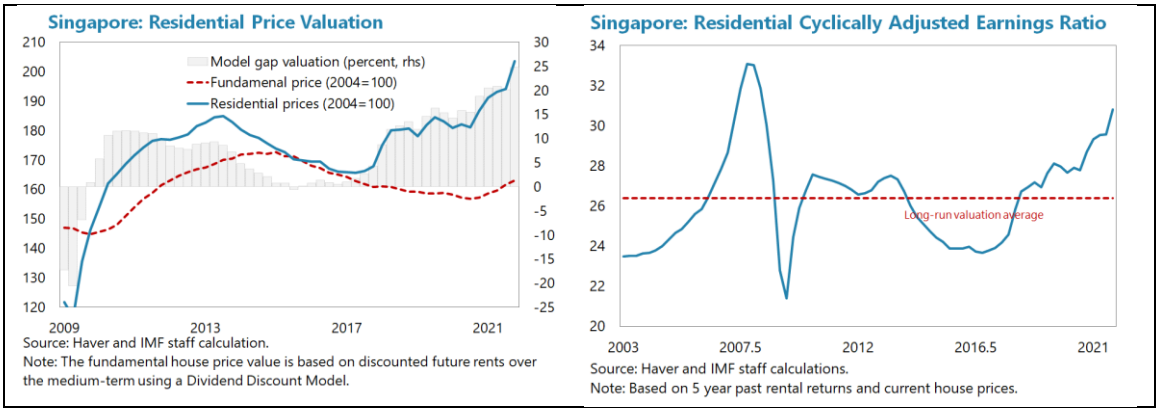
[8] According to MAS' Asset Management Survey, about 78 percent AUM was sourced from outside Singapore, and 87 percent invested abroad in 2020, out of which 68 percent of AUM was invested in Asia Pacific with 33 percent of investments going to Southeast Asia.

[9] Refers to net redemptions above 5 or 10 percent of total assets under management depending on the dealing frequency of the collective investment schemes.

[10] Even though Collective Investment Schemes have faced more instances of significant redemptions in 2021 compared to 2020, largely driven by asset reallocation or portfolio rebalancing by investors, fund managers were able to meet those requests smoothly.

firms.[11] Sectors most affected by the pandemic, such as accommodation, food & beverage, construction, and retail, continue to have a higher proportion of vulnerable firms with weaker cash buffers. The extension of the MAS SGD Facility for Enterprise Singapore (ESG) loans till September 2022 is expected to support accommodative SME financing conditions, particularly in the event that downside risks materialize.[12] Overall, the SMEs' NPL ratio has remained stable (4.4 percent as of 2021Q2) even as credit relief support schemes were gradually unwound.

13. Driven by strong demand, the private residential housing market runs the risk of diverging further from fundamentals, while commercial real estate is recovering following a few slow years due to the pandemic. House price inflation exceeding pre-COVID trends reflects strong dwelling demand driven by a shift to working from home, changes in domestic household formation with more single home households, increase in foreign demand, low real lending rates and constrained supply exacerbated by the pandemic. Some moderation in price growth occurred during the first quarter of 2022 (Figure 7). At close to 90 percent, Singapore already has one of the highest home ownership rates, implying that housing demand is principally being driven by non-residents and resident search for yield activity. Staff analysis suggests that private residential house prices are currently above long-term fundamentals.[13,14] Following a sharp decline in prices in 2020, commercial real estate showed signs of recovery in 2021, with prime office rents rising. However, prices in this segment remain below their pre-pandemic levels.



[11] Based on MAS Financial Stability Review 2021, where a firm is assessed to be vulnerable if ratios of cash to ongoing operational costs and of cash to current liabilities are below MAS' internal threshold.

[12] Since its introduction in April 2020, the Facility has disbursed a total of S$14.2 billion as of February 2022 to eligible financial institutions in support of their lending to companies under the ESG Loan Schemes.

[13] Housing supply is implicitly embedded in the house price valuation metric. Standard asset pricing treats houses as financial assets. The equilibrium between the supply and demand for housing is therefore determined by rents. As houses to buy can quickly change into houses to rent, the markets for buying and renting overlap; if prices are too high, there would be an incentive to rent, which would lead to a fall in prices. If housing supply is constrained, asset pricing predicts a rise in the spot price (rents) of housing. Rental prices thereby provide a measure of relative scarcity.

[14] Private housing prices grew faster than wages which, combined with a tight macroprudential stance that limits mortgage origination, is likely to have widened wealth inequality. The sharp fall in new housing supply in the pipeline despite housing market prices being significantly above construction costs (Tobin's Q above 1) suggests that affordability is likely to remain a concern going forward.

14. The authorities recently tightened macroprudential measures to cool buoyancy in private and public residential real estate markets, complemented by supply-side measures. Systemic risk is elevated but centered mostly in private residential real estate markets, with key macro-financial transmission channels operating through: (i) an elevated level of household debt, which peaked at 71 percent of GDP during the pandemic, about three quarters of which is secured against real estate; (ii) a high share of mortgages with fixed rates for 3 years or less before transitioning to floating rates; (iii) strong foreign demand sustaining private residential valuations[15]; and (iv) property market related loans representing a third of banks' total loans by end-2021. Stable average LTV and DS ratios, normally based on conservative interest rate assumptions, are mitigating factors. Recent measures to moderate residential property prices included (i) raising the Additional Buyer's Stamp Duty (ABSD) rates (text table), (ii) tightening the total debt servicing ratio (TDSR) from 60 to 55 percent, and (iii) tightening the loan to value (LTV) limit for loans from HDB from 90 to 85 percent to encourage greater financial prudence. Based on MAS' estimates, the resident credit-to-GDP gap was 10.6 percent in Q1 2021 but has since moderated to 0 percent. The authorities have also issued advisories urging prudence in new loan origination, particularly for property purchases. These and other measures complement plans to raise the supply of public and private housing with the Housing and Development Board targeting to raise public flat supply by 35 percent in 2022 and 2023.[16]

Adjustments to ABSD Rates for Residential Property

		Rates from 6 July 2018 to 15 December 2021	Rates on or after 16 December 2021
Singapore Citizens	First residential property	0%	0%
	Second residential property	12%	17%
	Third and subsequent residential property	15%	25%
Permanent Residents	First residential property	5%	5%
	Second residential property	15%	25%
	Third and subsequent residential property	15%	30%
Foreigners	Any residential property	20%	30%
Entities	Any residential property	25%	35%

Source: MAS

15. Singapore's external position was substantially stronger than warranted by fundamentals in 2021. The current account (CA) surplus rose to 18.1 percent of GDP (16.8 percent in 2020), reflecting larger surpluses in both the goods and services balances. IMF staff assesses the CA gap at 3.4 to 7.0 percent of GDP (Appendix II). The main drivers of Singapore's external position have been its financial center status and household saving related to rapid aging. Over the medium term, higher public investment in climate resilient infrastructures, aging-related outlays, and the push towards digitalization are expected to help improve the external balance in Singapore. Consistent with the estimated CA imbalance, the 2021 real effective exchange rate is assessed to be undervalued by 6.8 to 14.0 percent, having depreciated by 0.3 percent year-on-year.

[15] The value of foreign transactions spiked since the pandemic up until Q1 2022 at a much faster pace than that of resident transactions over same period. Throughout the pandemic, a greater share of non-resident buyers relative to residents continued to pay higher prices by market segments, under both measures of $per square foot (PSF) and total property value, suggesting that non-resident demand continued to play a key role in setting property prices.

[16] In addition, the government plans to increase private housing through the Government Land Sales (GLS) program. For the GLS Program for the first half of 2022, there will be a 40 percent increase in housing units for the Confirmed List from the previous GLS Program, in the second half of 2021. Supply will be increased even further if demand remains strong.

16. Economic policies have been broadly consistent with past Fund advice. Fiscal, monetary, and financial policies were sufficiently accommodative in response to the pandemic and supported the strong recovery. Policy normalization across all levers have been executed while facilitating a broadening of the recovery, addressing inflationary pressures, and managing risks. The level of government expenditure has continued to grow reflecting aging-related spending and the financing of climate resilient infrastructure, innovation, and targeted transfers to support skills upgrade and reduce inequality.

17. The authorities have made progress in implementing the 2019 FSSA recommendations. Progress has been notable in strengthening cyber resilience, payment system oversight, and US dollar liquidity among D-SIBs.[17] The MAS USD facility, backed by the US$60 billion swap facility with the FED, expired end-2021. The banking system's USD LTD ratios fell to multi-year lows, well below 100 percent as of March 2022, as the increase in foreign currency loans was outpaced by a rise in deposits from increased liquidity in financial markets. MAS is appropriately monitoring banks' USD funding given the risk of abrupt tightening of global financial conditions amid ongoing monetary policy normalization in major AEs. In that respect, MAS has been encouraging banks to continue to strengthen their USD liquidity profiles, and to manage foreign currency risk by diversifying funding sources, conducting regular liquidity stress tests, and having adequate liquidity contingency plans.

OUTLOOK: A RECOVERY FIRMING UP IN THE PRESENCE OF DOWNSIDE RISKS

18. Growth is projected to remain above potential in the near term and broaden across sectors.[18] Staff projects real GDP to grow by 3.7 percent in 2022, driven by pent-up demand as the economy reopens and border restrictions are further eased on the back of the high vaccination.[19] While trade-related sectors may see some moderation amid a potential capacity constraint of the global electronics industry, consumer-facing sectors are expected to rebound as the economy reopens. The construction sector is also expected to further recover as border restrictions on migrant workers ease. Over the medium term, growth is projected to converge to 2½ percent.

19. Inflation is expected to remain elevated in the near term. Headline inflation is projected to rise to 4.8 percent in 2022, before moderating to 2.5 percent in 2023, with MAS core inflation reaching to 3.0 percent in 2022 and 2.0 in 2023. External factors such as the war in Ukraine and the related sanctions, and tight supply conditions are expected to put upward pressures on commodity prices, which will weigh on inflation in 2022 given the high pass-through. On the domestic front, rising costs for car and accommodation and upward pressure on wages are expected to increase

[17] See Appendix VII of CR 21/156.

[18] The elevated household savings compared to pre-COVID levels has held back private consumption growth.

[19] Barring major dislocations to the global economy from the Ukraine war, the Singapore economy should grow at an above-trend pace for the second consecutive year in 2022. The output gap will turn slightly positive, with aggregate GDP having fully recovered from the pandemic-induced decline.

inflation in 2022.[20] The planned GST hike will exert upward pressures on prices in 2023. Inflation is expected to recede over the medium term with MAS core inflation stabilizing at about 2 percent.

20. The current account surplus is projected to narrow as domestic demand strengthens further. The CA surplus is projected at about 13 percent of GDP in 2022 with imports outpacing the continued increase in exports due to stronger domestic demand and a negative term of trade shock as commodity prices rise. Over the medium term, the CA surplus is expected to decline gradually as consumption and capital-related imports recover, notwithstanding a gradual pick up in foreign tourism flows as the economy reopens.

21. The outlook is uncertain, risks are tilted to the downside and mostly external. (Appendix III). While the war in Ukraine and the related sanctions are expected to have a moderate impact on the pace of the recovery, they have amplified downside risks to the outlook and increased uncertainty, adding to the effect of the pandemic. Specifically:

- **War in Ukraine and related sanctions**. Singapore has limited direct exposures to Russia and Ukraine, with bilateral goods trade with the two countries accounting for about ½ percent of GDP in 2021 and tourism flows representing about 0.1 percent of total flows. Considering Singapore's role as a regional financial hub, the impact of the war in Ukraine and the related sanctions could manifest through the financial markets, with potential spillovers to countries in the region (Figure 8). While direct funding from Russia to Singapore's financial center is negligeable, the conflict could expose unhedged commodity-trading firms, with potential spillover risks to the domestic financial sector.[21] The conflict could also raise US dollar funding costs and tighten US dollar liquidity conditions in Singapore and in the region. Other negative spillovers from the war could occur through higher commodity prices and weaker partner country demand, which could be compounded by the effects of sanctions imposed by many countries. Singapore imposed sanctions on Russia in response to the war in Ukraine, including i) export controls on strategic military and high technology goods to Russia; and ii) financial measures against specified Russian banks, entities and activities in Russia, and fund-raising activities benefiting the Russian government. Separately, global economic fragmentation, including fragmentation to the international payment system, from the war in Ukraine and the related sanctions, could pose additional risks. "Friend-shoring" of supply chains (trade relations built around allies or friends) is a source of uncertainty and could also be a major concern. As a small open economy and a trade hub, Singapore could be particularly impacted by economic fragmentation through trade-related channels. For instance, supply chains disruptions could

[20] The authorities announced a further tightening of foreign worker policies by increasing the qualifying salary level for foreign professional workers, and a wage increase for low-income individuals, including through the Progressive Wage Model , further adding to wage pressures.

[21] The MAS is closely monitoring developments in international commodity markets and their potential impact on Singapore's financial system. They noted that commodity trading firms have had to use more derivatives more widely to hedge their exposures against commodity price volatility. As for links to domestic financial sector, local banking groups' aggregated commodities' financing at end 2021 was around 9 percent of their total credit exposures. The banking system continues to provide credit to the commodity trading sector to meet firms' liquidity needs but has also stepped up its monitoring of exposures to such borrowers through frequent stress-testing.

have large detrimental effects for Singapore's electronic sector, which is highly integrated into GVCs and accounts for a quarter of the country's exports and a fifth of total manufacturing employment.

- **Other External risks**. A sharper slowdown in China, Singapore's largest trading partner, poses significant downside risks. As of 2021, Singapore's local banks have remained exposed to Greater China in terms of loans and total assets.[22] Outbreaks of new lethal and highly contagious and vaccine-resistant COVID-19 variants could dampen global economic activity, reduce external demand, and derail the recovery of services consumption. Additional risks include the impact of ongoing policy normalization by major central banks such as the Federal Reserve, including a tightening of U.S. dollar funding conditions, sudden capital outflows, and a sharp correction of financial markets. Tighter financial conditions could also increase risks from SMEs, considering corporate and households balance sheets' vulnerabilities.

- **Domestic risks**. A rise in domestic COVID-19 infections could weaken activity. With rising household debt, the banking sector's exposure to the real estate market is a source of risk. Climate change poses a threat to longer-term growth prospects.

Authorities' Views

22. The authorities broadly agreed with staff's assessment of the outlook. They expect real GDP growth to be slightly above potential, broad-based, and between 3 to 5 percent in 2022, although growth is now likely to come in at the lower half of the forecast range amid a weaker outlook for external demand. The high vaccination rate and lifting of domestic and border restrictions since end-March 2022 are also expected to support the recovery in consumer-facing, air transport, construction, and tourism-related sectors, though activities in most of these sectors may not return to pre-pandemic levels by end-2022. Overall, the tight labor market is expected to gradually normalize with the removal of border restrictions and renewed inflow of migrant workers. Inflation has picked up with broad-based price increases, but the pace would ease toward the end of the year, as external inflationary pressures moderate.

23. The authorities concurred that risks to the outlook are tilted to the downside and that policy making is particularly challenged by the confluence of global shocks and risks. While the war in Ukraine constitutes an upside risk to inflation, its impact on Singapore's growth will be marginal as both indirect and direct exposures to Russia and Ukraine are small. However, the impact could be compounded by confidence effects and supply chain disruptions, which would restrain domestic consumption and investment. In particular, the authorities noted that the global economic fragmentation that may result from the war in Ukraine and the related "friend-shoring" of supply

[22] The direct financial spillovers from property market are likely be limited due to little exposure to Chinese developers. Less than 1 percent of domestic non-bank loans directly exposed to China's property sector and a further 2.5 percent exposed to domestic property developers with operations in China. However, the wider exposure of Singapore's three local banks (DBS, UOB, OCBC) to Greater China, with total asset exposures of between 15 to 24 percent as of end-2021, presents another channel through which a slowdown in China can impact the Singapore's banking sector and its broader economy.

chains or trade relations built around allies is a major risk as it could have detrimental effects, including slower global growth, if it involves a broad range of industries and activities. The authorities are also closely monitoring the risks from continued COVID-related restrictions in some key trading partners as these could lead to lower growth in the region and in Singapore. Other risks include financial stability risks arising from faster-than-expected monetary policy normalization in advanced economies and continued uncertainty over the trajectory of the pandemic.

24. The authorities continue to have reservations about the external balance assessment. They argue that current COVID adjustors may not capture the full impact of the pandemic on Singapore's trade balance. Further, a low standard error derived from the EBA sample (which does not include Singapore), may not accurately reflect the high uncertainty around the assessment given that judgement is involved. In their view, Singapore's CA balance reflects its role as a regional financial hub, and the saving-investment gap is largely driven by demographic factors. High household saving reflects the high share of prime working age population actively saving for retirement as well as social norms such as strong bequest motives. Government saving decreased during the pandemic and continues to reflect prudent and efficient management of fiscal policy. The authorities noted staff's assessment that the policy gap remained close to zero in 2021. They further indicated that over the medium term, the expected increase in public spending needs, including for aging and climate-related spending, will reduce the CA surplus.

POLICIES TO FOSTER A BROAD-BASED RECOVERY AND MANAGE RISKS

A. Near-Term Policy Mix to Broaden the Recovery and Manage Price Pressures and Risks

25. Considering the strong yet uneven recovery, near-term policies should focus on calibrating the pace of normalization across policy levers (fiscal, monetary, and financial) to facilitate a broadening of the recovery, while managing rising price pressures and downside risks.

- Under the baseline, fiscal policy which already pivoted from broad-based support at the height of the pandemic should continue to gradually normalize while providing targeted and temporary support and facilitating post-pandemic economic transformation. Given fluid economic conditions, fiscal policy should remain agile, with targeted and temporary support provided to vulnerable households and firms, including in response to rising fuel and food prices. The tighter monetary policy stance is appropriate to help prevent inflationary pressures from becoming entrenched. Going forward, monetary policy should remain data dependent and focused on preserving price stability considering upside risks to inflation. Macroprudential policies should continue to be tightened when needed to contain systemic financial risks.

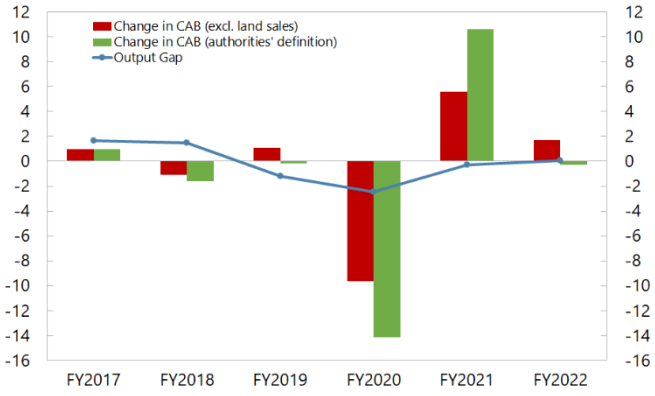
- The exit from the remaining targeted fiscal and financial measures should continue to be aligned with a broadening of recovery across sectors. This implies maintaining targeted and temporary support to vulnerable households and hard-hit but solvent firms, while facilitating resource reallocation and the restructuring of non-viable corporates. As the lending support schemes have helped contain corporate stress during the pandemic, their full withdrawal should be calibrated to reduce risks of an undue and sudden tightening of credit, particularly for SMEs.

- Should downside risks materialize, Singapore has ample fiscal space to deploy further policy support. Fiscal policy, which can best target affected sectors and households and be deployed swiftly in Singapore, should continue to play the role of first line of defense. As existing inflationary pressures are being exacerbated by the conflict in Ukraine, the MAS's policy toolkit which includes recently used parameters reserved to stress episodes (e.g. re-centering the mid-point of the S$NEER policy band), should continue to be deployed when necessary to preserve medium-term price stability. Targeted and time-bound financial sector support could also provide further cushion to adversely affected sectors. A downside stagflation scenario would call for fiscal loosening and further tightening of monetary policy.

B. Fiscal Policy

26. The prudent normalization of fiscal policy in the FY2022 budget is commensurate with the strong yet uneven recovery and will support a smooth transition to a post-pandemic economy (Table 6). With output expected to grow slightly above potential in 2022, the unwinding of most pandemic-related support combined with a further targeting of support to households, vulnerable workers, and firms still impacted by the pandemic, as envisaged in the FY2022 budget, is appropriate. This implies a contractionary fiscal stance with the fiscal deficit (excluding land sales) declining from 2.3 percent of GDP in FY2021 to 0.5 percent of GDP FY2022, mostly due to lower special transfers with the termination in December 2021 of wage subsidies under the Jobs Support Scheme (JSS), the largest support measure in response to the pandemic.[23] The FY2022 budget includes a modest S$1.1bn (0.2 percent of GDP) Jobs and Business Support Package and Household Support Package alongside a S$0.5bn (0.1 percent of GDP) sector-

Singapore: Output Gap and Change in CAB
(In percent of potential GDP, when applicable)



Sources: IMF staff estimates.

[23] Land sales represent the transformation of non-financial assets into financial assets and do not constitute a change in total government net worth, therefore they are not included in the fiscal aggregate in this report. The cyclically adjusted fiscal balance excluding land sales also shows an improvement from -2.3 percent of GDP in 2021 to -0.5 percent of GDP in 2022, implying a negative fiscal impulse of 1.8 percent of GDP. The authorities' definition of the fiscal balance corresponds to a modest 0.3 percent of GDP expansionary fiscal stance in 2022 (using GDP projections from the IMF).

specific package for aviation to provide targeted support to entities still impacted by the pandemic.[24] The budget also extends the Jobs Growth Incentive with lower support rates to incentivize the hiring of vulnerable jobseekers and regularizes the SGUnited Mid-Career Pathways Programme for skills upgrades of mid-career workers. These two measures also facilitate labor reallocation across sectors. The contractionary fiscal stance in FY2022 combined with targeted and temporary fiscal measures support overall policy normalization by limiting inflationary pressures from public demand, while facilitating a broadening of the recovery across sectors.

27. Going forward, the pace of budget adjustment needs to be aligned with the breadth of the recovery. Considering the still uneven recovery, further tightening of the fiscal stance should accommodate continued targeted support for individuals and firms still impacted by the pandemic or other shocks. Singapore's large fiscal reserves allow for an agile, data dependent, and gradual approach to fiscal policy that would facilitate a broadening of the recovery across sectors.

28. Singapore has ample fiscal space to deploy additional support as needed (Appendix IV). Considering significant increases in energy and food prices and the high passthrough to domestic prices, Singapore is well-positioned to provide targeted and temporary support to low-income and vulnerable households.[25] Such targeted approach will also preserve market incentives for Singapore's strategy to transition toward a low-carbon economy in the medium-term. With risks to the downside and the trajectory of the recovery clouded by large uncertainties, Singapore's ample fiscal reserves represent an important risk mitigating factor. Should downside risks materialize, the authorities should have contingency plans ready to deploy additional resources towards targeted economic support. While the size and composition of the contingency plans would depend on the nature and magnitude of the shock under a downside scenario, key aspects would be to ensure adequate and targeted support to the impacted segments of the economy, including through direct social assistance to households. Shocks with a large structural component may call for a strengthening of automatic stabilizers through more permanent enhancements of social protection schemes.

29. The FY2022 budget sets out a roadmap for Singapore to transition towards a greener, digital, and more inclusive economy. The FY2022 budget includes plans to (i) gradually raise the carbon tax rate and fund green infrastructure projects through 2030; (ii) accelerate technological adoption and support research and development (R&D) activities; and (iii) increase the progressivity of the tax system by increasing the personal income tax rate for the highest income brackets and raising property and luxury tax rates. The budget includes plans to raise the Good and Services Tax

[24] The COVID-19 package in the FY2022 budget (1.3 percent of GDP) is smaller than the FY2021 package (2 percent of GDP). The reduced package allows for an extension of the COVID-19 Recovery Grant and introduces a Small Business Recovery Grant for SMEs that provides a payout to SMEs in sectors hard hit by COVID-19 restrictions such as retail, tourism, and hospitality. The Temporary Bridging Loan and the enhanced Trade Loan Scheme have also been extended by six months to support companies with their cash flow needs.

[25] The authorities have already brought forward some of the measures announced in FY2022 Budget in response to inflationary pressures, such as the Small Business Recovery Grant and the Household Support Package, and have indicated readiness to take further actions should the situation worsen.

(GST) from 7 percent to 8 percent on 1 January 2023, and to 9 percent on 1 January 2024 while providing support to mitigate its impact on vulnerable households.[26]

30. Singapore is well-positioned to absorb rising fiscal pressure stemming from spending needed to address medium- and long-term challenges. These challenges include (1) an increase in spending needs due to the rapidly aging population, in particular on healthcare; (2) possible needs to strengthen automatic stabilizers through enhancement of social protection schemes if shocks become more prevalent; (3) risks from climate change given Singapore's vulnerability to rising sea levels; (4) the risk of future pandemics and the associated asymmetric, large economic impacts; and (5) lumpiness in the spending needed to rejuvenate public housing and infrastructure such as rail lines and water, drainage, and sewage systems (Figure 9 and 10). According to Staff's preliminary estimates, the costs of these fiscal pressures could amount to around 5 percent of GDP per year over the long term. While planned revenue mobilization, notably the GST and wealth tax increases, will help meet a part of the financing need, a slower pace of fiscal surplus accumulation may be warranted. Singapore's large fiscal reserves will continue to act as buffers against large scale shocks such as future pandemics (Appendix I).

31. Addressing these sizeable needs through higher public spending will help reduce Singapore's large external surpluses. Higher public spending, in particular investment, will lower net public saving and reduce CA imbalances. For instance, investment in green infrastructure and coastal protection will help build resilience to climate change risks while improving the external position through larger domestic demand. An expansion of social services in areas such as healthcare and unemployment support would reduce incentives for private savings and support stronger consumption.

Authorities' Views

32. The authorities highlighted that fiscal policy has shifted from broad pandemic response to supporting a broadening of the recovery and to post-pandemic priorities. Reflecting the strong economic recovery and tight labor market, fiscal policy has shifted from job support to helping labor force reallocation, while maintaining targeted support to vulnerable entities. In particular, wage subsidies under the JSS, which initially supported the entire stock of local jobs and were subsequently targeted to the sectors most affected by pandemic, were pivotal in minimizing scarring. Noting possible downside risks, the authorities indicated that targeted fiscal support remains the first line of defense, with the design of support measures depending on the types of shocks. They also highlighted that in addition to measures already included in the FY2022 budget to address rising living costs, they stand ready to provide additional support to vulnerable households that would be severely affected by shocks such as the war in Ukraine. The authorities also indicated their ability to decisively respond to the pandemic through the use of reserves, without debt accumulation, allowed them to swiftly shift to post-pandemic priorities, notably to

[26] The budget lays out plans to meet the 15 percent minimum global corporate tax rate by increasing the effective tax rate of companies below the minimum through a top-up tax.

advance inclusiveness and digitalization, and address climate change as illustrated in the FY2022 budget.

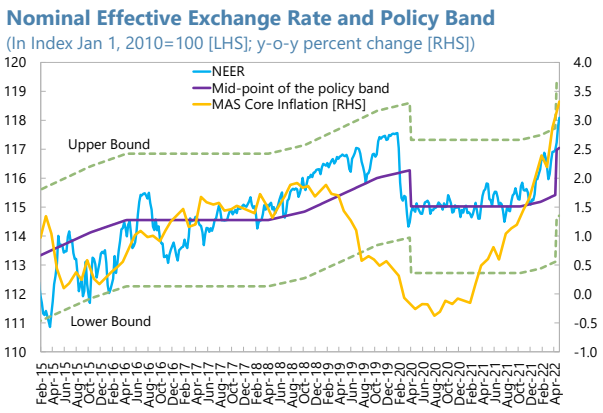
33. The authorities reiterated that Singapore's reserves are important to guard against large shocks and support inter-generational equity. They reiterated the importance of holding sufficient reserves for Singapore's small open economy, with the buffers acting as preemptive insurance against large shocks while ensuring intergenerational equity that is enshrined in the constitution. Preserving contributions from net investment returns to the budget across generations is key for intergenerational equity.[27] The authorities acknowledged the need to spend more over the medium term, including due to population aging and climate change, and to strengthen social safety nets, while maintaining the sustainability of public finances. They also stressed that concomitant with larger collective support, preserving incentives for individual efforts to remain active in the labor market is key for the new social compact, which also aims at reducing income inequality and enhancing social mobility.

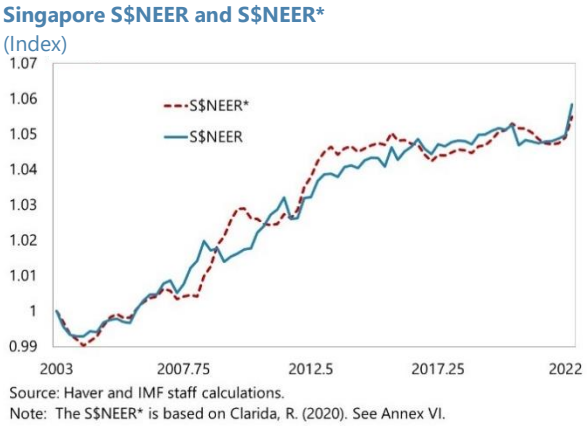
C. Monetary and Financial Sector Policies

34. Singapore's unique monetary policy framework has served the country well since its inception as a robust anchor of price stability. MAS does not have an explicit inflation target but sees a core inflation rate of just under 2 percent, which is close to its historical mean, as consistent with overall price stability. MAS operates a basket, band, and crawl exchange rate-based monetary policy framework in which the S$NEER is managed against an undisclosed basket of currencies, best characterized by a forward-looking Taylor Rule-like policy reaction function with the S$NEER as the short-term policy instrument. Like other central banks, MAS is facing an unprecedented challenge of rising inflation driven by a multitude of shocks, with risks to growth exacerbated by the war in Ukraine, China growth slowdown, amid ongoing policy normalization in advanced economies.

35. Monetary policy has appropriately shifted to a tighter stance, which going forward should remain data dependent, with a continued focus on preserving price stability. The monetary policy stance is assessed to have been broadly neutral in Q1 2022 but has now become tighter given the substantial policy tightening in April 2022. MAS' timely and decisive shift to a tighter stance to curb inflationary pressures, complemented by a tighter fiscal and macroprudential stance, is projected to help bring MAS core inflation to 2 percent in 2023 (Table 1). Given upside risks to inflation and the likely lags that monetary tightening in April 2022 would entail, a data dependent monetary policy stance will help prevent inflationary pressures from becoming entrenched. Further tightening of monetary policy will be warranted, if higher inflation turns out to be more persistent than currently envisaged.

[27] Under the Net Investment Returns framework as stipulated in Singapore's Constitution, up to 50 percent of net investment returns of the reserves can be spent in the Budget. The remainder is re-invested to benefit future generations.





36. Systemic banks are expected to remain solvent in the face of substantial shocks to growth. MAS' 2021 industry-wide stress test of domestic systemically important banks (D-SIBs) simulated an adverse COVID scenario featuring a stalled global recovery due to a resurgence of infections and continued decline of domestic economic activity in 2021, only recovering to pre-pandemic levels in 2023. Despite a significant deterioration of both corporate and retail loan quality, the D-SIBs were expected to remain solvent, with common equity 1 (CET1) capital ratios well above MAS' minimum regulatory requirements. Results from MAS' reverse stress test suggested that macroeconomic stresses would need to be considerably worse than those during Singapore's past crisis periods for banks to fall below their regulatory requirements. Going forward, stress test design should continue to consider banks' exposure to market risk, which is likely to become important given risks of a sharp increase in global interest rates. Staff welcome MAS plans to incorporate climate-related risks in its stress testing by the end of 2022.

37. Singapore's strong economic linkages with China could create potential challenges in the near term. Staff urges the authorities to strengthen systemic risk analysis of China-related exposures and credit risks. Against the backdrop of recent financial stress of several of China's property developers, the credit exposure of Singapore to China's real estate sector should be closely monitored and analyzed, especially given heightened global uncertainty. Staff also urges the authorities to continue to closely monitor banks' significant direct and indirect exposures to non-bank Chinese entities and continue to review banks' periodic stress tests of their large exposures to China—on top of the regular stress testing.

38. As broad-based financial support measures are withdrawn, support for hard hit viable entities in lagging sectors should remain, alongside careful monitoring. The MAS stress-testing of household and corporate balance sheets suggest their resilience to simultaneous interest rate and earnings' shocks. The decline in take-up of credit relief schemes ahead of their expiry in 2021 by individuals and SMEs indicated normalization in debt servicing capacity. However, given sectoral disparities in corporate performance, timely and close surveillance of weaker firms that have large exposures to banks is warranted. Staff therefore welcome MAS' efforts to enhance its existing corporate surveillance framework by looking at additional balance sheet risk indicators, including probabilities of default. Continuous stress testing can also help assess the policy tradeoffs regarding the sequencing of the withdrawal of support policies. Against the backdrop of significant downside

risks, clear and timely communication on the conditions under which existing support measures will be phased and explanation of the factors considered in authorities' decision-making would lower withdrawal costs associated with surprises and abrupt adjustments for firms and financial markets.

39. To preserve the stability and resilience of the financial system, amid elevated house prices, the tight macroprudential stance should be maintained and, if necessary, further tightened should financial risks continue to grow. Staff support the authorities' recent tightening of the Additional Buyer's Stamp Duty (ABSD), which could help contain systemic financial risk posed by a sudden and/or large downward property price correction. Past evidence suggests that this measure and broader macroprudential policies have been effective in moderating speculative demand and house price growth.[28] However, as the ABSD is residency-based, it constitutes a capital flow management and macroprudential measure (CFM/MPM). Staff recommend therefore phasing out the residency-based differentiation once systemic risks from the housing market dissipate. Against the backdrop of rising interest rates, should household leverage and house prices continue to grow strongly, borrower-based macroprudential policies, including LTVs and DSRs, could be tightened further, particularly for multiple property owners. This could be complemented by further measures to realign supply-and demand for housing.

40. The authorities have a robust AML/CFT framework and should continue enhancing its effectiveness to mitigate emerging risks. In the last two years Singapore registered a significant increase in financial flows, including from higher-risk countries, indicating increasing risks related to money laundering and terrorism financing (ML/TF) and evasion of bilateral sanctions.[29] Singapore adopts a modular approach where components of the national risk assessment are published over time. The publication of a consolidated assessment of ML/TF risks at the national level with a further focus on transnational flows should be prioritized.[30] The AML/CFT supervisory strategy is responsive to new/emerging risks. In line with a risk-based approach, the adoption of a minimum engagement model should be considered to ensure that the highest risk entities consistently receive a suitable level and frequency of supervision.[31] The recent enactment of the amendments to the Corporate Registers Act is welcome, but continued efforts should be made to implement it and make beneficial ownership easily available and accessible to prevent the misuse of legal persons and arrangements. Following the roll-out of a licensing regime, steps are underway to supervise local Virtual Asset

[28] See 2019 Singapore Financial Sector Assessment Program and Rafiq, S. (2018), 'Macroprudential Policies in ASEAN' in 'The ASEAN Way: Sustaining Growth and Stability', 2018, ed. Ana Corbacho and Shanaka Peiris, International Monetary Fund.

[29] Based on the staff's analysis of SWIFT data.

[30] Cross-border payments data (at a transactional/entity level) is one source of information that MAS uses to inform its supervisory approach, however, greater focus on the integration of risk factors (including country risk) with payments and economic data (e.g., exports/imports, portfolio/direct investment) on inflows and outflows would further strengthen the systemic analysis of transnational flows and enhance further AML/CFT risk-based supervision of the financial sector.

[31] The minimum engagement model incorporates adequate resources for responsive activities.

Service Providers (VASPs) providing services outside of Singapore for AML/CFT purposes.[32] Given the transient nature of virtual asset activities and the challenges associated with cross-border supervision, sustained efforts are required to mitigate financial integrity risks of the sector.

Authorities' Views

41. Monetary policy decisions continue to be carefully calibrated to ensure medium-term price stability. In response to rising inflation amid a confluence of domestic and external pressures, the authorities noted the need to move quickly and decisively to tighten the monetary policy stance three times since October 2021. In their view, pre-emptive steps towards policy normalization were necessary given lags in monetary policy transmission and upside risks to inflation as the cascading effects from higher global prices had not fully materialized. The more hawkish tightening in April 2022 reflected a careful consideration of the abrupt shift in global and domestic inflation outlooks, amid broadly full employment conditions. Going forward, MAS signaled that they will continuously monitor inflation developments. Further monetary moves would carefully weigh the trajectory of core inflation against heightened uncertainty globally, which alongside shocks to supply, could imply a material shift in the thus far relatively low sacrifice ratio.

42. The financial system remains healthy with strong buffers in place, and the MAS continues to monitor its resilience to evolving shocks. The MAS noted that banks' asset quality has improved with the economic recovery and domestic banks maintain healthy US dollar liquidity profile. The MAS has been engaging regularly with banks to strengthen their liquidity risk management practices. As the financial sector exits a period of unusually low interest rates, the MAS is closely monitoring banking sector resilience to renewed risks, including through updated stress tests. The MAS' industry-wide bank stress testing this year reflects evolving risks, including from developments in China and rising global interest rates. The results of the MAS' exploratory stress-testing exercise for climate-related risks will also inform ongoing conversations with participating financial institutions on understanding and managing climate risks. Following the withdrawal of industry-wide financial sector support measures, the authorities assessed that while continued targeted support to sectors in need is necessary, the declining take-up rates are reassuring. Corporate and household balance sheets remain resilient to further and more severe interest rate and earnings shocks.

43. Tightening of macroprudential policy, including a stamp duty increase in December 2021, was calibrated to address buoyancy, and promote sustainability in residential property markets. The authorities noted that the average value of non-resident transactions had increased at a relatively faster pace compared to that of other groups, and non-resident demand continued to play a major role in setting property prices in Singapore's relatively small market. With the increasing risk of prices diverging from fundamentals, a comprehensive, yet well-targeted, intervention, including coordinated actions by the MAS and the government, was necessary. Since then, early signs of moderation in the property market have been observed, although vigilance is needed as risks of a further upturn remain. The authorities noted a structural trend related to private

[32] The measures are contained in the 2022 Financial Services and Markets (FSM) Bill, which has recently passed Parliament.

residential properties as an investment asset class, supported by Singapore's overall attractiveness as a global city state. The ABSD design would need to take into account the risk-to-return calculus of investors in calibrating differentiated taxation measures for various buyer segments. Accordingly, it remains a critical tool to limit speculative demand and manage systemic risk in the residential real estate market.

44. The authorities will continue to build on the important steps to enhance the AML/CFT framework. In that respect, the MAS is further strengthening its risk-based management of AML/CFT risks through intensified supervision, including by the use of large data analytics, active industry engagements, and the development of a pioneering digital platform for sharing of AML/CFT information and cases across financial institutions (FIs). Given Singapore's financial center status, the MAS will continue to watch such risks closely and make ongoing refinements to regulations and supervision, including to increase FIs' own controls and risk detection capabilities, to strike an appropriate balance between risks and opportunities.

PROMOTING A GREENER, SMARTER, AND MORE INCLUSIVE ECONOMY IN THE POST-PANDEMIC ERA

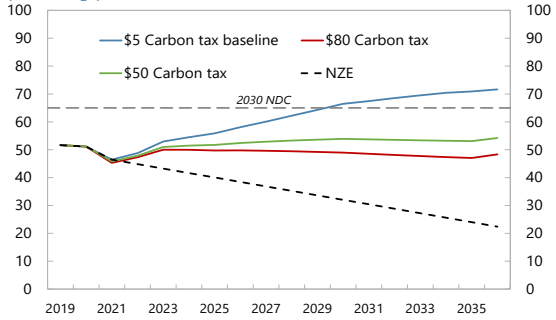
45. As the pandemic subsides, policies have appropriately started to shift towards post-pandemic priorities to foster sustained growth. The authorities plan to accelerate transformation towards a green, digital, and more inclusive economy—objectives that are key and center in the FY2022 budget.

Climate Policies

46. Singapore is significantly exposed to climate change risks. The country is particularly vulnerable to rising sea levels. While addressing climate change is an imperative for a resilient future in Singapore, the country's geography, and natural endowment limit options.

Singapore: Towards Net Zero Emissions (NZE) Pathway

(In $mtCO_2e$)

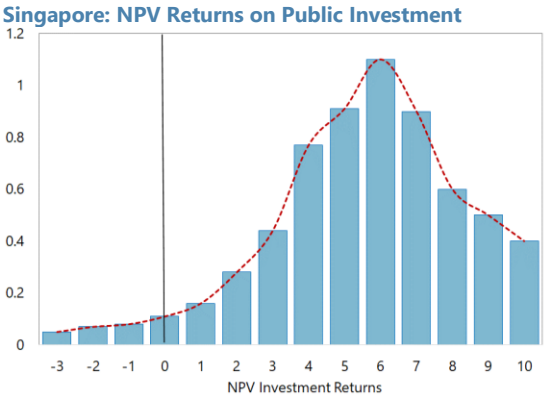


Sources: IMF staff calculations.

47. Singapore needs to enhance climate policies to meet its renewed climate mitigation objectives. The FY2022 budget updated Singapore's climate commitments to achieving net zero emission by or around mid-century (from "as soon as viable in second half of the century"). Singapore's nationally determined contribution (NDC) is to peak emissions levels at 65 $MtCO_2e$ around 2030. To achieve these goals, the carbon tax will be gradually raised from its current low level (S$5 per ton of emissions) to reach S$50 to S$80 per ton by 2030. Staff analysis, based on the IMF/WB Carbon Pricing Assessment Tool (CPAT), suggests that the updated carbon tax path can achieve significant reductions in emissions compared to the previous baseline. The analysis also shows that more needs

to be done to get closer to a linear pathway to the ultimate goal of net zero emissions by mid-century. However, Singapore's additional mitigation policies such as widespread adoption of solar energy and its intention to phase out internal combustion engine vehicles by 2040, which are not captured in this analysis, can go a long way in helping Singapore meet its climate goals. The revenues generated by the updated carbon tax path, which can reach 0.5 percent of GDP by 2030, are appropriately planned to be fully recycled to compensate households and businesses for the resulting increase in energy prices, but more prominently to support green investments. (Box 1).

48. Singapore is also making progress on climate adaptation. The authorities have started to finance major long-term infrastructure projects such as rail lines and infrastructure to protect against rising sea levels under the Significant Infrastructure Government Loan Act. In this context, Singapore plans to issue S$35 billion (6 percent of 2022 GDP) in green bonds by 2030 to fund green infrastructure projects. In addition to deepening the sustainable finance markets, the push for green investment will boost growth and improve the external position.



49. In addition, the MAS is working to develop an ecosystem for sustainable finance.[33] A growing number of financial institutions are establishing regional sustainability hubs in Singapore. Total issuance of sustainable debt in Singapore reached $33.3 billion in 2021, about 12 percent of issuances in Asia, reflecting a surge in sustainability-linked loans, which increased by more than sixfold in 2021 to $20.9 billion.

Digitalization

50. Singapore's sustained initiatives to build digital capabilities and push pervasive innovation across the economy could boost productivity. The FY2022 budget enhances various schemes such as Advanced Digital Solutions and Grow Digital to accelerate the adoption of cutting-edge digital solutions and support upskilling of the digital workforce. Staff analysis shows that Singapore has scope to further expand research and development, which would help the country further reap the benefits of a digital economy, notably through higher productivity growth.[34]

51. The MAS has continued its efforts to promote and advance digital innovations in the financial sector. The MAS has been active in various areas of digital innovation in the financial sector, including digital banks, central bank digital currency (CBDCs), cross-border payment systems and use of crypto assets (Box 2). The authorities' main priorities have been to promote innovation,

[33] See Selected Issues Paper on Green Finance in Singapore in the 2021 Singapore Article IV Report.

[34] See Selected Issues Paper on Digitalization and Productivity in the 2021 Singapore Article IV Report.

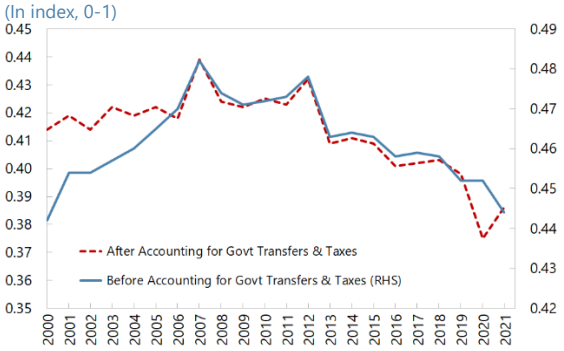
including through improvements of the regulatory framework, while enhancing the resilience of the financial sector.

Equity

52. While targeted social assistance has mitigated the distributional impact of the pandemic, there are risks of rising inequality post-pandemic. Inequality, measured by the Gini coefficient, among resident employed households declined in 2020, followed in 2021 by a relatively higher income growth of households at the bottom of the income distribution.[35] However, the unwinding of COVID-19 relief measures has started to negatively impact inequality after tax and transfers in 2021, a trend that could worsen going forward (Appendix V). The expansion of the social safety system through (i) the extension of the progressive wage model to sectors such as retail, food services and waste management and to occupations like administrators and drivers; (ii) the provision of a wage support for employers to support wage increases of low-income workers through the progressive wage credit scheme (PWCS); (iii) an enhancement of the workfare income supplement; and (iv) the improved progressivity of the income tax system could mitigate distributional issues and foster inclusiveness. These efforts to address inequality in an incentive compatible way and ensure that the vulnerable segments of the population are not left behind are welcome. Going forward, with ample fiscal buffers, Singapore is well placed to further consolidate its gains on a discernible trend decline in inequality.

Singapore: Gini Coefficient Among Resident Employed Households

(In index, 0-1)



Sources: Singapore Department of Statistics.

53. Adapting to the post-COVID world would require continued reskilling to match the demand for new skills and reforms to facilitate resource reallocation to the sectors of the future. As the recovery in employment remains uneven across sectors, ensuring continued reskilling and training, and facilitating restructuring will support capital and labor reallocation to high growth sectors while ensuring inclusiveness. The authorities' training and reskilling initiatives such as SGUnited Mid-Career Pathways-Company Training (SGUP-CT) and SGUnited Skills (SGUS) programs have led to employment opportunities with higher wages, suggesting some labor force reallocation toward more productive sectors.[36] Staff welcome the announcement of the SkillsFuture Career Transition Program (SCTP), a train-and-place scheme that helps individuals upskill and find new jobs, to replace the SGUS and SGUP-CT which expired on March 31, 2022. Furthermore, the SGUnited

[35] The impact of the pandemic on human capital accumulation was also mitigated across groups. Students' performance in national tests during the pandemic was similar to pre-pandemic results as students from lower-income families had access to computer for home-based learning through loans or subsidies.

[36] Based on available information (see report), about 50 percent of trainees earned the same or higher wages compared to 39 percent of trainees who experienced a decline in wages.

Mid-Career Pathways - Company Attachment (SGUP-CA), which is an attach-and-train scheme will be made permanent.

Authorities' Views

54. The authorities reiterated their commitment to accelerate transformation towards a digital, greener, and more inclusive economy. The pandemic has accelerated digital adoption and innovation in various sectors, supported by enhanced public support to encourage digital adoption in SMEs and reskilling programs to facilitate adjustment to technology shifts. The MAS continues to prudently facilitate innovation in finance, including through the use of new technologies in cross-border payments. Despite challenges such as the lack of renewable energy options due to land scarcity, the authorities underscored their commitment to the climate agenda, as evidenced by the announcement that Singapore will raise its ambition to achieve net-zero emission by or around mid-century in the FY2022 budget. This ambition, consistent with the Glasgow Climate Pact, is underpinned by the increase of carbon tax from the current 5SGD to up to 80SGD by 2030 to provide a price signal that anchor incentives towards greener options. The authorities acknowledged that some transitional support may be needed to facilitate the green transition. They noted their aim to foster an inclusive economy through three pillars, including i) mitigating income inequality by uplifting incomes of low-wage workers and targeting support at vulnerable households; ii) enhancing social mobility throughout pre-school, schooling, and working years by investing in early childhood, formal education and lifelong learning efforts for continued employability; and iii) strengthening resilience through collective social support that complements individual efforts.

STAFF APPRAISAL

55. Singapore's targeted containment measures, effective vaccination campaign and decisive policy support helped the economy recover impressively. In 2021, real GDP growth reached 7.6 percent and overall activity surpassed pre-COVID levels, making Singapore one of the top performing advanced economies. However, the recovery has been uneven, with output in tourism-related, consumer-facing and construction sectors remaining below pre-pandemic levels. Developments in 2021 suggest that Singapore's external position remains substantially stronger than warranted by fundamentals and desirable policies.

56. Near-term macroeconomic policies should focus on calibrating the pace of normalization across policy levers. Fiscal policy support, targeting affected entities, should facilitate a broadening of the recovery. Monetary policy should aim at managing price pressures considering upside risks to inflation, including from the war in Ukraine and the related sanctions as well as the tight labor market. Should downside risks materialize, fiscal policy should continue to be the first line of defense and Singapore has ample fiscal space to deploy additional policy support.

57. The calibration of fiscal policy in 2022 is aligned with the strong, yet uneven recovery. The tighter fiscal stance, combined with targeted assistance to vulnerable households, workers, and firms, will support overall policy normalization by limiting inflationary pressures from public demand while facilitating a broadening of the recovery across sectors.

58. Singapore is well-positioned to increase spending to address medium- and long-term challenges, which will also help reduce large external surpluses. Sizeable medium- and long-term spending pressures stem from a rapidly aging population, needs to strengthen social protection schemes, risks from climate change and future pandemics, and the need to rejuvenate public housing and infrastructure. A preliminary quantification of the cost of these challenges suggests that they could amount to 5 percent of GDP per year over the long term. While planned revenue mobilization will help cover some of these costs, a slower pace of fiscal surplus accumulation may be warranted. Singapore's large fiscal reserves will continue to act as buffers against large shocks.

59. The tighter monetary policy stance is appropriate. Considering upside risks to inflation, and the likely lags of recent monetary policy tightening, a data dependent approach to monetary policy would be appropriate, with further tightening warranted if higher inflation turns out to be more persistent than envisaged.

60. Macroprudential policies should continue to moderate any rise of systemic financial risks. The financial sector remains healthy, and the authorities should continue to be vigilant as a premature withdrawal of financial support schemes could increase corporate stress, particularly for SMEs. To preserve the stability and resilience of the financial system, amid elevated house prices, the tight macroprudential stance should be maintained and, if necessary, further tightened should financial risks continue to grow. Combined with the authorities' plans to ramp up housing supply, this would support a soft landing in residential real estate prices.

61. The authorities' efforts to accelerate transformation towards a greener, digital, and more inclusive economy is laudable. As the pandemic subsides, the authorities are appropriately accelerating transformation towards a green, digital, and more inclusive economy as illustrated by steps already taken in the FY2022 budget.

62. It is recommended that the next Article IV consultation with Singapore be held on the standard 12-month cycle.

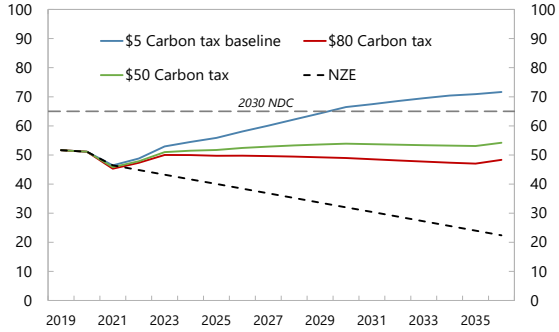
Box 1. Climate Change Mitigation in Singapore

Singapore recently announced a gradually increasing path for its carbon tax to help achieve net zero emissions earlier by or around mid-century. Singapore emits approximately 0.1 percent of annual global CO2, primarily from the energy sector. Singapore's carbon tax, initially imposed in 2019, at only S$5 per tonne of CO_2e emissions but covering around 80 percent of emissions, will remain at this level until 2023 and then increase to S$25 per tonne in 2024 and 2025, S$45 per tonne in 2026 and 2027, with a view to reaching S$50 to S$80 per tonne by 2030. This new path is set to help Singapore achieve its more ambitious plan to reach net zero emissions by or around mid-century (from "as soon as viable in the second half of the century" before). For 2030, Singapore's updated nationally determined contribution (NDC) entails a commitment to peak emissions levels at 65 $MtCO_2e$.

The analysis here relies on the IMF/World Bank Carbon Pricing Assessment Tool (CPAT) which allows a detailed quantitative analysis of carbon pricing mechanisms.[1] CPAT produces country-specific projections of fossil fuel use by major sectors and CO_2 emissions in a business-as-usual (BAU) baseline. It allows rapid estimation of the likely impact of carbon pricing on emissions, fiscal revenues, local air pollution, mortality, and economic welfare, and can thus help policy makers design, compare, and implement such carbon pricing reforms to achieve their climate mitigation NDCs.

The new path for Singapore's carbon tax achieves significant reductions in emissions relative to the BAU baseline. A carbon tax of S$50-S$80 per tonne by 2030 can reduce emissions in Singapore by 19-26 percent below IMF-projected BAU levels in 2030, bringing emissions below the 2030 NDC. The analysis also shows that more needs to be done to get closer to a linear pathway to the ultimate goal of net zero emissions (NZE) by or around mid-century. However, Singapore's additional mitigation policies such as widespread adoption of solar energy and its intention to phase out internal combustion engine vehicles by 2040, which are not captured in this analysis, can go a long way in bringing Singapore closer to the NZE pathway. Building on progress made in electrical vehicles (EV) adoption, the 2022 Budget committed to building more charging points for EVs closer to residential areas.

Singapore: Towards Net Zero Emissions (NZE) Pathway
(In $mtCO_2e$)



Sources: IMF staff calculations.

Singapore is set to benefit from recycling the additional fiscal revenues of the new carbon price path. $50- $80 carbon prices can raise additional fiscal revenues of 0.4-0.5 percent of GDP in 2030. The 2022 Budget announced that all revenues raised from the new carbon tax trajectory will be recycled: some will be used to cushion the impact of higher energy prices on households and firms and the larger part directed towards investments in new low-carbon and more energy efficient solutions. Given that energy prices in the baseline are not artificially low, the increase from carbon taxation will not be very large, and as a result dedicating a higher proportion of the revenues to greening investments is more optimal.

[1] See IMF (2019), "Fiscal Policies for Paris Climate Strategies—from Principle to Practice" for more details on the CPAT.

Box 2. Digital Money and E-Payments in Singapore

Singapore continues to advance innovations in payments. Domestically, the rollout of FAST instant payments (2014), PayNow peer-to-peer payments (2017), and Singapore Quick Response Code allowed cheaper and faster bank-based payments. Abroad, Singapore has been pursuing bilateral payments system linkages to facilitate and reduce costs of small cross-border payments. In 2021, BIS and MAS unveiled Project Nexus, a proposed blueprint for enhancing global real-time payments via multilateral linkages of countries' national retail payment systems.

The MAS is exploring the use of central bank digital currencies (CBDCs), including transactions between multiple CBDCs. Since 2016, several bilateral and multilateral wholesale CBDC projects have been launched, to assess the implementation of real-time fund transfers, with the long-term goal of applying acquired technologies for cross-border securities and payments settlement. The MAS does not see a pressing need for the issuance of a retail CBDC (or digital Sing dollar) at this stage, given high efficiency of national e-payments with most domestic money supply created by commercial banks and in digital form. Even so, the MAS continues to explore applications and build capabilities. The case for a retail CBDC could strengthen if domestic use of foreign digital currencies widens, or if the use of privately issued stable coins needs to be mitigated.

Singapore: Instant Payments Systems (IPS) Linkage Projects

Counterpart	System(s)	Announced	Status
Thailand	PromptPay	Nov 2017	Completed in Apr 2021
India	UPI	Sep 2021	Expected linkage in Q3 2022
Malaysia	DuitNow	Sep 2021	Expected linkage in Q4 2022
Project Nexus	Nexus	Jul 2021	Expected proof of concept in Q4 2022
Philippines	InstaPay	Nov 2021	Collaboration ongoing

Singapore: CBDC Projects

Project	Status	Participant(s)	Goal(s)
Project Ubin	Completed Jul 2020	BOC, BOE, SGX, Temasek, banks, tech firms	Blockchain-based multi-currency payments network prototype, with findings.
Multi Currency Corridor Network	Completed Jul 2021	Banque de France, JP Morgan	First m-CBDC experiment that applied automated market making and liquidity management to reap cross-border payments, settlements efficiencies.
Project Dunbar	Completed Mar 2022	BIS Innovation Hub, RBA, BNM, SARB	Shared-platform prototypes for cross-border m-CBDC transactions, with findings, possible next steps.
Project Orchid	Ongoing	Private sector	Technological infrastructure, technical competencies needed to issue digital Singapore dollar.

Source: Monetary Authority of Singapore

Singapore's cryptocurrency market is relatively small. According to the MAS, the combined peak daily trading volumes of SGD-quoted Bitcoin, Ethereum and XRP was 2 percent of the average daily trading volume of securities on SGX in 2020. Cryptocurrency derivatives traded through financial institutions amounted to less than 1 percent of derivatives trading activity on SGX. Cryptocurrencies comprise less than 0.01 percent of the assets managed by MAS-regulated funds.

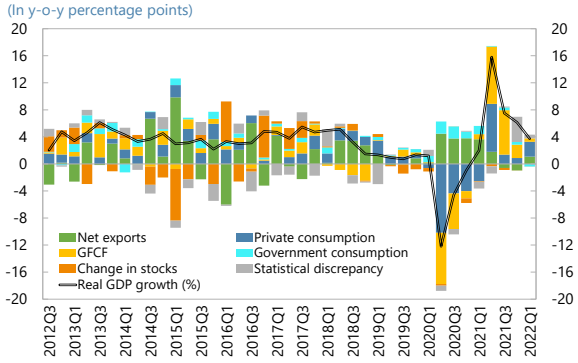
The MAS' cryptocurrency regulatory approach is 'no bans, but strong regulation'. Entities are required under the Payment Services Act (PSA) to be licensed before providing digital payment token (DPT, better known as cryptocurrency) services. Given their limited scale, these entities are regulated primarily for money laundering, terrorism financing, and technology risks. However, the MAS has powers to impose additional measures as needed. In 2021, MAS announced an expansion to the definition of DPT services to align with the revised standards by the Financial Action Task Force (FATF). Cryptocurrency funds are also not authorized for sale to retail investors. In January 2022, MAS issued guidelines to discourage cryptocurrency trading by the general public.

Figure 1. Singapore: Real Sector Developments

After contracting by 4.1 percent in 2020 amid COVID-19, the economy strongly recovered in 2021 on the back of a rebound in private consumption.

Singapore: Contribution to Real GDP Growth by Expenditure

(In y-o-y percentage points)

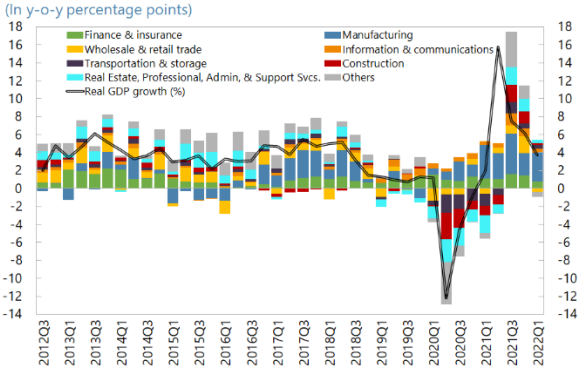


Sources: Singapore Ministry of Trade and Industry, CEIC Data, and IMF staff

The recovery is however uneven, led by the manufacturing and tech sectors while consumer-facing services and construction remained under pre-pandemic levels.

Singapore: Contribution to Real GDP Growth By Industry

(In y-o-y percentage points)

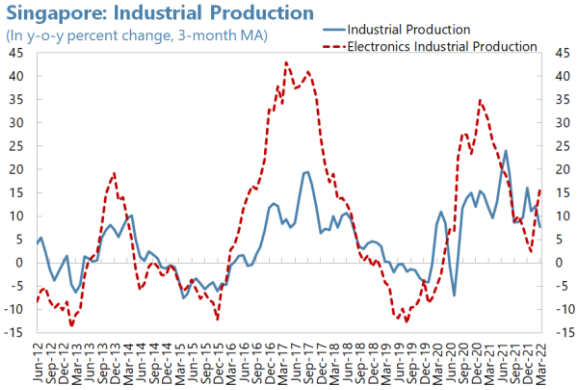


Sources: Singapore Department of Statistics, CEIC Data, and IMF staff calculations.

Strong growth in the manufacturing sector was supported by upturn of the global electronics cycle, which however has started to moderate.

Singapore: Industrial Production

(In y-o-y percent change, 3-month MA)

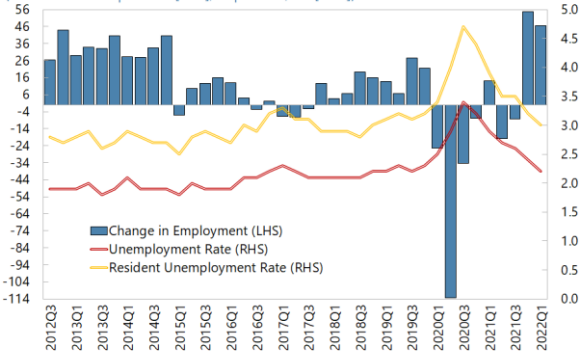


Sources: Singapore Economic Development Board, CEIC Data, and IMF staff

The strong rebound has led to an improvement in the labor market with unemployment decreasing to about the pre-pandemic level.

Singapore: Employment and Unemployment

(In thousands of persons [LHS]; in percent, SA [RHS])

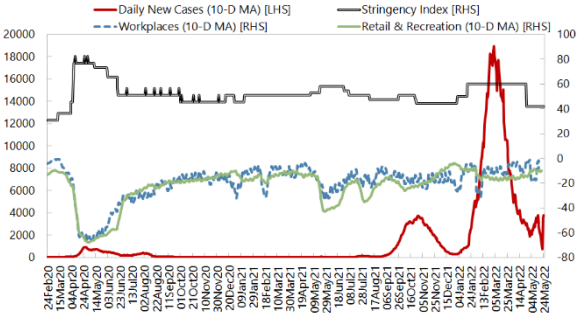


Sources: Singapore Ministry of Manpower and CEIC Data.

Daily new COVID-19 cases have fallen sharply from the Omicron peak as containment measures remain strong and mobility remains below pre-pandemic levels...

Singapore: COVID-19, Stringency Index, & Mobility Trends

(Number of cases [LHS]; Index [RHS]; Percent changes [RHS])

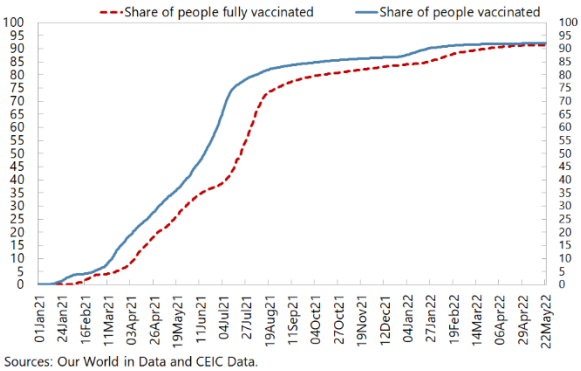


Sources: JHU CSSE, Univ. of Oxford, CEIC Data, Google Community Mobility Reports, & IMF Staff Calculations.
Note: Mobility data from Google represents changes for each day compared to median value, for corresponding day of the week, during the 5-week period Jan 3-Feb 6, 2020.

...while the share of fully vaccinated people neared 92 percent.

Singapore: COVID-19 Vaccinations

(In percent share of total population)

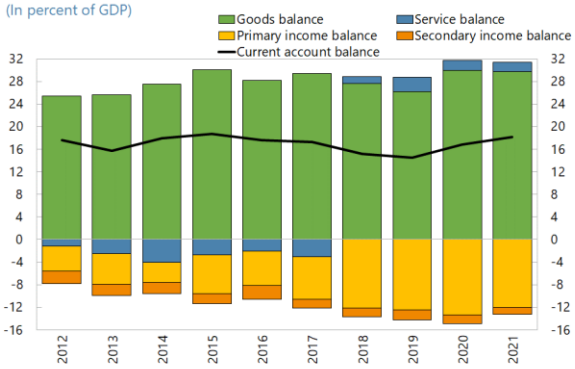


Sources: Our World in Data and CEIC Data.

Figure 2. Singapore: External Sector

The current account (CA) surplus increased to 18.1 percent of GDP in 2021, reflecting larger surpluses in both the goods and services balances.

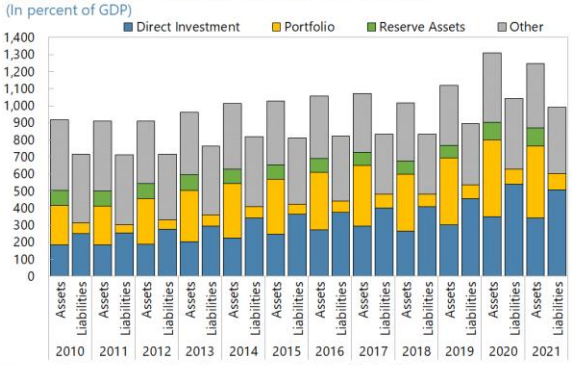
Singapore: Current Account Balance
(In percent of GDP)



Sources: Singapore Dept. of Statistics, CEIC Data, and IMF staff calculations.

Singapore has a net asset position in portfolio investment and a net liability position in FDI holdings.

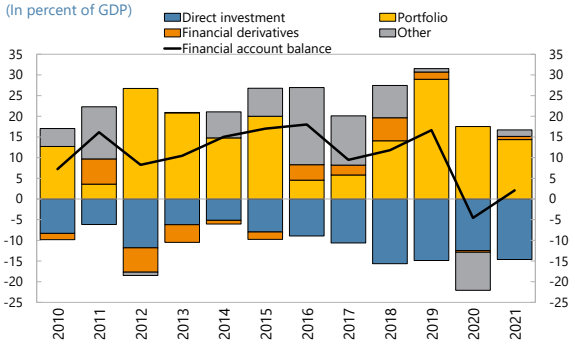
Singapore: International Investment Position
(In percent of GDP)



Sources: Singapore Dept. of Statistics, CEIC Data, & IMF staff calculations.

The financial account recorded net capital outflows in 2021, reflecting net outflows of portfolio investment and in "other investment". Net FDI inflows increased in 2021.

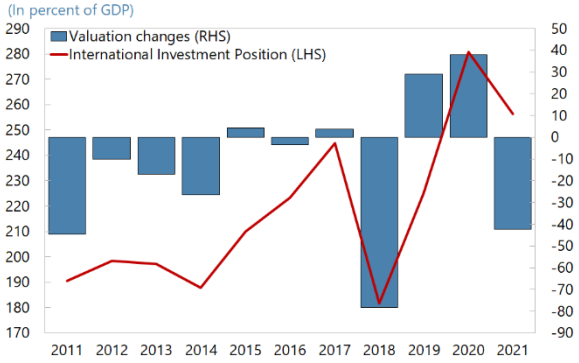
Singapore: Financial Account Balance by Type of Investment
(In percent of GDP)



Note: Under the BPM6 methodology negative values imply net inflows.
Sources: Singapore Dept. of Statistics, CEIC Data, & IMF staff calculations.

The net international investment position (NIIP) decreased to 256.4 percent of GDP in 2021 due to negative valuation effects.

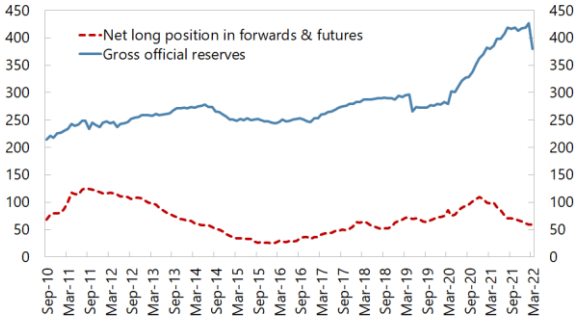
Singapore: Intl. Investment Position & Valuation Changes
(In percent of GDP)



Sources: Singapore Department of Statistics, CEIC Data, and IMF staff calculations.

Gross official reserves increased in 2021.

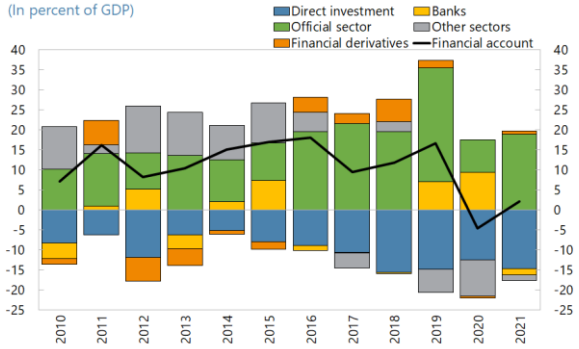
Singapore: Central Bank Gross Official Reserves and Net Foreign Currency Position in Forwards & Futures
(In billions of USD)



Sources: Monetary Authority of Singapore and CEIC Data.

Official flows account for most of the financial outflows.

Singapore: Financial Account Net Flows by Sector
(In percent of GDP)



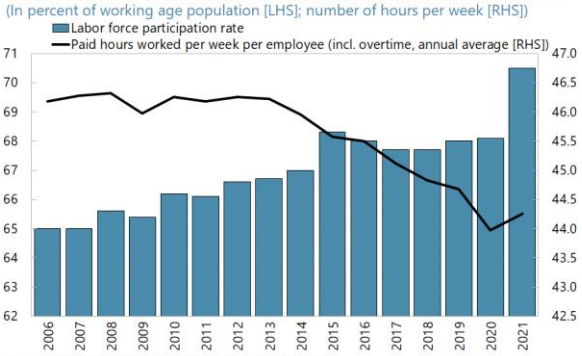
Note: Under the BPM6 methodology negative values imply net inflows.
Sources: Singapore Dept. of Statistics, CEIC Data, & IMF staff calculations.

Figure 3. Singapore: Labor Market Developments

Residents' labor force participation rose in 2021.

Singapore: Labor Force Participation Rate & Hours Worked

(In percent of working age population [LHS]; number of hours per week [RHS])

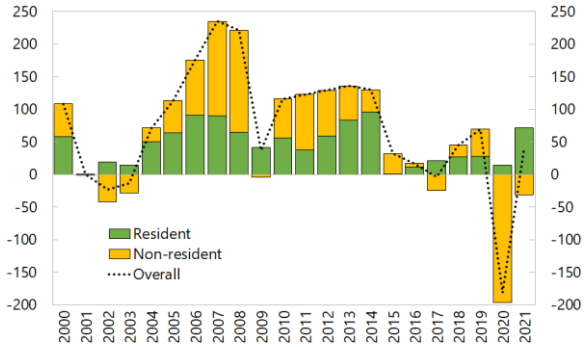


Note: Labor force participation data are as of mid-year.
Sources: Singapore Ministry of Manpower and CEIC Data.

Total employment recovered in 2021 driven by resident employment.

Singapore: Change in Employment by Residency

(In thousands of persons)

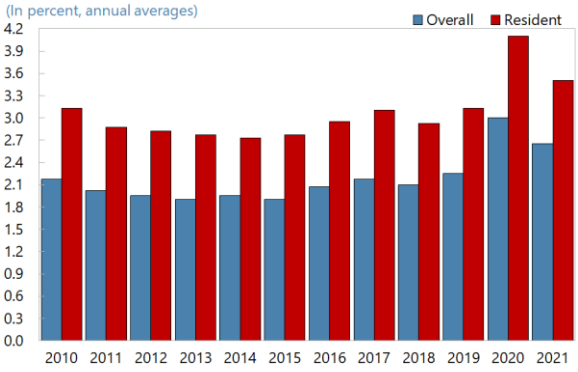


Sources: Singapore Ministry of Manpower and Haver Analytics.

The overall unemployment rate decreased in 2021 and was only slightly above the pre-pandemic level.

Singapore: Overall and Resident Unemployment Rates

(In percent, annual averages)

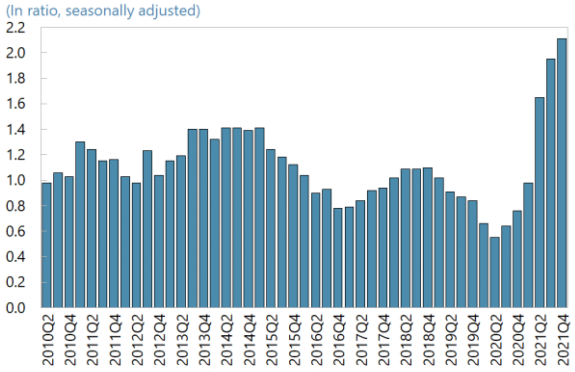


Sources: Singapore Ministry of Manpower and CEIC Data.

Labor market tightened in 2021, with a significant rise in job vacancies relative to job seekers.

Singapore: Job Vacancy to Unemployed Persons Ratio

(In ratio, seasonally adjusted)

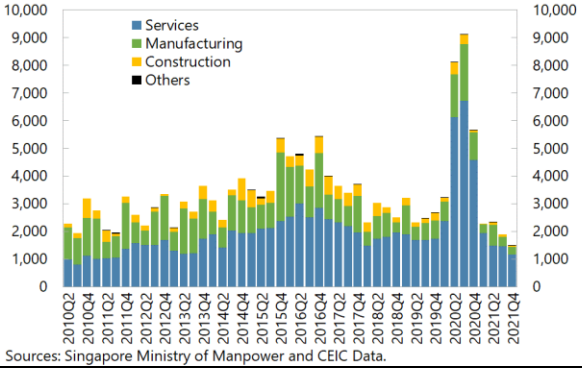


Sources: Singapore Ministry of Manpower and CEIC Data.

After soaring in 2020, the number of retrenched workers declined to the pre-pandemic level.

Singapore: Retrenchment by Sector

(In persons)

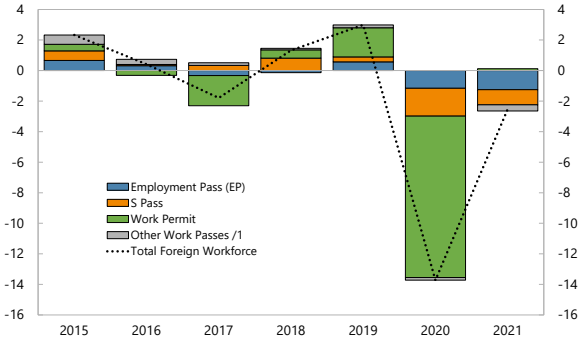


Sources: Singapore Ministry of Manpower and CEIC Data.

The contraction in the foreign workforce was largest for high-skilled and semi-skilled work permit holders as requirements were tightened.

Singapore: Contributions to Change in Total Foreign Workforce

(In percent)

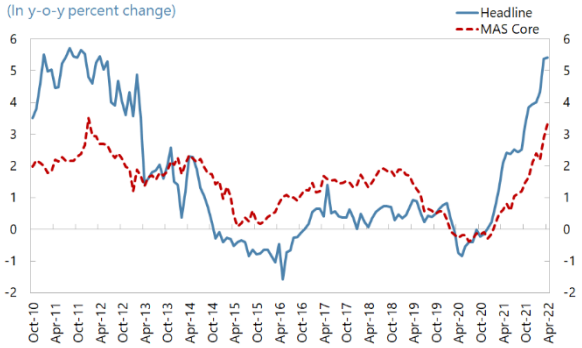


Sources: Singapore Ministry of Manpower, CEIC Data, and IMF staff calculations.

Figure 4. Singapore: Inflation Developments

Both headline and MAS core increased rapidly in 2021…

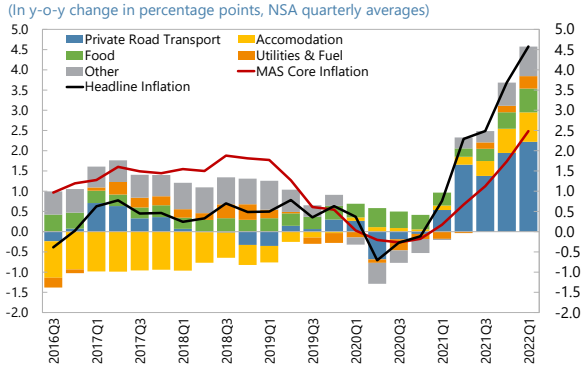
Singapore: Headline and MAS Core Inflation
(In y-o-y percent change)



Note: MAS Core Inflation tracks prices of all components of headline inflation except for accomodation and private transport. Sources: Singapore Dept. of Statistics and CEIC Data.

… driven by private road transportation and food prices respectively.

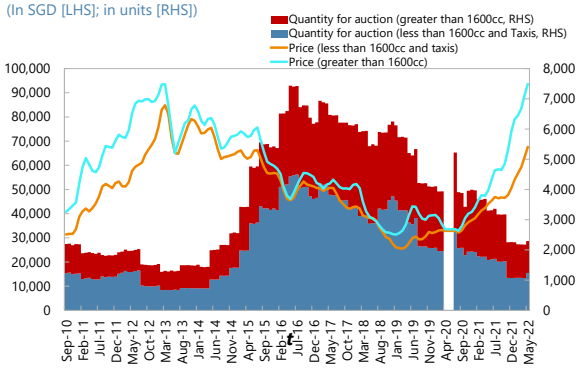
Singapore: MAS Core Inflation & Contributions to Headline Inflation
(In y-o-y change in percentage points, NSA quarterly averages)



Sources: Singapore Department of Statistics, CEIC Data, and IMF staff calculations.

The prices of cars and car ownership certificates rose in 2021 as bidding resumed following the COVID19-related suspension, supporting the spike in headline inflation…

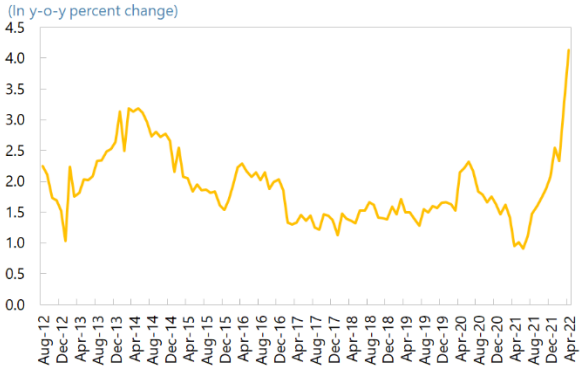
Singapore: Car Certificates of Ownership, Price, & Quantity
(In SGD [LHS]; in units [RHS])



Note: Data not released for Apr-Jun 2020. Sources: CEIC Data and IMF staff calculations.

…And food prices picked up.

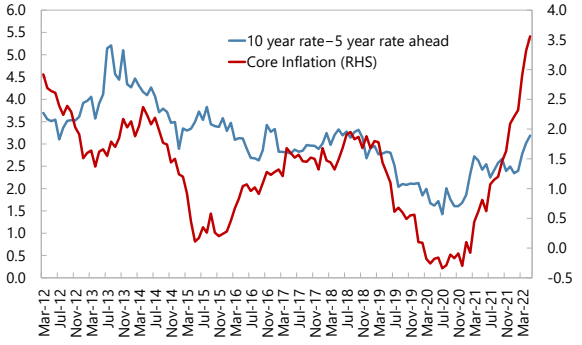
Singapore: Inflation in Food Prices
(In y-o-y percent change)



Sources: Singapore Dept. of Statistics and CEIC Data.

However, inflation expectations remain well-anchored based on market pricing …

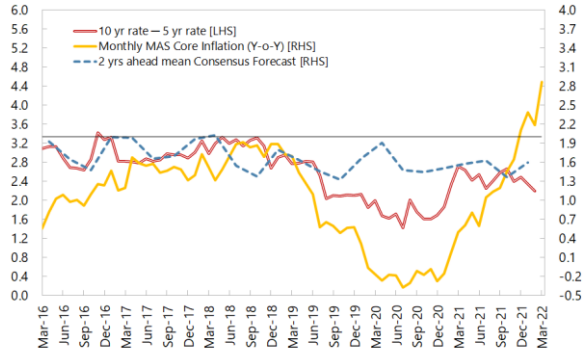
Singapore: Market Pricing of Inflation
(In percent)



Sources: Haver Analytics and Bloomberg L.P.

… and consensus forecast.

Singapore: Inflation Expectations
(In percent)



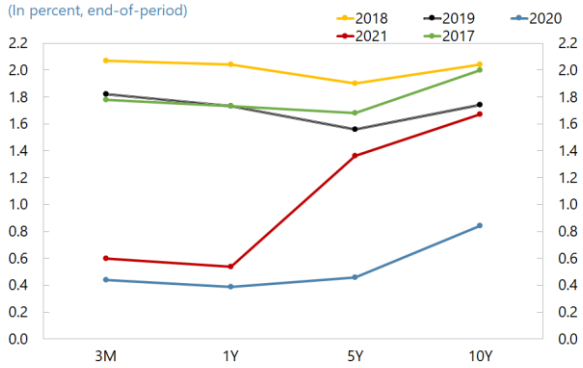
Sources: Monetary Authority of Singapore, Bloomberg LP, Consensus Economics, and CEIC Data.

Figure 5. Singapore: Monetary and Financial Sector Developments

The yield curve has shifted up…

Singapore: Government Bond Yields

(In percent, end-of-period)

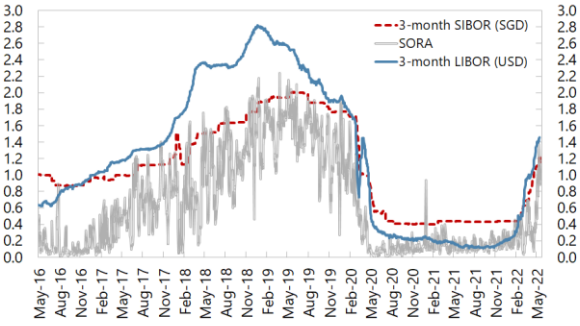


Sources: Monetary Authority of Singapore and CEIC Data.

…and with global rates, money market rates in Singapore have started to edge up.

Singapore: Interest Rates

(In percent)

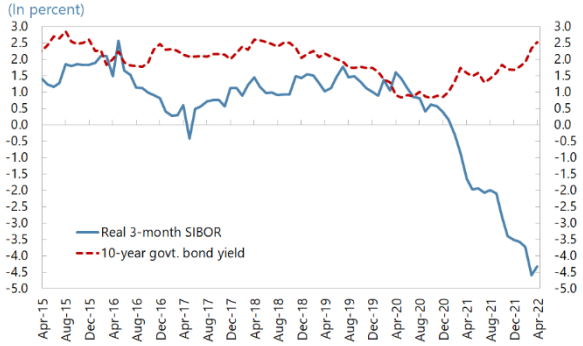


Note: The last observation is May 24, 2022.
Sources: ICE Benchmark Administration, Association of Banks in Singapore, MAS, & CEIC Data.

The government bond yields have increased.

Singapore: Real Interest Rate and Government Bond Yield

(In percent)

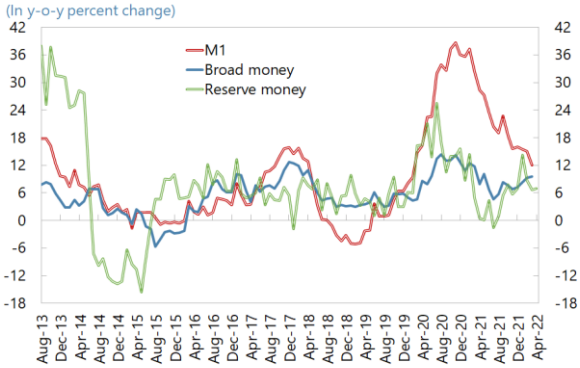


Sources: Monetary Authority of Singapore, Association of Banks in Singapore, SGP Dept. of Statistics, CEIC Data, & IMF staff calculations.

Broad money growth has increased slightly.

Singapore: Growth in Monetary Aggregates

(In y-o-y percent change)

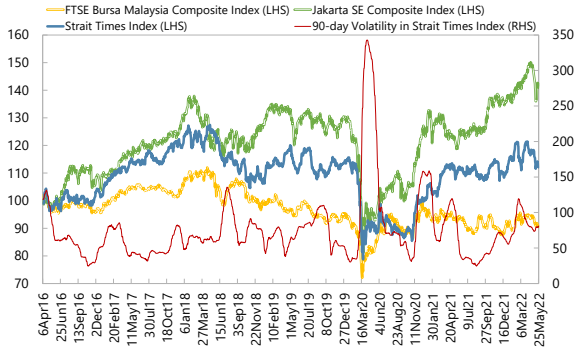


Sources: Monetary Authority of Singapore and CEIC Data.

The Singapore stock market fell sharply in the initial phase of the pandemic but has recovered to pre-pandemic levels.

Singapore: Stock Market Indices and Volatility

(In index, Jan. 4, 2016=100 [LHS]; standard deviation [RHS])

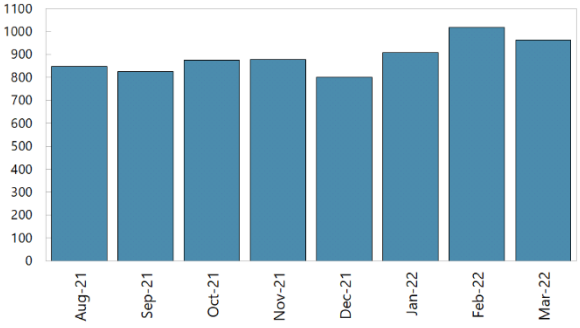


Sources: Bursa Malaysia, Indonesia Stock Exchange, Singapore Exchange, and CEIC Data.

Foreign exchange market turnover is increasing in 2022.

Singapore: Forex Market Daily Average Turnover

(In billions of USD)

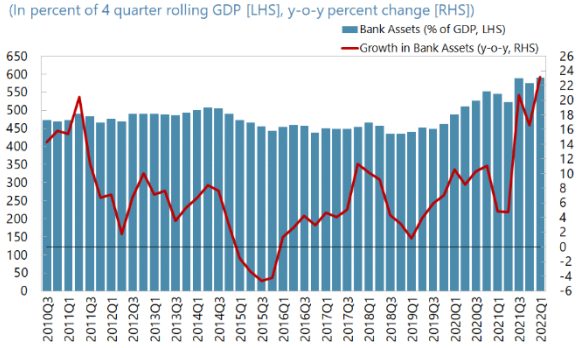


Note: Data prior to July 2021 not included because of a significant structural break.
Sources: Monetary Authority of Singapore and CEIC Data.

Figure 6. Singapore: Banking Sector Developments

Banking sector assets as share of GDP increased.

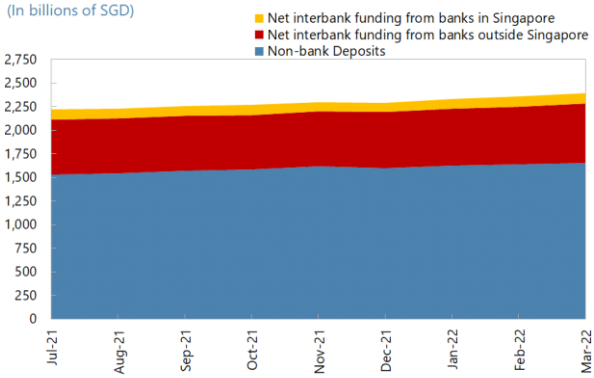
Singapore: Banking Assets
(In percent of 4 quarter rolling GDP [LHS], y-o-y percent change [RHS])



Note: Data has a structural break in July 2021 reflecting removal of DBU-ACU divide & revision of MAS 610/1003. Sources: Monetary Authority of Singapore and CEIC Data.

Non-bank deposits are the largest funding sources for banks.

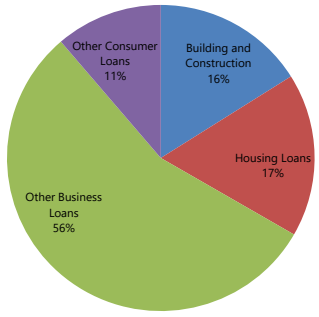
Singapore: Funding Structure of the Banking System
(In billions of SGD)



Sources: Monetary Authority of Singapore and CEIC Data.

Property-market related loans (housing loans and loans to the building and construction sectors) account for 33 percent of total domestic non-bank loans.

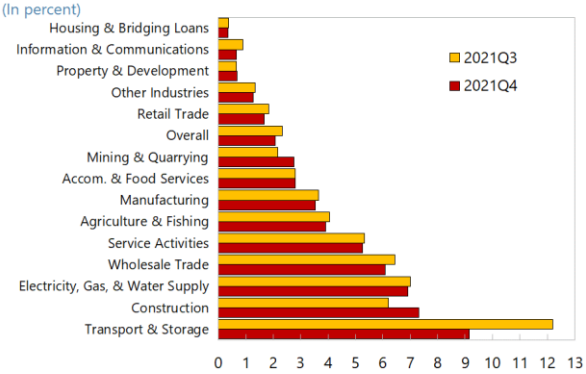
Singapore: Commercial Bank Loans & Advances by Purpose, Mar 2022
(In percent of total commercial bank loans & advances)



Sources: Monetary Authority of Singapore, CEIC Data, and IMF staff calculations.

Transport, storage, and construction sectors have the highest non-performing loans.

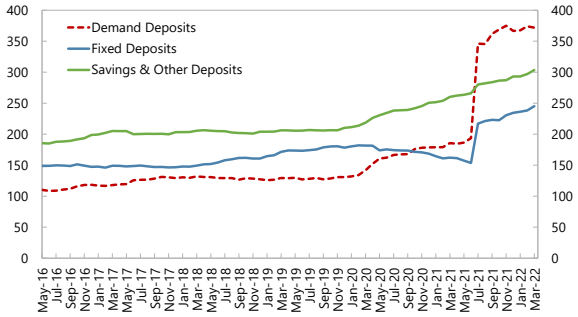
Singapore: Non-Peforming Loans by Sector
(In percent)



Sources: Monetary Authority of Singapore and CEIC Data.

Deposits increased strongly in the wake of the pandemic, with a shift from fixed to demand and savings deposits.

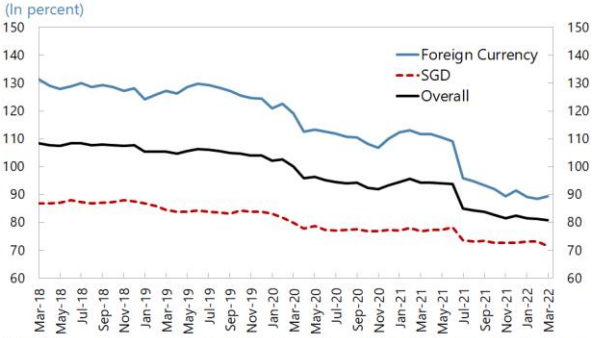
Singapore: Resident Deposits
(In billions of SGD)



Note: Data has a structural break in July 2021 reflecting removal of DBU-ACU divide & revision of MAS 610/1003.
Sources: Monetary Authority of Singapore and CEIC Data.

The banking sector's foreign currency loan-to-deposit ratio continued to decline in 2021.

Singapore: Loan to Deposit Ratio by Currency
(In percent)

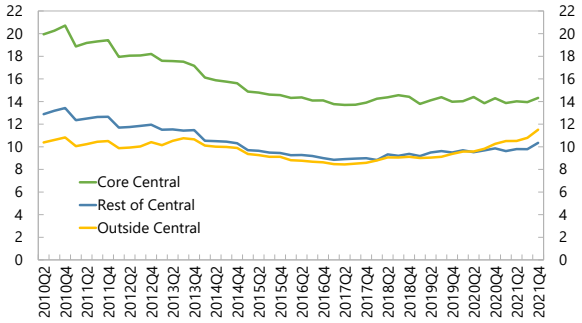


Note: This covers loans extended by the banking sector, excluding interbank lending. Data has a structural break in July 2021 reflecting removal of DBU-ACU divide & revision of MAS 610/1003.
Source: Monetary Authority of Singapore.

Figure 7. Singapore: Housing Market Developments

The house price-to-income ratio remained broadly stable.

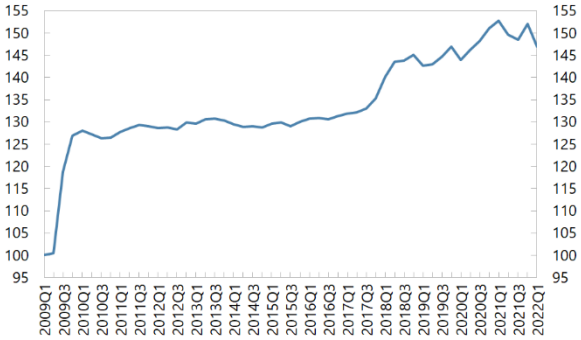
Singapore: Median Private Property Prices & Household Income
(In price per sq. ft of non-landed units in each region, as a share of annual median household income)



Sources: SGP Urban Redevelopment Authority, CEIC Data, and IMF staff calculations.

The house price-to-rent ratio has increased.

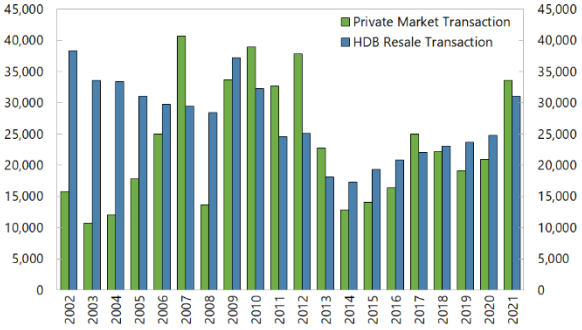
Singapore: House Price to Rent Ratio
(In index, 2009Q1=100)



Sources: SGP Urban Redevelopment Authority, CEIC Data, & IMF staff calculations.

Private market transactions increased in 2021....

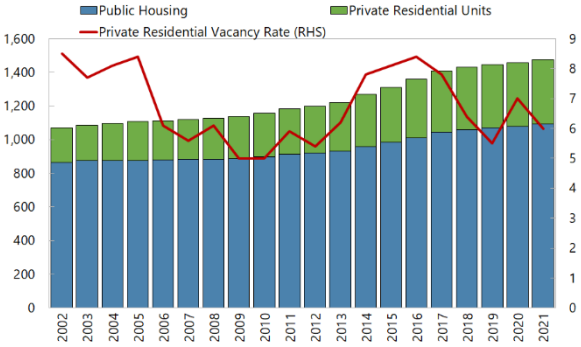
Singapore: Private & Public Residential Transactions
(In units)



Sources: Singapore Urban Redevelopment Authority, Singapore Housing & Development Board, and CEIC Data.

...and the vacancy ratio in the private market has further decreased.

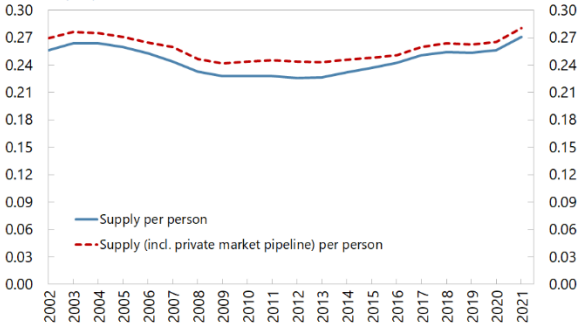
Singapore: Housing Stock and Vacancy
(In thousands of units [LHS]; percent of total stock [RHS])



Sources: Singapore Urban Redevelopment Authority, Singapore Dept. of Statistics, & CEIC Data.

Housing supply per capita remains stable...

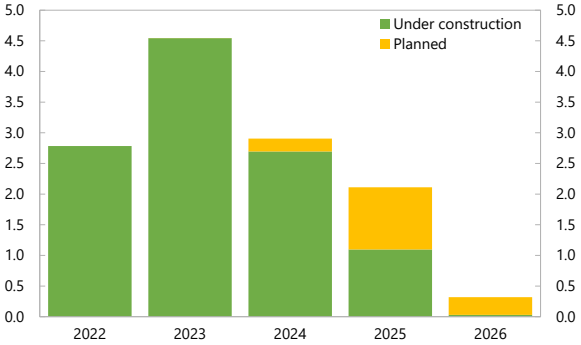
Singapore: Housing Supply per Person
(In units per person)



Sources: Singapore Urban Redevelopment Authority, Singapore Dept. of Statistics, CEIC Data, and IMF staff calculations.

and supply is expected to increase in the coming years.

Singapore: Upcoming Private Residential Supply Pipeline, 2022Q1
(In percent of 2019Q4 private residential stock)

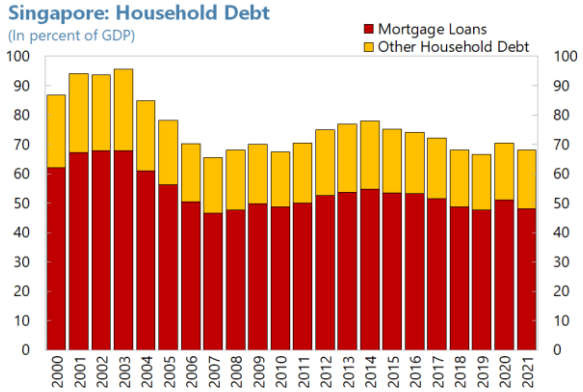


Sources: Singapore Urban Redevelopment Authority, CEIC Data, and IMF staff

Figure 7. Singapore: Housing Market Developments (Concluded)

Household debts, including housing loans, have declined since 2015, but increased in 2020 owing to lower GDP.

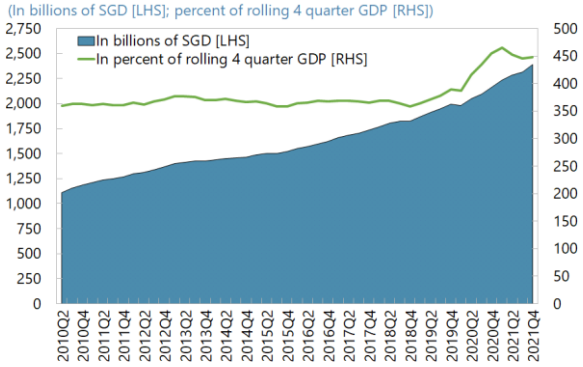
Singapore: Household Debt
(In percent of GDP)



Sources: Singapore Dept. of Statistics, Haver Analytics, and IMF staff calculations.

… and households' balance sheets are strong with their total net worth standing at over 450 percent of GDP …

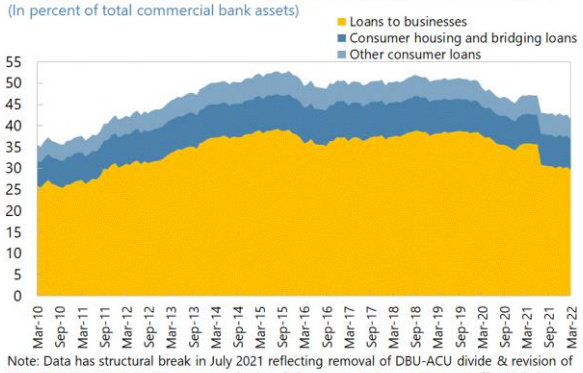
Singapore: Household Net Wealth
(In billions of SGD [LHS]; percent of rolling 4 quarter GDP [RHS])



Sources: Singapore Dept. of Statistics, CEIC Data, and IMF staff calculations.

Banks' exposure to private housing loans has slightly declined

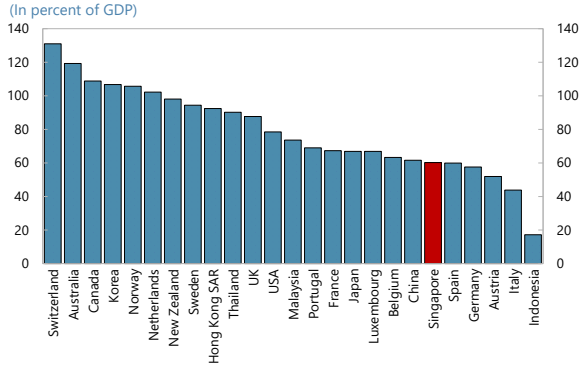
Singapore: Commercial Bank Loans by Type of Borrowers
(In percent of total commercial bank assets)



Note: Data has structural break in July 2021 reflecting removal of DBU-ACU divide & revision of MAS 610/1003. Sources: Monetary Authority of Singapore, CEIC Data, & IMF staff calculations.

Household debt-to-GDP ratio is lower than peers...

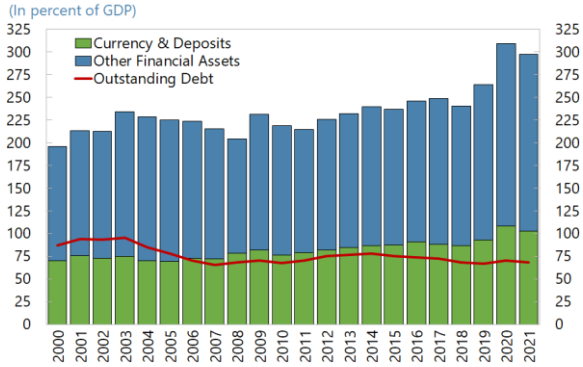
Singapore: Household Debt, 2021Q3
(In percent of GDP)



Sources: Bank for International Settlements.

… and liquid financial assets are enough to cover current debt outstanding in aggregate.

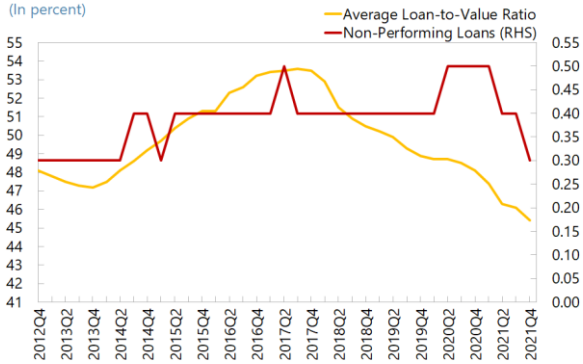
Singapore: Household Financial Wealth & Debt Outstanding
(In percent of GDP)



Sources: Singapore Dept. of Statistics, Haver Analytics, and IMF staff calculations.

The quality of housing loans remains strong, with a declining average loan-to-value (LTV) ratio.

Singapore: Quality of Housing Loans
(In percent)



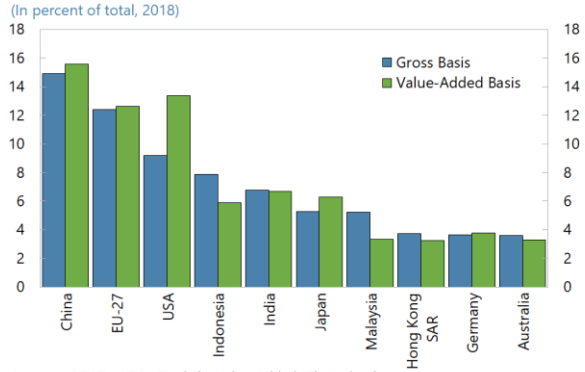
Sources: Monetary Authority of Singapore and CEIC Data.

Figure 8. Singapore: Spillovers

Singapore depends mainly on foreign final demand from the China, EU, and the US, while Malaysia and Indonesia are important partners within the region.

Value-Added in Foreign Final Demand versus Gross Exports

(In percent of total, 2018)

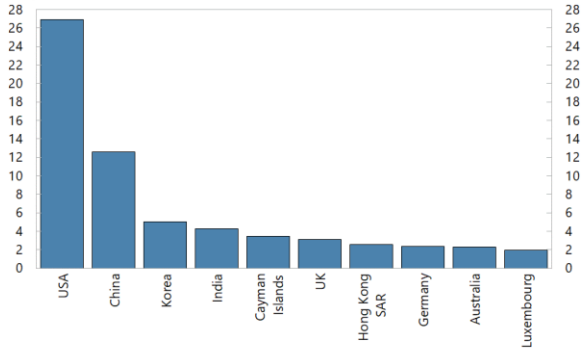


Sources: OECD-WTO, *Trade in Value Added (TiVA)* database.

Singapore has large portfolio assets, which would make its external balance sheet vulnerable to shocks in the US and several regional economies such as China and India.

Singapore: Composition of Portfolio Investment Assets

(In percent of total, 2020)

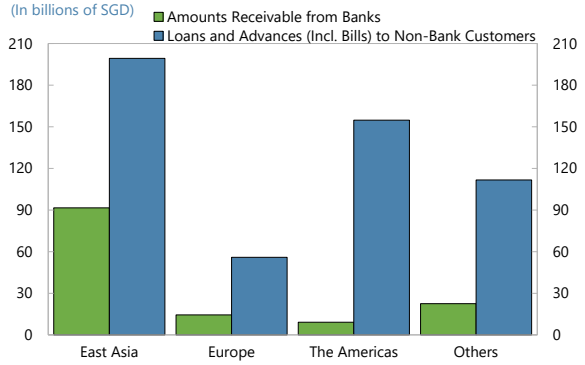


Sources: IMF, *Coordinated Portfolio Investment Survey (CPIS)* and IMF staff calculations.

East Asia is a major user of funds and likely to experience outward spillovers from Singapore, in the event of a banking sector stress in Singapore.

Singapore: Banking System Use of Funds by Region, Mar 2022

(In billions of SGD)

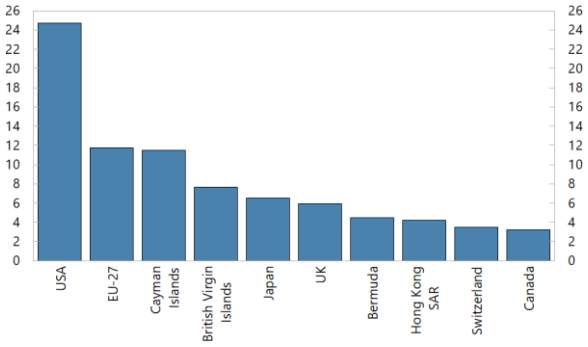


Sources: Monetary Authority of Singapore and CEIC Data.

FDI stocks are also dominated by the US and EU and are mainly concentrated in the finance and insurance sector.

Singapore: FDI by Top Source Country

(In percent of total stock, end 2020)

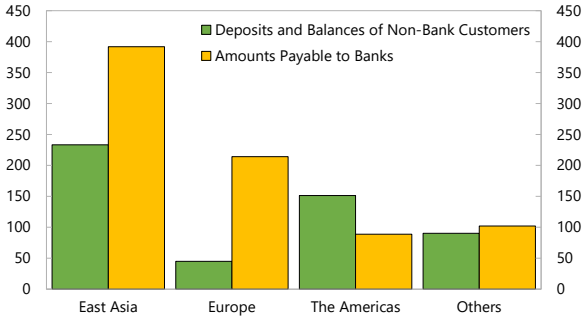


Sources: Singapore Department of Statistics, CEIC Data, and IMF staff calculations.

Major sources of funding for Singapore's financial center include East Asian and European banks.

Singapore: Banking System External Funding Sources by Region, Mar 2022

(In billions of SGD)

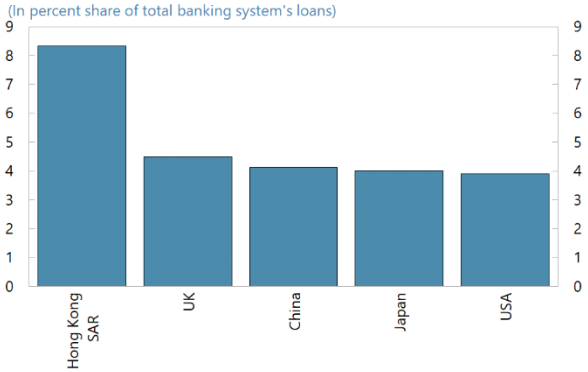


Sources: Monetary Authority of Singapore, CEIC Data, and IMF staff calculations.

Cross-border exposures of domestic banks to Greater China and other Asian economies remain high, exposing Singapore to the risk of regional spillovers.

Singapore: Total Loans to Nonresidents by Region, 2021Q3

(In percent share of total banking system's loans)



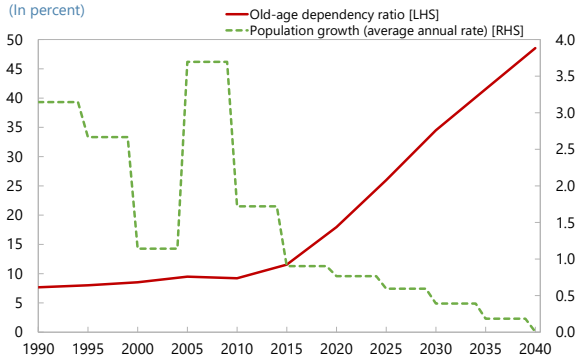
Sources: Monetary Authority of Singapore, CEIC Data, and IMF staff calculations.

Figure 9. Singapore: Demographic Transition

Old-age dependency is projected to increase significantly in the medium to long term.

Singapore: Old-Age Dependency Ratio & Population Growth

(In percent)

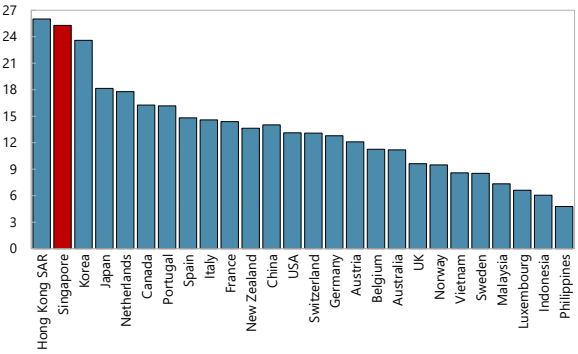


Sources: UNDESA, *World Population Prospects* 2019.

Singapore's aging speed is among the highest in the region and advanced economies across the world.

Singapore: Change in Old-Age Dependency Ratio, 2010-2030

(In percent)

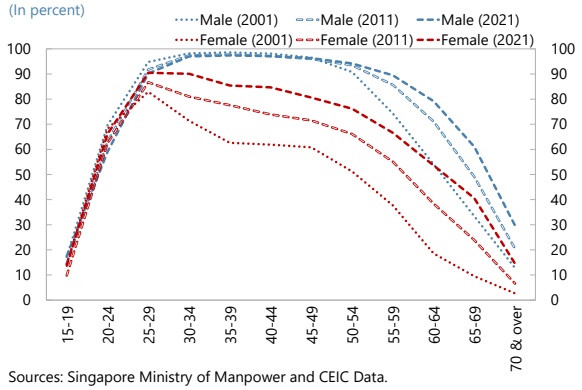


Sources: UNDESA, *World Population Prospects* 2019.

While the labor force participation rate has risen in recent years particularly for the elderly and women in prime working age, there is scope for further rise for prime working age women.

Singapore: Resident Labor Force Participation Rate by Gender & Age

(In percent)

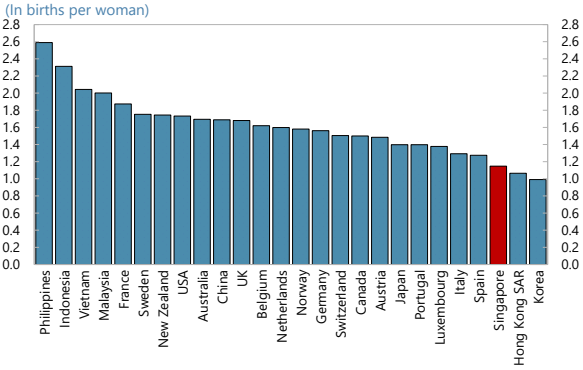


Sources: Singapore Ministry of Manpower and CEIC Data.

The average number of children per woman is among the lowest in the world.

Singapore: Total Fertility, 2016-20 Average

(In births per woman)



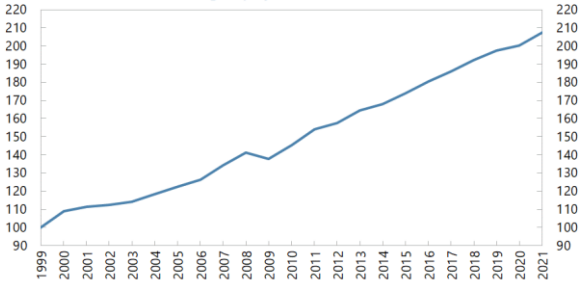
Sources: World Bank, *World Development Indicators*, CEIC Data, and IMF staff calculations.

Figure 10. Singapore: Social and Equality Indicators

Average monthly earnings continue to increase steadily.

Singapore: Average Monthly Earnings

(In index [1999=100], excluding employers' contributions to CPF)

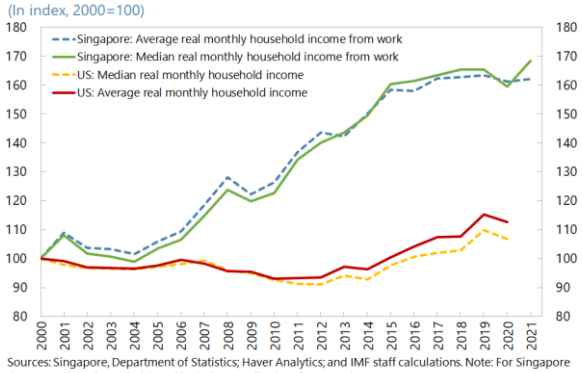


Sources: Singapore Department of Statistics, CEIC Data, and IMF staff calculations. Note: Source data includes all remuneration received before deduction of employee Central Provident Fund (CPF) contributions & personal income tax. It comprises basic wages, overtime pay, commissions, allowances & bonuses but exclude employer CPF contributions. Data cover full-time & part-time employees who have CPF contributions. They exclude identifiable self-employed persons who have made CPF contribution.

Median household income increased in 2021.

Singapore & USA: Mean & Median Real Household Income

(In index, 2000=100)

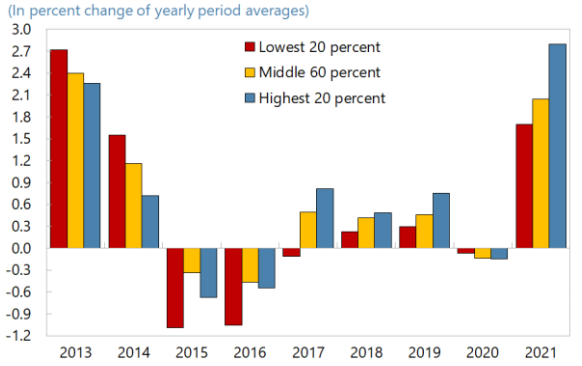


Sources: Singapore, Department of Statistics; Haver Analytics; and IMF staff calculations. Note: For Singapore data on resident households and includes contributions from employers to CPF.

High Inflation affected all income groups in 2021, but the bottom 20 percent was relatively less affected helping real income in this group.

Singapore: Inflation by Income Group

(In percent change of yearly period averages)

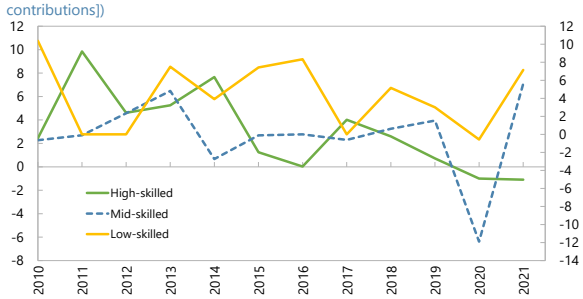


Sources: Singapore Dept. of Statistics, CEIC Data, and IMF staff calculations.

Median wages for high-skilled workers and mid-skilled workers 2021 have started to recover from the decline in 2020, while median wages for low-skilled workers remained broadly stable.

Singapore: Weighted Gross Monthly Wages

(In y-o-y percent change, full-time employed residents [excluding employer's CPF contributions])



Sources: Singapore Ministry of Manpower and IMF staff calculations.
Note: High-skilled comprises of managers and administrators; working proprietors; professionals; and technicians. Mid-skilled comprises clerical support workers; sales and service workers; craftsmen; plant and machine operators; and assemblers. Low-skilled comprises cleaners; laborers; and related workers.

While largely stagnant during 2000–11, real incomes of lower income groups have increased at a faster pace in the last decade.

Average Monthly Real Household Income by Decile 1/

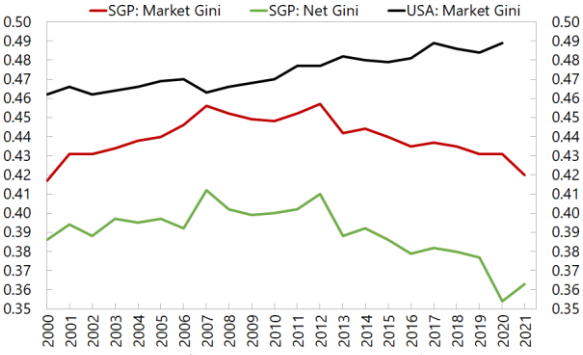
Decile	2000	2021	Cumulative Change (in percent) 2000–2021	2000–2011	2011–2021
Total	1,735	4,070	134.6	60.2	46.4
1st-10th	315	586	86.1	28.0	45.5
11th-20th	537	1,204	124.2	42.9	56.8
21st-30th	720	1,678	133.1	48.3	57.1
31st-40th	911	2,166	137.8	51.0	57.5
41st-50th	1,119	2,694	140.8	52.6	57.7
51st-60th	1,366	3,281	140.2	53.7	56.2
61st-70th	1,669	4,031	141.5	55.5	55.3
71st-80th	2,093	5,042	140.9	57.2	53.2
81st-90th	2,821	6,752	139.4	58.6	50.9
91st-100th	5,801	13,253	128.5	72.0	32.8
Memo:					
Top dec/bottom dec	18.4	22.6			

1/ Income from work per household member in employed households in 2000 prices. Household income from work includes employer CPF contributions. Deflated by CPI for the respective income group (lowest 20 percent, middle 60 percent, top 20 percent).

The exit from temporary government policies (taxes and benefit payments) led to a rise in inequality in 2021.

Singapore & USA: Household Gini

(In index [0-1])



Sources: Singapore Dept. of Statistics, U.S. Census Bureau, and CEIC Data.

Table 1. Singapore: Selected Economic and Financial Indicators, 2016–23

Nominal GDP (2021): US$396.9 billion
Population (2021): 5.5 million
GDP per capita (2021): US$72,766
Main goods exports (2021, percent of total non-oil goods exports): machinery & transport equip. (61.6 percent); chemical products (15.5 percent); and misc. manufactured articles (9.9 percent).

Top three destinations for goods exports (2021, percent of gross goods exports): China (14.8 percent); Hong Kong SAR (13.1 percent); and USA (8.4 percent).

							Projections	
	2016	2017	2018	2019	2020	2021	2022	2023
Growth (percentage change)								
Real GDP	3.6	4.7	3.7	1.1	-4.1	7.6	3.7	2.6
Total domestic demand 1/	5.5	6.1	0.9	2.0	-9.9	8.9	3.8	2.3
Final domestic demand 1/	2.3	4.0	0.5	2.7	-9.6	9.4	3.9	2.3
Consumption	3.3	3.2	3.7	3.2	-7.2	4.5	3.6	3.6
Private consumption	3.2	3.2	4.0	3.2	-12.9	4.5	4.5	3.9
Gross capital formation 1/	9.6	11.0	-3.7	-0.3	-14.7	17.7	4.3	0.1
Gross fixed investment	0.6	5.3	-5.1	1.7	-14.2	19.6	4.5	0.1
Change in inventories (contribution to GDP growth, percentage points) 1/	2.3	1.6	0.3	-0.5	-0.4	-0.2	0.0	0.0
Net exports (contribution to GDP growth, percentage points) 1/	-0.2	0.9	2.5	0.5	3.1	0.9	1.2	1.0
Saving and investment (percent of GDP)								
Gross national saving	44.1	44.6	39.9	39.1	39.3	42.5	40.0	38.3
Gross domestic investment	26.5	27.3	24.8	24.7	22.5	24.4	26.8	25.7
Inflation and unemployment (period average, percent)								
CPI inflation	-0.5	0.6	0.4	0.6	-0.2	2.3	4.8	2.5
CPI inflation, excluding food and energy 2/	-0.5	-0.7	-0.1	0.4	-0.3	2.4	2.8	2.0
MAS core inflation 2/	0.9	1.5	1.7	1.0	-0.2	0.9	3.0	2.0
Unemployment rate	2.1	2.2	2.1	2.3	3.0	2.7	2.2	2.2
Central government finances (percent of GDP) 3/								
Revenue	18.3	18.8	17.9	17.8	17.8	18.3	17.8	16.9
Expenditure	15.1	14.0	13.8	14.0	22.1	20.2	16.8	15.5
Net lending/borrowing	3.2	4.8	4.1	3.8	-4.2	-1.9	1.0	1.4
Net lending/borrowing, excluding nonproduced assets	0.4	1.7	1.1	1.4	-5.9	-3.8	-1.0	-0.5
Primary balance 4/	-2.6	-1.5	-2.0	-1.9	-9.6	-7.6	-4.7	-3.2
Money and credit (end of period, percent change) 5/								
Broad money (M2)	8.4	4.2	5.1	4.4	10.7	9.7	8.9	5.1
Credit to private sector	5.5	3.3	4.8	3.0	1.4	6.2	3.7	2.6
Three-month S$ SIBOR rate (percent)	1.0	1.5	1.9	1.8	0.4	0.4	...	...
Balance of payments (US$ billions)								
Current account balance	56.3	59.4	57.1	54.3	58.1	71.9	56.2	56.4
(In percent of GDP)	17.6	17.3	15.2	14.5	16.8	18.1	13.2	12.6
Goods balance	89.9	101.0	104.1	98.1	103.6	118.2	100.9	111.2
Exports, f.o.b.	373.2	417.2	460.6	442.6	417.8	503.9	610.1	647.7
Imports, f.o.b.	-283.3	-316.2	-356.4	-344.5	-314.1	-385.7	-509.1	-536.5
Financial account balance 6/	57.5	32.5	44.5	62.5	-15.8	8.2	6.1	4.9
Overall balance 6/	-1.8	27.4	12.5	-8.4	74.9	66.2	50.1	51.4
Gross official reserves (US$ billions)	246.6	279.9	287.7	279.5	362.3	417.9	460.5	519.0
(In months of imports) 7/	5.9	6.0	6.3	6.5	7.1	6.3	6.6	7.0
Singapore dollar/U.S. dollar exchange rate (period average)	1.38	1.38	1.35	1.36	1.38	1.34	...	...
Nominal effective exchange rate (percentage change) 8/	-1.0	-1.0	0.5	1.5	-2.4	0.4	...	...
Real effective exchange rate (percentage change) 8/	-6.0	-9.4	-5.9	4.6	-25.1	0.4	...	...
Memorandum items:								
Nominal GDP (in billions of Singapore Dollars)	440.5	473.9	508.5	512.2	476.4	533.4	581.0	610.9
Growth (%)	4.0	7.6	7.3	0.7	-7.0	12.0	8.9	5.1

Sources: Data provided by the Singapore authorities; and IMF staff estimates and projections.
Note: Data and forecasts as of May 24, 2022
1/ Approximation based on available data.
2/ IMF staff estimates, showing projections from 2021. MAS core inflation excludes the costs of accommodation and private transport.
3/ IMF staff estimates on a calendar year basis following GFSM 2014.
4/ Net lending/borrowing excluding net investment return contribution (NIRC).
5/ Data reporting by financial institutions changed since July 2022 after two major changes in MAS' banking sector regulatory framework took effect, creating a break in the broad money and credit to private sector series.
6/ Following the BPM6 sign convention, a positive entry implies net outflows.
7/ In months of following year's imports of goods and services.
8/ Increase is an appreciation.

Table 2. Singapore: Balance of Payments, 2016–23 1/

	2016	2017	2018	2019	2020	2021	Projections 2022	2023
				(In billions of U.S. dollars)				
Current account balance	56.3	59.4	57.1	54.3	58.1	71.9	56.2	56.4
Goods balance	89.9	101.0	104.1	98.1	103.6	118.2	100.9	111.2
Exports, f.o.b.	373.2	417.2	460.6	442.6	417.8	503.9	610.1	647.7
Imports, f.o.b.	-283.3	-316.2	-356.4	-344.5	-314.1	-385.7	-509.1	-536.5
Services balance	-6.4	-10.4	4.7	9.8	5.8	6.3	5.9	7.5
Exports	152.1	171.0	205.2	215.5	209.7	229.9	288.2	313.5
Imports	-158.5	-181.4	-200.5	-205.7	-203.8	-223.6	-282.3	-306.0
Primary income balance	-19.5	-25.9	-45.8	-46.9	-46.2	-47.8	-46.0	-57.5
Receipts	78.3	99.0	109.0	108.6	104.2	125.3	131.9	131.9
Payments	-97.8	-124.9	-154.9	-155.6	-150.4	-173.1	-177.9	-189.4
Secondary income balance	-7.8	-5.3	-5.9	-6.7	-5.1	-4.7	-4.6	-4.9
Financial account (net)	57.5	32.5	44.5	62.5	-15.8	8.2	6.1	4.9
Direct investment	-28.5	-36.5	-59.0	-55.9	-43.0	-58.1	-59.6	-62.6
Assets	36.9	62.7	22.2	55.6	31.8	47.4	51.0	56.0
Liabilities	65.4	99.2	81.2	111.5	74.8	105.5	110.6	118.6
Portfolio investment	14.5	19.9	53.0	108.7	60.5	57.0	42.3	34.0
Assets	26.0	45.6	39.0	114.1	60.3	73.8	54.8	44.0
Liabilities	11.5	25.7	-14.1	5.5	-0.2	16.8	12.5	10.0
Other investment and financial derivatives	71.5	49.1	50.5	9.7	-33.3	9.3	23.4	33.5
Net errors and omissions	-0.6	0.5	-0.1	-0.2	1.0	2.5	...	...
Overall balance	-1.8	27.4	12.5	-8.4	74.9	66.2	50.1	51.4
Memorandum items:								
Current account as percent of GDP	17.6	17.3	15.2	14.5	16.8	18.1	13.2	12.6
Goods balance as percent of GDP	28.2	29.4	27.6	26.1	30.0	29.8	23.8	24.8
Re-exports as percent of GDP	55.2	54.0	54.0	54.8	59.0	62.8	...	...
Net international investment position								
In billions of U.S. dollars	712	840	685	845	969	1018	...	...
In percent of GDP	223	245	182	225	281	256	...	...

Sources: Monetary Authority of Singapore, *Economic Survey of Singapore* ; and IMF staff estimates and projections.

1/ Data for the current account balance, the capital and financial account balance, and net errors and omissions are converted to U.S. dollars from the official presentation in Singapore dollars using period-average exchange rates. The official presentation has adopted the sign convention for assets and liabilities in line with BPM6 manual.

Table 3. Singapore: Monetary Survey, 2016–23 1/

	2016	2017	2018	2019	2020	2021	Projections 2022	2023
	(In billions of Singapore dollars, end of period)							
Net foreign assets	506	534	556	578	724	660	728	798
Monetary authorities	353	372	390	374	472	553	621	691
Banks	153	162	166	204	252	107	107	107
Domestic credit	864	898	950	996	1019	984	1018	1045
Claims on private sector	741	765	802	826	837	889	922	946
Claims on central government	123	133	148	170	182	95	97	99
Other items (net)	-556	-584	-614	-643	-712	-513	-515	-548
M2	814	848	892	931	1031	1131	1232	1295
M1	294	315	311	326	437	518	565	594
Quasi-money	520	533	581	605	595	613	667	702
	(Annual percentage change)							
Domestic credit	5.0	4.0	5.7	4.8	2.3	-3.4	3.5	2.6
Claims on private sector	5.5	3.3	4.8	3.0	1.4	6.2	3.7	2.6
M2	8.4	4.2	5.1	4.4	10.7	9.7	8.9	5.1
	(Contribution to M2 growth, in percentage points)							
Net foreign assets	0.6	3.5	2.6	2.4	15.7	-6.2	6.1	5.7
Domestic credit (net)	5.5	4.2	6.1	5.1	2.5	-3.4	3.0	2.1
Claims on private sector	5.1	3.0	4.4	2.7	1.2	5.0	2.9	1.9
Claims on central government (net)	0.4	1.2	1.7	2.5	1.3	-8.4	0.1	0.2
Other items (net)	2.3	-3.5	-3.5	-3.2	-7.5	19.3	-0.2	-2.7
Memorandum items:								
Total loans to nonbanks (in billions of Singapore dollars) 2/	1,155	1,248	1,314	1,370	1,354	1,317	...	...
To residents 3/	704	725	763	786	793	811	...	...
Total loans to nonbanks (annual percentage change) 2/	0.5	8.0	5.3	4.3	-1.2	-2.7	...	...
To residents (annual percentage change) 3/	5.0	2.9	5.3	3.0	0.8	2.2	...	...

Sources: Monetary Authority of Singapore; and IMF staff estimates.

1/ Based on domestic banking units (DBUs) and Asian currency units (ACUs) until June 2021. Data reporting by financial institutions changed since July 2022 after two major changes in MAS' banking sector regulatory framework took effect, creating a break in the broad money and credit to private sector series.
2/ Total loans of DBUs and ACUs to both residents and nonresidents.
3/ For ACUs, data are converted to Singapore dollar using end-of-period exchange rate.

Table 4. Singapore: Indicators of Vulnerability, 2016–21

	2016	2017	2018	2019	2020	2021
Financial sector indicators						
Broad money (M2, percent change, y/y, end of period)	8.4	4.2	5.1	4.4	10.7	9.7
Private sector credit (percent change, y/y, end of period)	5.5	3.3	4.8	3.0	1.4	6.2
Credit to the property sector (percent change, y/y, end of period) 1/	3.1	2.3	5.9	1.0	2.4	2.7
Share of property sector credit in total nonbank credit (percent, end of period) 1/	50.8	49.2	50.6	49.6	51.8	51.6
Credit rating of local banks (S&P) 2/	AA-	AA-	AA-	AA-	AA-	AA-
Three-month S$ SIBOR (percent, end of period)	1.0	1.5	1.9	1.8	0.4	0.4
NPL ratio (local banks, percent, latest available) 3/	1.4	1.6	1.5	1.5	1.6	1.5
Capital adequacy ratio of local banks (percent, latest available) 4/	16.5	17.1	16.8	17.0	17.6	17.2
Asset market indicators (end of period)						
Stock prices (percent change, y/y)	-0.1	18.3	-9.9	5.0	-11.8	-8.0
P/E ratio	13.9	15.5	13.5	14.4	13.3	15.0
Stock prices of the finance sector (percent change, y/y)	1.1	30.0	-8.7	10.2	-9.1	-6.3
Real estate prices (percent change, y/y)						
Private residential (4-quarter average)	-3.1	-1.1	7.8	2.3	1.6	8.0
Private residential (end of period)	-3.1	1.1	7.9	2.7	2.2	6.6
External indicators						
Current account balance (US$ billion)	56.3	59.4	57.1	54.3	58.1	71.9
In percent of GDP	17.6	17.3	15.2	14.5	16.8	18.1
Gross official reserves (US$ billion, end of period)	246.6	279.9	287.7	279.5	362.3	417.9
In months of next year's imports of goods and services	5.9	6.0	6.3	6.5	7.1	6.3
Real effective exchange rate (index, 2010=100, end of period)	108.1	106.8	106.2	106.5	103.7	103.5

Sources: Data provided by the Singapore authorities; and IMF, *Information Notice System.*

1/ For domestic banking units (DBU).
2/ Ratings of the three major local banks.
3/ In percent of global nonbank loans. 2021 data is as of 2021Q3.
4/ 2021 data is as of 2021Q3.

Table 5. Singapore: Medium-Term Scenario, 2016–27

	2016	2017	2018	2019	2020	2021	Projections 2022	2023	2024	2025	2026	2027
Real growth (percent change)												
GDP	3.6	4.7	3.7	1.1	-4.1	7.6	3.7	2.6	2.6	2.5	2.5	2.5
Total domestic demand 1/	5.5	6.1	0.9	2.0	-9.9	8.9	3.8	2.3	3.6	2.6	2.7	2.2
(Contribution to GDP growth, in percent) 1/	4.0	4.5	0.7	1.4	-7.3	6.2	2.7	1.6	2.5	1.8	1.9	1.6
Final domestic demand 1/	2.3	4.0	0.5	2.7	-9.6	9.4	3.9	2.3	3.6	2.7	2.7	2.2
Consumption	3.3	3.2	3.7	3.2	-7.2	4.5	3.6	3.6	2.9	2.7	2.8	2.8
Private	3.2	3.2	4.0	3.2	-12.9	4.5	4.5	3.9	3.0	2.3	2.3	2.3
Public	3.7	3.4	3.0	3.4	13.3	4.5	0.9	2.6	2.7	3.9	4.4	4.4
Gross capital formation 1/	9.6	11.0	-3.7	-0.3	-14.7	17.7	4.3	0.1	4.8	2.5	2.5	1.1
Gross fixed investment	0.6	5.3	-5.1	1.7	-14.2	19.6	4.5	0.1	4.9	2.6	2.6	1.1
Private	-2.1	6.8	-5.2	1.8	-11.6	19.7	4.4	-0.5	5.4	2.2	2.2	0.3
Public	12.3	-0.5	-4.5	1.2	-25.0	18.8	6.0	3.0	3.0	4.2	4.6	4.6
Change in inventories 2/	2.3	1.6	0.3	-0.5	-0.4	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
Net exports 2/	-0.2	0.9	2.5	0.5	3.1	0.9	1.2	1.0	0.1	0.6	0.6	0.9
Saving and investment (percent of GDP)												
Gross national savings	44.1	44.6	39.9	39.1	39.3	42.5	40.0	38.3	38.8	38.7	38.3	37.9
Government 3/	5.1	5.9	5.4	5.2	-2.7	-0.5	2.3	2.8	3.4	3.8	4.1	4.2
Private and other	39.1	38.7	34.5	33.9	42.0	43.0	37.7	35.5	35.4	34.9	34.3	33.6
Gross capital formation	26.5	27.3	24.8	24.7	22.5	24.4	26.8	25.7	25.9	25.7	25.6	25.4
Government 4/	5.4	4.7	4.2	4.3	3.5	3.9	3.9	3.9	3.9	3.9	4.0	4.1
Private and other	21.1	22.6	20.6	20.4	18.9	20.4	22.9	21.8	22.1	21.8	21.6	21.3
Inflation and unemployment (period average, percent)												
CPI inflation	-0.5	0.6	0.4	0.6	-0.2	2.3	4.8	2.5	1.5	1.5	1.5	1.5
CPI inflation, excluding food and energy 5/	-0.5	-0.7	-0.1	0.4	-0.3	2.4	2.8	2.0	1.7	1.6	1.3	1.3
MAS Core inflation 5/	0.9	1.5	1.7	1.0	-0.2	0.9	3.0	2.0	1.8	2.0	0.0	0.0
Unemployment rate	2.1	2.2	2.1	2.3	3.0	2.7	2.2	2.2	2.2	2.2	2.1	2.1
Central government (percent of GDP) 6/												
Revenue 7/	18.3	18.8	17.9	17.8	17.8	18.3	17.8	16.9	17.2	17.6	17.9	18.1
Expenditure	15.1	14.0	13.8	14.0	22.1	20.2	16.8	15.5	15.2	15.2	15.2	15.2
Net lending/borrowing	3.2	4.8	4.1	3.8	-4.2	-1.9	1.0	1.4	2.0	2.4	2.7	2.9
Net lending/borrowing, excluding nonproduced asset	0.4	1.7	1.1	1.4	-5.9	-3.8	-1.0	-0.5	0.1	0.5	0.8	1.0
Primary balance 8/	-2.8	-1.5	-2.0	-1.9	-9.6	-7.6	-4.7	-3.2	-2.5	-2.3	-2.3	-2.2
Merchandise trade (percent change)												
Export volume	0.0	7.2	4.2	-1.6	1.6	7.8	5.1	5.5	5.4	4.7	4.0	3.6
Import volume	-1.2	5.3	4.7	-1.4	-1.9	8.7	11.8	5.9	6.6	5.1	4.3	4.1
Terms of trade	-0.2	-1.6	-1.6	-0.3	-0.1	-0.9	-2.4	1.1	1.0	0.7	0.5	0.3
Balance of payments (percent of GDP)												
Current account balance	17.6	17.3	15.2	14.5	16.8	18.1	13.2	12.6	12.8	13.0	12.8	12.5
Balance on goods and services	26.2	26.4	28.9	28.7	31.7	31.4	25.1	26.5	26.6	27.2	27.4	27.1
Balance on primary and secondary income	-8.6	-9.1	-13.7	-14.3	-14.9	-13.2	-11.9	-13.9	-13.8	-14.2	-14.6	-14.6
Gross official reserves (US$ billions)	247	280	288	279	362	418	461	519	578	636	661	721
In months of imports 9/	5.9	6.0	6.3	6.5	7.1	6.3	6.6	7.0	7.5	7.9	8.2	8.2

Sources: Data provided by the Singapore authorities; and IMF staff estimates and projections.

1/ Approximation based on available data.
2/ Contribution to GDP growth.
3/ Based on fiscal accounts data.
4/ Based on national accounts data.
5/ IMF staff estimates, showing projections from 2021. MAS core inflation excludes the costs of accommodation and private road transport.
6/ IMF staff estimates on a calendar year basis following GFSM 2014.
7/ Does not include announced increase in goods and services tax from 7 to 9 percent sometime in 2021-2025.
8/ Net lending/borrowing excluding nonproduced assets minus net investment return contribution (NIRC).
9/ In months of next year's imports of goods and services.

Table 6. Singapore: Summary of Government Operations and Stock Positions, FY2016–FY2022 1/

	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
						11/ Proj.	
I. Statement of government operations							
				(In billions of Singapore dollars)			
Revenue	83.5	90.5	90.2	91.3	85.6	100.7	103.3
Taxes	58.7	66.4	66.2	67.6	61.4	72.8	73.7
Other revenue	24.8	24.2	23.9	23.7	24.2	27.9	29.6
Of which: Net investment returns contribution (NIRC)	14.6	14.7	16.4	17.0	18.2	20.3	21.6
Expense	59.4	61.4	63.3	64.7	111.5	94.6	87.3
Compensation of employees	8.3	8.9	9.2	8.9	8.8	9.9	10.6
Use of goods and services	18.4	18.9	19.6	20.3	24.9	26.2	27.4
Expense not elsewhere classified 2/	32.7	33.6	34.5	35.5	77.8	58.5	49.3
Grants, subventions & capital injections to organizations	10.6	12.6	13.0	13.4	17.5	22.2	21.5
Transfers 2/	22.1	21.0	21.4	22.0	60.3	36.4	27.8
Gross operating balance	24.1	29.2	26.8	26.6	-25.8	6.1	16.1
Net acquisition of nonfinancial assets, excluding nonproduced as:	20.7	19.7	22.4	18.6	14.7	18.8	19.2
Of which: Development expenditure	18.9	18.0	20.3	16.7	13.4	16.9	17.3
Net lending/borrowing, excluding nonproduced assets 3/	**3.5**	**9.5**	**4.4**	**8.1**	**-40.5**	**-12.7**	**-3.1**
Net acquisition of nonproduced assets (land)	-11.2	-15.7	-14.5	-11.3	-7.4	-11.6	-11.2
Net lending/borrowing	14.7	25.2	18.9	19.3	-33.1	-1.0	8.0
				(In percent of GDP)			
Revenue	18.6	18.9	17.6	17.8	17.9	18.4	17.6
Taxes	13.1	13.8	12.9	13.2	12.8	13.3	12.5
Other revenue	5.5	5.0	4.7	4.6	5.0	5.1	5.0
Of which: NIRC	3.2	3.1	3.2	3.3	3.8	3.7	3.7
Expense 2/	13.2	12.8	12.3	12.6	23.2	17.3	14.9
Gross operating balance	5.4	6.1	5.2	5.2	-5.4	1.1	2.7
Net acquisition of nonfinancial assets, excluding nonproduced as:	4.6	4.1	4.4	3.6	3.1	3.4	3.3
Of which: Development expenditure	4.2	3.7	3.9	3.3	2.8	3.1	3.0
Net lending/borrowing, excluding nonproduced assets 3/	**0.8**	**2.0**	**0.9**	**1.6**	**-8.4**	**-2.3**	**-0.5**
Net acquisition of nonproduced assets (land)	-2.5	-3.3	-2.8	-2.2	-1.5	-2.1	-1.9
Net lending/borrowing	3.3	5.2	3.7	3.8	-6.9	-0.2	1.4
Memorandum items:							
Cyclically-adjusted overall balance (percent of potential GDP) 4/	0.8	1.7	0.7	1.7	-7.9	-2.3	-0.5
Primary balance 5/	-2.5	-1.1	-2.3	-1.8	-12.2	-6.0	-4.2
Structural primary balance (percent of potential GDP) 6/	-2.8	-2.3	-2.8	-1.9	-12.0	-6.4	-4.5
Expenditures on social development 7/	7.5	7.6	7.0	7.2	9.3	8.9	8.4
Spending from Endowment and Trust Funds	1.0	0.8	0.8	0.9	1.0	0.9	...
Authorities' budgetary accounts 8/							
Operating revenue (1)	15.1	15.8	14.4	14.5	14.0	14.7	13.9
Total expenditure (2)	15.8	15.3	15.2	14.7	18.0	18.0	17.4
Primary fiscal balance (3)=(1)-(2)	-0.7	0.5	-0.8	-0.2	-4.0	-3.3	-3.5
Special transfers (excl. transfers to endowment funds) (4)	0.6	0.4	0.3	0.3	7.0	1.4	0.4
Basic balance (5)=(3)-(4)	-1.4	0.0	-1.1	-0.5	-10.9	-4.7	-3.9
Transfers to Endowment and Trust Funds (6)	0.8	0.8	1.4	2.7	3.6	0.0	0.7
NIRC (7)	3.2	3.1	3.2	3.3	3.8	3.7	3.7
Overall balance (8)=(5)-(6)+(7)	1.1	2.2	0.7	0.1	-10.8	-1.0	-0.9
II. Stock positions							
				(In billions of Singapore dollars, unless otherwise indicated)			
Gross financial assets 9/	997	1,088	1,174	1,349	1,401	...	...
Gross debt 10/	479	517	562	656	729	874	...
Gross debt (in percent of GDP) 10/	107	108	109	128	152	160	...
Government deposits at the Monetary Authority of Singapore	79	65	41	44	70	54	...
Memorandum item:							
Nominal GDP (fiscal year)	450	480	513	512	480	546	588

Sources: Data provided by the Ministry of Finance; and IMF staff estimates and projections.

1/ The financial year begins on 1 April of the current year and ends on 31 March of the following year. Table presentation is based on GFSM 2014.
2/ Includes spending from government endowment and trust funds.
3/ This fiscal aggregate is used in policy discussions with the authorities. Proceeds from land sales do not affect the fiscal stance to the extent that the private sector is receiving an equivalent asset in return. They also do not affect total net worth for the government or for the private sector.
4/ Cyclically adjusted net lending/borrowing excluding nonproduced assets.
5/ Net lending/borrowing excluding nonproduced assets minus net investment return contribution (NIRC).
6/ Cyclically adjusted net lending/borrowing excluding nonproduced assets minus NIRC and Monetary Authority of Singapore (MAS) contributions.
7/ Includes development and operating expenditure on education, health, national development, sustainability and the environment, culture, community and youth, social and family development, communications and information, and manpower (financial security). Does not include social spending from government endowment and trust funds.
8/ The authorities' budgetary accounts are based on Singapore's Constitutional rules governing the protection of Past Reserves. It includes the net investment returns contribution, which reflects the amount of investment returns that is taken into the Budget. It excludes receipts such as proceeds from land sales and the remaining part of investment income that accrues to past reserves and cannot be used to fund government expenditures without the approval of the President. While such receipts are not reflected in the overall balance, the information is presented annually to Parliament and included in Budget documents. Starting in FY2021, the authorities started to report an *overall fiscal position which accounts for the capitalization and depreciation of nationally significant infrastructure. The overall fiscal position amounted to a deficit of S$4.95 billion in FY2021 and is expected at*
9/ Gross asset stock figures are as at the end of March for each year as reported in the "Statement of Assets and Liabilities" in the budget document.
10/ Debt is issued to deepen the domestic debt market, to meet the investment needs of the Central Provident Fund, and to provide individuals a long-term savings option.
11/ The IMF staff projection for GDP is used to calculate the authorities' budgetary accounts in percent of GDP.

Table 7. Singapore: Financial Soundness Indicators—Local Banking Sector, 2017–21Q3 1/

	2017	2018	2019	2020	2021 Q3
	(End of period; in percent)				
Capital adequacy ratio					
Regulatory capital to risk-weighted assets	17.1	16.8	17.0	17.6	17.2
Regulatory tier I capital to risk-weighted assets	15.4	14.9	15.3	15.5	15.2
Shareholders' equity to assets	9.3	9.2	9.3	9.1	9.0
Asset quality					
NPLs to nonbank loans	1.6	1.5	1.5	1.6	1.5
Total Provisions to total unsecured NPAs	...	185.8	198.7	230.3	219.1
Specific provisions to total unsecured NPAs	...	88.0	91.9	91.1	89.2
Loan concentrations (in percent of total loans) 2/					
Interbank loans	14.7	13.0	12.5	11.8	10.7
Nonbank loans	85.3	87.0	87.5	88.2	89.3
Profitability					
Return on assets	1.0	0.9	1.1	0.8	1.0
After tax return on equity	10.4	10.2	11.2	8.0	10.7
Net interest margin	1.8	1.8	1.8	1.5	1.5
Non-interest income to total income	37.7	30.1	35.7	36.6	39.7
Liquidity					
Overall non-bank loans to deposits ratio (LTD)	86.1	88.5	88.0	83.9	85.2
Domestic currency non-bank LTD	88.7	90.3	88.8	78.9	79.9
USD non-bank LTD	72.4	75.8	69.0	65.6	67.5

Source: Monetary Authority of Singapore.

1/ The data relates to local banking groups' global operations.
2/ 2021 data as of Q2.

Table 8. Singapore: International Investment Position, 2016–21

	2016	2017	2018	2019	2020	2021
	(In billions of U.S. Dollars) 1/					
External assets	3,218	3,797	3,795	4,250	4,722	4,922
Direct investment	829	1,039	983	1,145	1,266	1,346
Portfolio investment	1,029	1,265	1,246	1,497	1,625	1,674
Equity securities	520	657	633	786	875	968
Debt securities	509	609	614	710	750	706
Other investment and financial derivatives	1,113	1,213	1,278	1,329	1,470	1,485
Reserve assets	246	280	287	279	362	417
External liabilities	2,505	2,957	3,110	3,405	3,753	3,905
Direct investment	1,145	1,424	1,523	1,739	1,952	2,007
Portfolio investment	204	279	268	295	315	366
Equity securities	156	213	197	210	233	256
Debt securities	48	66	72	84	82	110
Other investment and financial derivatives	1,156	1,254	1,319	1,371	1,486	1,532
Net international investment position	712	840	685	845	969	1,018
	(In percent of GDP) 1/					
External assets	1009	1106	1007	1132	1368	1240
Direct investment	260	303	261	305	367	339
Portfolio investment	323	369	331	399	471	422
Equity securities	163	191	168	209	253	244
Debt securities	160	177	163	189	217	178
Other investment and financial derivatives	349	353	339	354	426	374
Reserve assets	77	82	76	74	105	105
External liabilities	786	862	825	907	1087	984
Direct investment	359	415	404	463	565	506
Portfolio investment	64	81	71	79	91	92
Equity securities	49	62	52	56	67	64
Debt securities	15	19	19	22	24	28
Other investment and financial derivatives	363	365	350	365	430	386
Net international investment position	223	245	182	225	281	256

Sources: Singapore, Department of Statistics; and IMF staff
1/ IMF staff estimates using official data published in national currency.

Appendix I. Evolving Fiscal Policy in Singapore: From Pandemic Response to Addressing Rising Medium-Term Fiscal Pressures[1]

Fiscal policy in Singapore has evolved noticeably since the onset of the COVID-19 pandemic in 2020. Singapore responded to the COVID-19 pandemic with a bold, comprehensive, and coordinated policy package in 2020 that helped cushion the economic fallout (Phase 1). The unprecedented fiscal response, the first line of defense during the crisis, led to the largest budget deficit in Singapore's history. As the economy started to recover, fiscal policy shifted from broad emergency assistance to targeted support in 2021, implying a reduction of the deficit (Phase 2). Fiscal policy normalization is set to continue in 2022, combined with more selective and targeted support to entities still impacted by the pandemic, which aim to facilitate a broadening of the recovery across all sectors (Phase 3). With fiscal policy almost back to pre-pandemic policy prudence, longer-term challenges, notably economic transformation to a greener, digital, and more inclusive economy against the background of rising spending pressures are set to drive the agenda going forward barring large negative shocks.

A. Fiscal Policy Dynamics Since the COVID-19 Pandemic

Phase 1: A Large Fiscal Expansion to Cushion the Recession from the Pandemic in 2020

1. **Singapore's response to cushion the impact of the COVID-19 pandemic in FY2020 came primarily through a substantial and comprehensive fiscal package.**[2] The unprecedented stimulus package, deployed through the initial budget, supplementary budgets, and ministerial announcements, amounted to about S$97.3 billion (20.3 percent of GDP), a large portion of which was financed through drawdowns of government reserves. The package comprised above-the-line measures of about 16 percent of GDP to support healthcare and mitigate economic and social hardship through across-the-board assistance to businesses, workers, and households. The package also included loan capital, a below-the-line measure, of about S$22.0 billion (4.7 percent of GDP) set aside to eventually provide loans to entities facing difficulties.

2. **The bold and broad-based fiscal response helped cushioned the immediate economic fallout of the pandemic**. The fiscal impulse from the stimulus package, which amounted to 12 percent of GDP in FY2020 or on a calendar basis 10 percent of GDP in 2020, was one of the largest among advanced economies and supported growth by an estimated 5.5 percentage points in 2020. Following a record real GDP contraction of 12.2 percent year-on-year in 2020Q2 at the beginning of the pandemic, output started to rebound vigorously and expanded by 2.0 percent in 2021Q1. The unprecedented fiscal response led to the largest budget deficit in Singapore's history.

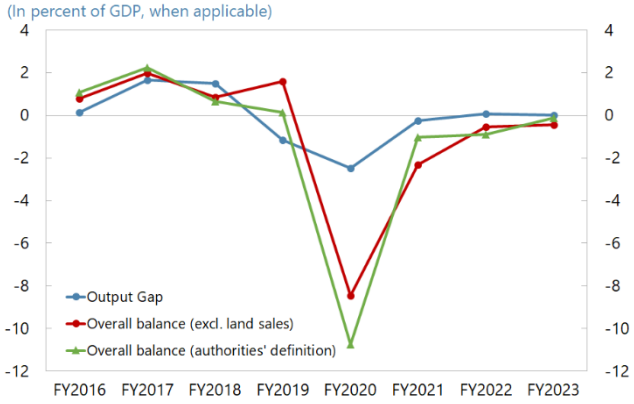
[1] Prepared by Tidiane Kinda (APD).

[2] The Monetary Authority of Singapore also helped through monetary policy easing and liquidity provision, as well as a broad financial sector package that included opt-in moratoria on loan repayments, extension of payment terms for trade finance facilities, additional financing for working capital, and regulatory and supervisory flexibility. The fiscal year FY2020 started on April 1, 2020 and ended on March 31, 2021.

Phase 2: The Strong Economic Rebound in 2021 Allowed the Unwinding of Large-Scale Fiscal Support and a Shift to Targeted Measures

3. **Considering the strong economic rebound, the FY2021 budget appropriately shifted from broad emergency relief to smaller targeted measures.** The FY2021 budget extended selected measures from the preceding budget while targeting support to entities still impacted by the pandemic. The S$11bn (2 percent of GDP) COVID-19 Resilience Package in the FY2021 budget, about one-tenth of the FY2020 package, included public health care measures to support a safe reopening of the economy. Most of the measures introduced in 2020 to support businesses, workers, and households elapsed and only a handful of measures were extended through the FY2021 budget. To support the recovery, the FY2021 budget also increased the budgetary allocation for skills upgrade and job creation initiatives to facilitate resource reallocation across sectors. The largest labor market support measure, the Jobs support scheme (JSS) was extended in 2021 but significantly scaled down and further targeted to sectors such as tourism, retail, food and beverages, and aviation.

Singapore: Output Gap and Overall Balance
(In percent of GDP, when applicable)



Sources: IMF staff estimates.

4. **The authorities' shift to targeted support in FY2021 also accounted for the lingering impact of the large fiscal support in FY2020.** As FY2020 covers the period from April 1, 2020, to March 31, 2021, some of the FY2020 fiscal support was disbursed during the first quarter of 2021. In addition, Kinda, Lengyel, and Chahande (2022) shows that cumulative fiscal multipliers one year after a health crisis is about twice larger than during normal times, particularly in advanced economies (Box 1). Despite the strong rebound, the recovery has been uneven with activities in consumer-facing and construction sectors remaining well below pre-pandemic levels.

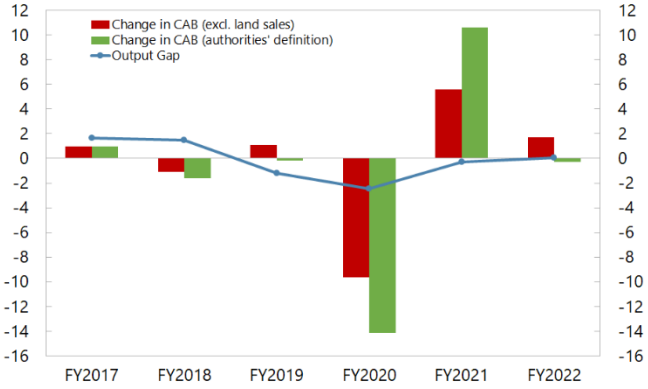
Phase 3: Normalize Fiscal Policy While Targeting Further Assistance to Entities Still Impacted by the Pandemic to Facilitate a Broader Recovery, and Pivot to Post-Pandemic Priorities

5. **The FY2022 budget pursues a gradual normalization of fiscal policy while facilitating a broadening of the recovery through more targeted and selected assistance.** The FY2022 unwinds most pandemic-related support measures and further targets remaining support to households and firms still impacted by the pandemic. This implies a further normalization of fiscal policy and a contractionary fiscal stance.[3] The FY2022 budget commits S$7.6bn of COVID-19 related support measures (1.3 percent of GDP), which includes the Jobs and Business Support Package and

[3] The authorities' definition of the fiscal balance corresponds to a modest 0.3 percent of GDP expansionary fiscal stance in 2022 (using GDP projections from the IMF).

Household Support Package to provide more targeted and selective support to entities still impacted by the pandemic.[4] The packages introduce a Small Business Recovery Grant for SMEs in sectors hard hit by COVID-19 restrictions such as retail, tourism, and hospitality. The budget also extends the Jobs Growth Incentive with lower support rates to incentivize the hiring of vulnerable jobseekers and regularizes the SGUnited Mid-Career Pathways Programme for skills upgrades of mid-career workers. These two measures also facilitate labor reallocation across sectors.

Singapore: Output Gap and Change in CAB
(In percent of potential GDP, when applicable)



Sources: IMF staff estimates.

Composition of COVID-19 Packages in FY2020, FY2021, and FY2022 Budgets

List of Measures	FY2020		FY2021 1/		FY2022	
	S$, billion	Percent of GDP	S$, billion	Percent of GDP	S$, billion	Percent of GDP
Emergency public health measures to fight COVID-19	13.8	2.9	4.8	0.9	6.0	1.0
(includes COVID-19 testing, clinical management, tracing, vaccination and therapeutics, isolation facilities)						
Support for Jobs, Workers, Businesses	73.5	15.3	5.8	1.1	1.0	0.2
Jobs Support Scheme	26.9	5.6	2.9	0.5		
Enhanced Wage Credit Scheme (WCS)	1.1	0.2		0.0		
SGUnited Jobs and Skills package (inclusive of the Jobs Growth Incentive)	1.0	0.2	1.5	0.3		
Foreign Worker Levy Rebate	2.3	0.5		0.0		
Property Tax Rebate	1.8	0.4		0.0		
Rental Relief	1.8	0.4		0.0		
Government Rental Waiver	0.7	0.1		0.0		
Sector-specific support (e.g. Aviation, Land Transport, Construction)	3.2	0.7	1.2	0.2	0.5	0.1
Others (e.g. financing schemes, deferment of income tax payments) 2/	34.7	7.2	0.2	0.0		
2022 Jobs and Business Support Package 3/					0.5	0.1
Support to Households	10.0	2.1	0.4	0.1	0.6	0.1
Care and Support Package (CSP) and Solidarity Payment	5.8	1.2		0.0		
Solidarity Utilities Credit	0.1	0.0		0.0		
Temporary Relief Fund	0.2	0.0		0.0		
Self-Employed Person Income Relief Scheme (SIRS)	2.0	0.4		0.0		
COVID-19 Support Grant/Recovery Grant 4/	0.8	0.2	0.4	0.1		
Others (e.g. Grants to CDCs, Solidarity Payment)	1.1	0.2		0.0		
2022 Household Support Package					0.6	0.1
Total 5/	**97.3**	**20.3**	**11.0**	**2.0**	**7.6**	**1.3**

Notes: 1/ The FY2021 figures reflect the S$11 billion COVID-19 Resilience Package, which was planned to be fully funded from Past Reserves. The FY2020 and FY2022 COVID-19 packages are funded from both Past Reserves and the Current Reserves of the current term of Government.

2/ This comprises S$22 billion of loan capital.

3/ This comprises the Small Business Recovery Grant and the extension of the Jobs Growth Incentive.

4/ The S$0.4 billion COVID-19 Recovery Grant, announced in the FY2021 Budget, has been extended to December 2022. To avoid double counting, the 2022 cashflow is excluded from the table.

5/ Contingencies funds, which were increased from S$3 billion to S$16 billion in FY2020 to cater for unexpected urgent cashflow needs, are not included in the table.

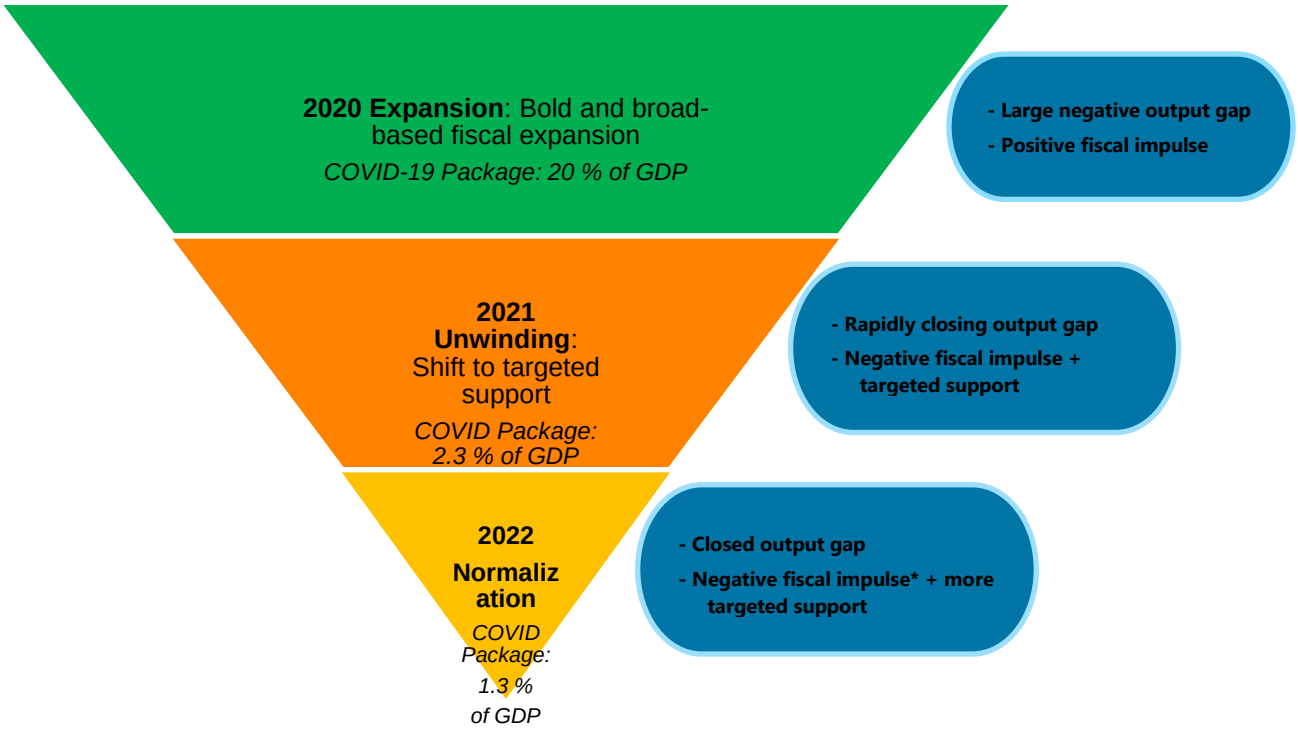
6. **The FY2022 budget represents a shift to post-pandemic priorities, notably the transition to a greener, digital, and more inclusive economy.** The FY2022 budget include measures to advance the climate change transition with net-zero emissions now targeted by or

[4] The FY2022 budget also includes public health care measures to support a continued safe reopening of the economy.

around the middle of the century, including by increasing the carbon tax from the current S$5 per tonne of emissions to S$25 in 2024 and 2025, and S$45 in 2026 and 2027, with a view to reaching S$50 to S$80 by 2030. Singapore also plans to issue S$35 billion (6 percent of 2022 GDP) in green bonds by 2030 to fund infrastructure projects. In addition, initiatives to accelerate technological adoption and build a fairer and more resilient tax system were adopted, including raising taxes on luxury cars, increasing personal income tax rate for the highest brackets (chargeable income[5] in excess of S$500,000); and increasing residential property taxes.[6]

7. **The FY2022 budget includes additional measures that raise fiscal revenues in anticipation of rising medium-term fiscal pressures.** Measures include raising the GST in a staggered fashion from 7 percent to 8 percent on 1 January 2023, and then to 9 percent on 1 January 2024, with the enhanced assurance package and the enhanced GST voucher providing an offset to the higher cost of living from the GST hikes for vulnerable households. The GST is expected to yield an additional 0.7 percent of GDP in additional revenue upon full implementation. Measures to raise income and wealth taxes are also expected to yield an additional 0.1 percent of GDP.

Schematic Summary of Fiscal Policy Stance during the Pandemic (2020-2022)



**Note: For FY2022, the authorities' definition of the fiscal balance corresponds to a modest 0.3 percent of GDP expansionary fiscal stance in 2022 (using GDP projections from the IMF).*

[5] Chargeable income refers to income after deductions such as donations and reliefs.

[6] The FY2022 budget also introduces progressive wages (income floor for lower wage workers) and an increase in the qualifying salary level for foreign professional workers.

Box 1. Fiscal Multipliers During Pandemic

Kinda, Lengyel, and Chahande (2022) assesses how fiscal multipliers vary during health crises. A historical look at past pandemics and epidemics highlights concomitant public sector support in response to health crises. This paper assesses how fiscal multipliers could vary during health crises, particularly how factors such as social distancing and uncertainty could lower contemporaneous (T) multipliers and increase near-term (T+1 and T+2) multipliers.
The paper estimates a linear and state-dependent panel local projections, based on (Jordà 2005):

$$Z_{i,t+h} = \alpha_i^h + c_t^h + \beta^h Shock_{i,t} + \gamma^h(L)\mathbf{X}_{i,t} + \varepsilon_{i,t+h} \quad (1)$$

where $Z_{i,t}$ is either real GDP, or real government expenditure; α_i^h and c_i^h are country and time fixed-effects; $Shock_t$ is the fiscal shock; $\gamma^h(L)$ is a polynomial in the lag operator and $\mathbf{X}_t$ is a vector of control variables. Control variables include one lag of real GDP growth, one lag of government expenditure growth and lagged output gap.[1/] Driscoll and Kraay (1998) standard errors, correcting for potential heteroskedasticity, autocorrelation, or correlated errors across countries are reported. The state-dependent version of this equation is

$$Z_{i,t+h} = \alpha_i^h + c_t^h + I_t(\beta^{P,h} Shock_{i,t} + \gamma^{P,h}(L)\mathbf{X}_{i,t}) + (1 - I_t)(\beta^{NP,h} Shock_{i,t} + \gamma^{NP,h}(L)\mathbf{X}_{i,t}) + \varepsilon_{i,t+h} \quad (2)$$

where I_t is the pandemic indicator function. We use the variable definition of Hall (2009) and Owyang, Ramey, and Zubairy (2013) and scale our dependent variable by lagged real GDP, to convert both our dependent variables to the same units. Our two dependent variables $Z_{i,t}$ will be $(Y_{i,t+h} - Y_{i,t-1})/Y_{i,t-1}$ and $(G_{i,t+h} - G_{i,t-1})/Y_{i,t-1}$, where $Y_{i,t}$ is real GDP, and $G_{i,t}$ is real government expenditure. Cumulative fiscal multipliers and the corresponding confidence bands are then calculated through the one-step IV methodology, proposed by Ramey and Zubairy (2018).

The results show that multipliers are larger in the immediate years that follow the onset of a pandemic. The baseline results confirm that an expansionary fiscal policy has a positive and significant effect on output with an estimated multiplier of 0.4 in year T and a cumulative multiplier of 0.5-0.6 in the medium term. Comparing pandemic and non-pandemic states highlights significantly larger multipliers in the former in advanced economies. The cumulative multiplier in the pandemic rises to almost 1 one year after the pandemic shock, compared to about 0.4 under the non-pandemic state. The paper finds that the differences in the pandemic and non-pandemic fiscal multipliers is explained by three main factors: uncertainty, suppressed demand and supply bottlenecks.

The results suggest that the growth impact of pandemic measures would be larger and longer lasting. The large fiscal support deployed at the onset of the pandemic would be expected to have a larger impact than in non-pandemic times and importantly, the impact is expected to be at least 50 percent larger one year after the large fiscal impulse. Consistent with this result, real GDP growth in Singapore rebounded sharply from a contraction of 4.1 percent in 2020 to 7.6 percent in 2021, significantly higher than initially expected based on estimates using traditional fiscal multipliers.

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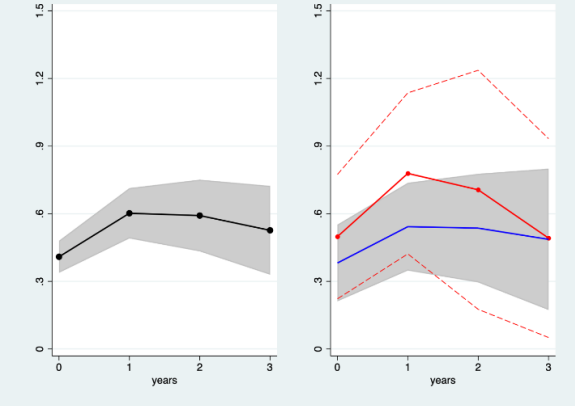
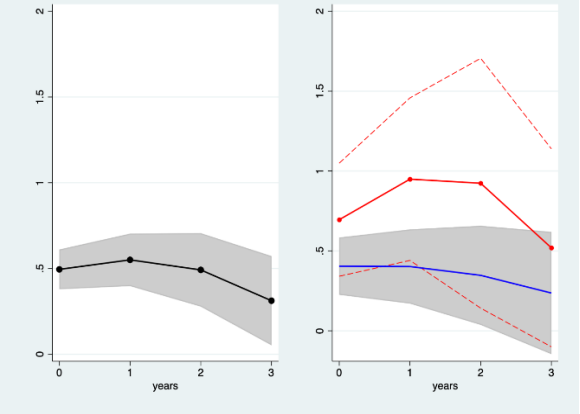
1/ Estimated as a deviation from the HP-filter extracted trend.

Box 1. Fiscal Multipliers During Pandemic (Concluded)

Cumulative Multipliers – All Countries



Cumulative Multipliers – Advanced Economies



Note: The black line represents the average (non-state dependent) fiscal multiplier. The redline and blue lines represent multipliers in pandemic and non-pandemic states respectively.

B. Rising Medium-Term Fiscal Pressures

8. **Singapore is facing rising fiscal pressure stemming from spending needed to address medium- and long-term challenges**. These challenges include (1) an increase in spending needs due to the rapidly aging population, in particular on healthcare; (2) possible needs to strengthen automatic stabilizers through enhancing the social protection system and the social compact as shocks become more prevalent; (3) fundamental threats including climate change given Singapore's low-lying areas; (4) the risk of future pandemics and the associated asymmetric, large economic impacts; (5) lumpiness in the spending needed to rejuvenate public housing and infrastructure such as rail lines and water, drainage, and sewage systems; and (6) the need to ease transition costs for firms and workers as Singapore accelerate digitalization.[7]

Healthcare Spending on the Rise

9. **Singapore has achieved strong health outcomes at a relatively lower cost compared to peers, but healthcare spending has risen sharply in recent years.** Singapore's resident life expectancy at birth was 83.9 years in 2020, one of the highest in the world. Despite this strong health outcome, total health expenditure in Singapore in 2019 was 4.4 percent of GDP, well below the 8.6 percent of GDP average for advanced countries in Asia.[8] While Singapore has benefited from a relatively low old age dependency ratio, rapid population aging is expected to create substantial government spending pressures over the medium term, especially on healthcare. This trend is already noticeable as healthcare spending has risen sharply in recent years and this trend is expected

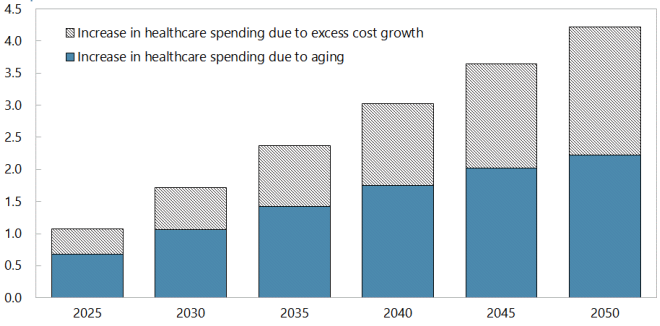
[7] While initiatives for global digital taxation may potentially lead to some revenue losses for investment hubs such as Singapore, the fiscal impact of these initiatives could be estimated once the design of the global digital taxation are finalized.

[8] Per capita total health expenditure in Singapore (US$2,500) is also much lower than the average of peers. This has been associated with large out-of-pocket payments for households, significantly higher than in peers.

to intensify going forward. Health expenditure rose by 1.1 percent of GDP between 2000 and 2019, driven by aging but also excess cost growth due to rising incomes and technological advances for instance. A large part of the increase in health care spending was absorbed by the government.

10. **Staff estimates suggest that Singapore's total healthcare spending could double by 2050 to 9 percent of GDP**.[9] The results show that total healthcare spending in Singapore could rise to 8.6 percent of GDP in 2050, from 4.2 percent in 2015, driven by both rapid aging and by excess cost growth (IMF, 2019a).[10] The analysis follows the methodology of Soto, Shang, and Coady (2012) and uses UN estimates of the average age-distribution of spending across advanced economies, UN forecast for population by age cohort for Singapore, and historic excess cost growth for Singapore, with the latter being comparable to the average for advanced economies. Risks that actual costs are larger than the estimate above are significant. For instance, costs would be substantially larger if age-specific utilization rates (demand for healthcare) keep rising due to (i) a higher prevalence of chronic disease considering the longer life expectancy (Yoong, Lim and Lin, 2017) or (ii) rising affluence that leads to greater consumption of healthcare services and expectations for higher quality healthcare (Lim, 2017). Supply-side cost increases could also lead to substantially larger actual healthcare costs. For instance, labor force shrinkage could lead to higher wages in the healthcare sector and advancement in medical technology and experimental treatments could lead to higher costs.

Singapore: Estimated Increase in Healthcare Spending, 2025 to 2050
(In percent of GDP)



Source: Ministry of Finance Singapore, United Nations, and IMF staff estimates.
Note: Based on methodology of Soto, Shang, and Coady (2012). Excess cost growth is defined as the growth in public health spending in excess of GDP growth after controlling for aging. Excess cost growth is attributable to the combined effect of nondemographic factors, including rising incomes, technological advances, the Baumol effect, and health policies, and institutions.

Potential Cost of a More Permanent Social Protection System

11. **Singapore has relied successfully on active labor market policies (ALMP) to support workers**. Singapore does not have unemployment insurance but helps workers maintain employment through numerous ALMP programs such as on-the-job training, employment subsidies, and job matching through public employment services. While Singapore spends relatively less on labor market programs, the country achieved stronger labor market outcomes including high labor market participation, low unemployment rates, and higher social mobility compared to most peers (IMF, 2019a). During the pandemic, Singapore bolstered labor market policies by introducing a comprehensive set of measures to cushion the immediate impact of the pandemic, most of which have expired (IMF, 2021). This has helped resident unemployment to return rapidly to the pre-

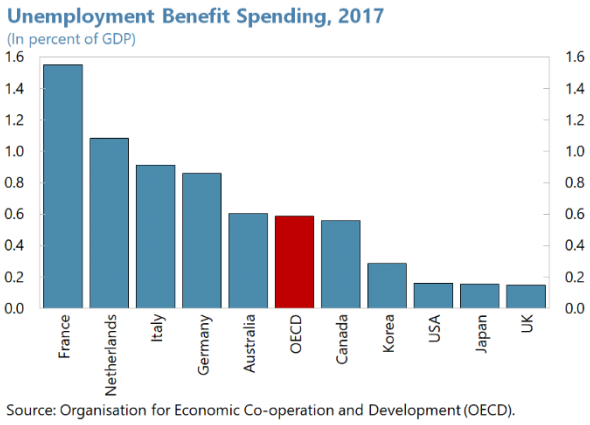
[9] See Appendix V in the 2019 Singapore Article IV Staff Report for a detailed discussion of Singapore's aging healthcare system and spending.

[10] These estimates are in line with those by Tan (2015), who found that per capita healthcare expenditure in Singapore will double by 2060, with total health expenditure reaching 8.7 percent of GDP.

pandemic level and helped minimized the loss of schooling hours during the pandemic, the later limiting human capital scarring and preserving future social mobility.

12. **Strengthening spending automatic stabilizers could further help smooth shocks if these become more frequent**. While the height of the economic impact of the pandemic may have passed as countries are adapting to live with the virus, the resurgence of highly contagious variants and future tightening of social distancing measures is not a remote possibility. Singapore's approach of enhancing existing schemes to respond to shocks by supporting employment has worked well. As shocks may become more frequent and prevalent, possible needs to strengthen automatic stabilizers through strengthening the social protection system and the social compact could arise. This could also help reduce the number existing and ad-hoc programs, reduce administrative burden, and raise public awareness about existing schemes.

13. **The cost of a permanent social protection system will depend on its design**. For instance, spending on unemployment insurance varies across countries depending on factors such as the income replacement rate, the duration of the benefit, and the qualification criteria. A look at cross-country data illustrates that the cost of unemployment insurance varies, with an OECD average of 0.6 percent of GDP, which is close to Singapore's wage subsidies under the JSS in FY2021.



Source: Organisation for Economic Co-operation and Development (OECD).

Other Rising Spending Pressures and Putting it Together

14. **Singapore is also facing other medium-term spending pressures, including from climate change, investment in public housing and infrastructure, and risk of pandemic.**

- Singapore is significantly exposed to climate change risks, especially to rising sea levels due to its geography. To fund investment in climate-resilient infrastructure, the authorities have started provisioning under a new Coastal and Flood Protection Fund. Discussions with the authorities suggest that capital spending needed to construct new infrastructure and rejuvenate aging infrastructure in Singapore could raise development spending by 1 percent of GDP per year. The government has started to issue new bonds under the Significant Infrastructure Government Loan Act (SINGA) to finance major long-term infrastructure projects, such as new rail lines, water management facilities and infrastructure to protect against rising sea levels.

- The pandemic has had a large cost to the economy in Singapore and the cumulative cost of the economic packages to mitigate the economic fallout is about 24 percent of GDP over 3 years, with the first year alone amounting to 20 percent of GDP.

15. **Singapore's large fiscal reserves will allow the country to face the sizeable total cost of rising spending pressures**. With new revenue measures (higher GST, residential property tax, personal income tax and luxury car tax) expected to yield about 0.8 percent of GDP, the net total cost of spending pressures could be in tune of 5 percent of GDP. This assumes that, as indicated by the authorities, revenues from carbon tax hikes will be directed to climate goals not included in the spending estimations above. The estimated amount is clouded by large uncertainties and should be seen as a guide rather than a precise estimate. While planned revenue mobilization, for instance the GST, wealth, and personal tax increases, and public borrowing will help address some spending pressures, a slower pace of fiscal surplus accumulation will also help Singapore manage rising spending needs. Singapore's large fiscal reserves will continue to act as buffers against large shocks such as the pandemic.

16. **The implementation of a large spending program will ultimately help accelerate the country's economic transformation and improve its external position.** Higher public spending, in particular investment, to address Singapore's medium- and long-term challenges and support economic transformation will lower net public saving and reduce CA imbalances. An expansion of social services in areas such as healthcare and unemployment insurance would reduce incentives for private savings and support stronger automatic stabilizers.

Possible Net Costs Associated with Spending Pressures

Source of spending pressure/risk	Annual Cost (percent of GDP)
Increase in health care spending	4
Potential cost of an enhanced social protection system (unemployment insurance)	0.6
Spending needs to support major long-term infrastructure, including for climate change (SINGA)	1
Total gross spending pressures	5.6
Planned Revenue Measures in FY22 Budget	*-0.8*
of which:	
GST	*-0.7*
Wealth tax	*-0.1*
Total net spending pressures	**4.8**

References

Dabla-Norris and others, 2021, "Digitalization and Taxation in Asia" Departmental Paper.

IMF, 2021 Singapore Article IV, Appendix II. "Labor Market Policy Responses to the COVID-19 Crisis".

IMF, 2019a, Singapore 2019 Article IV Consultation, Appendix V. "Aging and Healthcare Spending"

IMF, 2019b, Singapore 2019 Article IV Consultation, Appendix VIII. "Labor Market Policies"

Kinda T., 2021, "The Digital Economy: A Potential New Engine for Productivity Growth," MAS Macroeconomic Review, Box A, pp. 43-49.

Kinda, Lengyel, and Chahande, 2022, Fiscal Multipliers during Pandemics, IMF Working Paper, Forthcoming

Lim, J., 2017, "Sustainable Health Care Financing: The Singapore Experience", Special Issue: Health Care Policy, Resource Allocation and Financial Sustainability, Global Policy, Volume 8, Supplement 2, March 2017, Pages 103-109.

Soto, M. B. Shang, and D. Coady, 2012, "New Projections of Public Health Spending, 2010-50", The Economics of Public Health Care Reform in Advanced and Emerging Economies, edited by B. Clements, D. Coady and S Gupta. Washington DC: International Monetary Fund.

Tan, K. B., 2015, "Fiscal sustainability of healthcare financing in Asia: Challenges and Responses" Presentation by Dr Kelvin Bryan Tan, Director Policy, Research and Economics Office, Ministry of Health, Singapore, at the 12th Health and Ageing Conference, "Insuring Health Care for the Elderly in Asia", 16-17 November 2015, Singapore.

Yoong, J., W. Y. Lim, L. Lin, 2018, "Chapter 8. Singapore", in Resilient and people-centred health systems: Progress, challenges and future directions in Asia, edited by Legido-Quigley, H. and N. Asgari-Jirhandeh. World Health Organization. Regional Office for South-East Asia.

Appendix II. External Sector Assessment

<table>
<tr><td colspan="6">Overall Assessment: The external position in 2021 was substantially stronger than the level implied by medium-term fundamentals and desirable policies. The assessment is subject to a wide range of uncertainty, reflecting Singapore's very open economy and status as a global trading and financial center. In the near-term, the war in Ukraine is expected to narrow the CA surplus due to a related negative term of trade shock for Singapore. Over the medium-term, the CA surplus is projected to narrow gradually alongside an increase in household consumption as the share of prime working age population actively saving for retirement declines, the recovery of capital-related imports and higher public spending.

Potential Policy Responses: The planned execution of major green infrastructure projects should help reduce external imbalances in the near term. Over the medium term, Singapore's economy will be undergoing structural transformation in light of a rapidly aging population and a transition to a green and digital economy. Higher public investment addressing these issues, including spending on health care, green and other physical infrastructures, and human capital, would help reduce external imbalances over the medium term by lowering net public saving.</td></tr>
<tr><td>Foreign Asset and Liability Position and Trajectory</td><td colspan="5">Background. The NIIP stood at 256.4 percent of GDP in 2021, down from 280.8 percent of GDP in 2020 but above the average level of 231.1 percent of GDP in 2016-2020. Gross assets and liabilities are high, reflecting Singapore's status as a financial center. About a half of foreign liabilities is in FDI, and about a third is in the form of currency and deposits. The current account (CA) surplus has been a main driver since the global financial crisis, but valuation effects were material in some years. CA and growth projections imply that the NIIP will rise over the medium term. The large positive NIIP in part reflects the accumulation of assets for old-age consumption, which is expected to be gradually unwound over the long term.

Assessment. Large gross non-FDI liabilities (477.9 percent of GDP in 2021)—predominantly cross-border deposit taking by foreign bank branches—present some risks, but these are mitigated by large gross asset positions, banks' large short-term external assets, and the authorities' close monitoring of banks' liquidity risk profiles. Singapore has large official reserves and other official liquid assets.</td></tr>
<tr><td>2021 (% GDP)</td><td>NIIP: 256.4</td><td>Gross Assets: 1240</td><td>Res. Assets: 105.3</td><td>Gross Liab.: 983.6</td><td>Debt Liab.: 383.9</td></tr>
<tr><td>Current Account</td><td colspan="5">Background. The CA surplus was 18.1 percent of GDP in 2021, up from 16.8 percent in 2020. This reflects larger surpluses in both the goods and services balances. The CA balance is higher than the average of 16.7 percent since 2016 and significantly lower than the post-global-financial-crisis peak of 22.9 percent in 2010. Singapore's large CA balance reflects a strong goods balance and a small surplus in the services balance that is partly offset by a deficit in the income account balance.[1] Structural factors and policies that boost savings, such as Singapore's status as a financial center, consecutive fiscal surpluses in most years, and the rapid pace of aging—combined with a mandatory defined-contribution pension program (whose assets were about 94.8 percent of GDP in 2021)—are the main drivers of Singapore's strong external position. The CA surplus is projected to narrow over the medium term on the back of increased infrastructure and social spending. In 2021, public saving increased albeit remaining in negative territory as the fiscal deficit narrowed, while private saving increased.

Assessment. Guided by the EBA framework, staff assesses the 2021 CA gap to be in the range of 3.4-7.0 percent of GDP, with a midpoint of 5.2 percent.[2] The identified policy gaps remained close to zero in 2021 reflecting a less expansionary fiscal policy adopted in 2021 in Singapore compared to the rest of the world and low but efficient public health care expenditure.</td></tr>
</table>

[1] Singapore has a negative income balance despite its large positive NIIP position, reflecting lower rates of return on its foreign assets relative to returns on its foreign liabilities, possibly due to the fact that the composition of Singapore's assets is tilted toward safer assets with lower returns.

[2] Nonstandard factors make a quantitative assessment of Singapore's external position difficult and subject to significant uncertainty. Singapore is not included in the EBA sample because it is an outlier along several dimensions. One possibility, though with drawbacks, is to use EBA estimated coefficients and apply them to Singapore. Following that approach, the CA norm is estimated to be about 14.8 percent of GDP in 2021 (including the multilateral consistency adjustor). However, using this approach understates the CA gap. In order to account for Singapore specificities, several adjustments are needed. First, a downward adjustment of 1.2 percentage points is made to EBA's implied contribution of public health expenditures to the norm to account for the fact that Singapore's health expenditure is appropriate given its high efficiency, even though its desirable, as well as current, public health expenditure is significantly lower than in other EBA countries. Second, the EBA model does not include the impact of the COVID-19 shock on the CA thus a total of -1.4 percent of GDP adjustment is applied to account for this transitory impact including i) travel adjustor of -1.3 percent of GDP, ii) transport adjustor of 0.7 percent of GDP, iii) household consumption shift adjustor of -0.8 percent of GDP and iv) medical goods adjustor of 0.0 percent of GDP. Third, a downward adjustment of 3.7 percentage points to the norm is made to better account for the effect of NFA composition and component-specific return differentials on the CA. Fourth, notwithstanding possible partial double-counting with the NFA components adjustor, a downward adjustment of -2.4 percentage point of GDP is applied to the underlying CA to account for measurement biases due to inflation and portfolio equity retained earnings (-4.9 and +2.5 percent of GDP respectively). Adjusting for these factors, the staff-estimated CA gap is about 5.2 percent of GDP, to which the fiscal gap contributes about 0.6 percent of GDP, credit gap about -0.5 percent of GDP, public health spending about -0.1 percent of GDP, and reserves about 0.0 percent of GDP.

2021 (% GDP)	CA: 18.1	Cycl. Adj. CA: 18.9	EBA Norm:	EBA Gap:	COVID-19 Adj.: -1.4	Other Adj.:	Staff Gap: 5.2
Real Exchange Rate	**Background.** The REER depreciated by 0.3 percent in 2021 reflecting the depreciation of the NEER by 0.4 percent. This followed a depreciation of the REER by 2.3 percent and an appreciation of the NEER by 0.2percent, both cumulative, between 2018 and 2020. As of January 2022, the REER had appreciated by 1.2 percent relative to 2021 average. **Assessment.** Consistent with the staff CA gap, staff assesses the REER to be undervalued in the range of 6.8 to 14 percent, with a midpoint of 10.4 percent in 2021 (applying an estimated elasticity of 0.5).[3]						
Capital and Financial Accounts: Flows and Policy Measures	**Background.** Singapore has an open capital account. As a trade and financial center in Asia, changes in market sentiment can affect Singapore significantly. Increased risk aversion in the region, for instance, may lead to inflows to Singapore given its status as a regional safe haven, whereas global stress may lead to outflows. The financial account balance reflects in part reinvestment abroad of income from official foreign assets, as well as sizable net inward FDI and smaller but more volatile net bank-related flows. In 2021, the capital and financial account switched to outflows of 2.1 percent of GDP from temporary inflows of 4.6 percent in 2020 (outflows ranged from 9.5 to 18 percent in 2016–20). **Assessment.** The financial account is likely to remain in deficit as long as the trade surplus remains large.						
FX Intervention and Reserves Level	**Background.** With the NEER as the intermediate monetary policy target, intervention is undertaken to achieve inflation and output objectives. As a financial center, prudential motives call for a larger NIIP buffer. Official reserves held by the MAS reached US$417.9 billion (105.3 percent of GDP) in 2021. Aggregate data on foreign exchange intervention operations has been published since Apr 2020. **Assessment.** In addition to FX reserves held by the Monetary Authority of Singapore (MAS), Singapore also has access to other official foreign assets managed by Temasek and GIC.[4] The current level of official external assets appears adequate, even after considering prudential motives, and there is no clear case for further accumulation for precautionary purposes.						

[3] We apply the maximum range of +/-1.8 percent in the EBA sample for the CA gap reflecting the uncertainty around Singapore's assessment.

[4] The reserves-to-GDP ratio is also larger than in most other financial centers, but this may reflect in part that most other financial centers are in reserve-currency countries or currency unions. External assets managed by the government's investment corporation and wealth fund (GIC and Temasek) amount to at least 100 percent of GDP.

Appendix III. Global Risk Assessment Matrix 1/

Risks	Likelihood	Impact of Risk (High, Medium, Low)	Policy Response
War in Ukraine leads to escalation of sanctions and deglobalization. Sanctions on Russia are broadened to include oil and gas sectors, and Russia is disconnected from much of the global financial and trade system. Countersanctions by Russia and secondary sanctions on countries and companies that continue business with Russia aggravate geopolitical tensions. This leads to higher commodity prices, refugee migration, market fragmentation, extended supply chain disruptions, production reshoring, tighter financial conditions, lower global demand, and less trade.	**High:** A slowdown in main trading partners would slow growth through lower exports and damage business confidence, while higher global risk premia may expose financial vulnerabilities.	**Medium (downside):** A slowdown in key export markets would impact Singapore's recovery and damage business confidence. lower growth and damage to business confidence would adversely impact investment and the recovery in private consumption.	Extend some of the support measures already in place: (i) fiscal support to affected workers and businesses in affected sectors and (ii) if necessary, provide liquidity support to financial markets; use prudential regulatory actions to address asset quality deterioration and encourage debt resolution.
Outbreaks of lethal and highly contagious COVID-19 variants. Rapidly increasing hospitalizations and deaths due to low vaccine protection or vaccine-resistant variants force more social distancing and/or new lockdowns. This results in extended supply chain disruptions and a reassessment of growth prospects, triggering capital outflows, financial tightening, currency depreciations, and debt distress in some EMDEs.	**High:** Failure to contain COVID-19 in trade partners leads to prolonged lockdowns and greater uncertainty.	**Medium (downside):** A slowdown in key export markets would impact Singapore's recovery and damage business confidence. However, Singapore's high-tech exports represent a mitigant which would help limit the impact.	Extend some of the support measures already in place: (i) fiscal support to affected workers and businesses in affected sectors; (ii) keep the monetary policy stance loose; (iii) if necessary, provide liquidity support to financial markets; use prudential regulatory actions to address asset quality deterioration and encourage private debt resolution.
Abrupt growth slowdown in China. A combination of extended COVID-19 lockdowns, rising geopolitical tensions, a sharper-than-expected slowdown in the property sector, and/or inadequate policy responses result in a sharp slowdown of economic activity, with spillovers affecting other countries through supply chain disruptions, trade, commodity-price, and financial channels.	**Medium:** A slowdown in main trading partners would slow growth through lower exports and damage business confidence.	**Medium (downside):** Slower growth and damage to business confidence would adversely impact investment and the recovery in private consumption.	Provide support to affected workers and businesses and keep financial conditions accommodative and support lending.
De-anchoring of inflation expectations in the U.S. and/or advanced European economies. Worsening supply-demand imbalances, higher commodity prices, and higher nominal wage growth lead to persistently higher inflation and inflation expectations, prompting central banks to tighten policies faster than currently anticipated. The resulting sharp tightening of global financial conditions and spiking risk premia lead to currency depreciations, asset market selloffs, bankruptcies, sovereign defaults, and contagion across EMDEs.	**Medium:** Tightening in global financial conditions and spike in risk premia that exposes financial vulnerabilities.	**Medium(downside):** Slower growth and damage to business confidence would adversely impact investment and the recovery in private consumption.	Extend support measures: (i) asset purchase program to support liquidity in bond markets, compress risk premia and strengthen the transmission of monetary policy; (ii) provide liquidity support to banks.

1/ The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path (the scenario most likely to materialize in the view of IMF staff). The relative likelihood is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability between 30 and 50 percent).

Risks	Likelihood	Impact of Risk (High, Medium, Low)	Policy Response
Rising and volatile food and energy prices. Commodity prices are volatile and trend up amid pent-up demand and supply disruptions, wars, export restrictions, and currency depreciations. This disrupts the green transition and leads to bouts of price and real sector volatility, food insecurity, social unrest, and acute food and energy crises (esp. in countries with lack of fiscal space for policy response).	**High:** Adverse developments could further damage confidence and demand.	**Medium (downside):** As a larger importer of commodities, this would damage confidence, slow down the recovery, and increase inflationary pressures.	Provide targeted support to vulnerable groups to ensure inclusive recovery.
Widespread social discontent and political instability. Social unrest fueled by increasing prices and shortages of essentials, rising inequality, and heavier household debt burdens triggers political instability, capital outflows and higher unemployment.	**High:** Damage confidence and demand.	**Medium (downside):** Slower growth and damage to business confidence would adversely impact investment.	Extend support measures in place: (i) fiscal support to businesses; (ii) keep monetary policy loose; (iii) provide liquidity support to financial markets.
Geopolitical tensions and de-globalization. Intensified geopolitical tensions, security risks, conflicts, and wars cause economic and political disruptions, disorderly migration, production reshoring, a decline in global trade, and lower investor confidence. Associated supply chain disruptions and commodity price shocks give rise to inflationary pressures.	**High:** This would impact main trading partners and slow exports and damage confidence. It may also result in higher inflationary pressures.	**Medium (downside):** Slower growth coupled with higher inflationary pressures would adversely impact investment and the recovery in private consumption. Singapore's high-tech exports is a mitigant that lowers the likelihood of impact from trade disruptions.	Provide targeted fiscal support to vulnerable groups to help individuals and businesses.
Cyberthreats. Cyberattacks on critical physical or digital infrastructure (including digital currency platforms) trigger financial instability or widespread disruptions in socio-economic activities.	**Medium:** Volatility could increase in the global financial markets. Exports could be temporarily adversely affected.	**Low (downside):** Damage business confidence in Singapore and slow the economic recovery.	Provide policy stimulus and liquidity support if needed.
Natural disasters related to climate change. Higher frequency of natural disasters cause severe economic damage to smaller vulnerable economies and accelerate emigration. Severe events in large economies hitting key infrastructure reduce global GDP, cause further supply chain disruptions and inflationary pressures, and prompt a recalculation of risk and growth prospects.	**Medium:** Higher financial market volatility reflecting more elevated risk premia. Singapore's exports could be temporarily adversely affected.	**Medium (downside):** Slower growth coupled with higher inflationary pressures would adversely impact investment and the recovery in private consumption. Singapore's high-tech exports is a mitigant that lowers the likelihood of impact from trade disruptions.	Provide targeted fiscal support to vulnerable groups to help individuals and businesses. Liquidity support to financial markets if necessary to keep financial conditions accommodative.
Domestic Risks			
Balance sheet stress. Around 30 percent of corporate debt is at-risk, with the SME sector more vulnerable and employing a higher share of the local workforce.	**Medium:** House prices soften, weakening balance sheets given debt levels, and slow growth.	**High:** Recovery would be more uneven.	Maintain accommodative fiscal and monetary policies. Use macroprudential policies to limit risks to the banking system.

Appendix IV. Public Debt Sustainability Analysis

Singapore's public debt is sustainable and large public financial assets are important risk mitigating factors. The unprecedently large fiscal support in response to the COVID-19 pandemic and associated widening of the fiscal deficit did not lead to a substantial accumulation of debt as the fiscal measures were financed through a drawdown of public reserves. With growth rebounding vigorously from the 2020 economic contraction, the debt-to-GDP ratio has declined in 2021 after a spike during the downturn and is projected to trend slightly downward going forward.

1. **Background.** Singapore is a low scrutiny country in the debt sustainability analysis (DSA) framework for market access countries. Public debt stood at about 152 percent of GDP as of end of FY2020. All debt is held domestically and issued in local currency.

2. **Debt accumulation in Singapore is unrelated to deficit financing.** Fiscal policy in Singapore is anchored by a fiscal rule enshrined in the Constitution. The rule mandates a balanced budget over the 5-year political cycle. Strong compliance with the rule has led to sustained fiscal surpluses and the buildup of large net assets.[1] The issuance of government debt securities is largely unrelated to the Government's fiscal needs. The Singapore Government issues domestic, local-currency debt securities to mainly deepen the domestic debt market, to meet the investment needs of the Central Provident Fund (CPF),[2] and to provide individual investors with a long-term saving option that offers safe returns.[3] Following the Government Securities Act, together with the Constitutional balanced budget rule, borrowing proceeds were not used to fund government expenditures, but to invest. Since 2021, Singapore has started to finance major long-term infrastructure projects such as rail lines, water management facilities, and infrastructure to protect against rising sea levels through borrowing under the Significant Infrastructure Government Loan

[1] The Government's gross assets are mainly managed by GIC Private Limited (total amount is undisclosed, but well over US$100 billion or 21 percent of GDP). The government also places deposits with the MAS (8.7 percent of GDP as of March 31, 2020). In addition, the Government is the sole equity shareholder of Temasek Holdings. Temasek's portfolio was S$363 billion as of March 31, 2020 (71 percent of GDP).

[2] The Central Provident Fund (CPF) is a comprehensive social security system that enables working Singapore Citizens and Permanent Residents to set aside funds for retirement. It also addresses healthcare, home ownership, family protection, and asset enhancement. The CPF is financed by mandatory payroll contributions from employers (up to 17 percent) and employees (up to 20 percent). Over the last 5 years, contributions to CPF have amounted to 8 percent of GDP and withdrawals to 4.1 percent, on average. The CPF balance as of December 31, 2021, was about 94.9 percent of GDP.

[3] The government issues four types of debt securities: (1) Singapore Government Securities (SGS), marketable debt instruments issued primarily to provide a robust government yield curve for the pricing of private debt securities and to foster the growth of an active secondary market to enable efficient risk management and also to finance investment under the Significant Infrastructure Government Loan Act; (2) Special Singapore Government Securities (SSGS), non-marketable bonds primarily issued to the CPF Board with a guaranteed floor on interest rates; and (3) Singapore Saving Bonds (SSB), non-tradable securities introduced in 2015 where principal and interest payments interest (linked to long-term SGS rates) are guaranteed by the government; and (4) the Reserves Management Government Securities (RMGS), non-marketable securities introduced in 2020 and denominated in Singapore dollars to be issued solely for the purpose of facilitating transfers of excess reserves from MAS to the government for longer-term investment by GIC. The use of RMGS does not result in new purchases of foreign assets by the Singapore government. However, it affects the composition of Singapore's foreign assets, given the different investment practices of MAS and GIC.

Act. About S$35 billion (6 percent of 2022 GDP) in green bonds are expected to fund green infrastructure projects by 2030.

3. **Macro-fiscal assumptions.** After widening to 8.4 percent of GDP in 2020, the central government fiscal deficit narrowed to 2.3 percent of GDP in 2021, reflecting a shift from broad-based and large fiscal support in 2020, to targeted assistance in 2021 in the line with the strong economic recovery. Under staff's baseline projections, the fiscal balance is expected to gradually return to a balanced budget starting in 2024. Staff's baseline includes various tax reforms, including an increase in: (i) residential property tax in 2023; (ii) Goods and Services Tax (GST) rate between 2023 and 2024; (iii) personal income tax in 2024; and (iv) carbon tax between 2024 and 2030.

4. **Data coverage.** Consistent with the data on government debt reported by the authorities, the fiscal assumptions in this DSA are based on the central government debt.

5. **Debt level is projected to decline sharply following a spike in 2020.** Debt-to-GDP ratio increased to 152 percent of GDP in 2020, mainly reflecting the interest-growth differential as the economy contracted, and is projected to peak at 160 percent of GDP in 2021. The large fiscal support during the pandemic was financed through a drawdown of public reserves. Over the medium-term, the debt-to-GDP ratio is projected to slowly decline to147 percent of GDP by 2027, reflecting two almost offsetting factors: (i) a modest rise in investment needs by the CPF as employment growth slows in line with population aging and (ii) a slightly lower fiscal deficit due higher revenue collection following the implementation of various tax reforms. Gross financing needs (GFN) are expected to average about 21 percent of GDP per annum in the medium term.

6. **A high level of financial assets mitigates the risks associated with public debt.** The projected GFN, mostly driven by the CPF's investment needs, are expected to be mirrored one-for-one with an accumulation of assets by the government. Moreover, under the Net Investment Returns Contribution (NIRC) framework, only up to 50 percent of the long-term expected returns earned on net assets (i.e. assets net of interest costs and liabilities) can be used as budget revenue.[4] This contributes to asset buildup and helps deliver a sustainable revenue stream.

[4] The Net Investment Returns Contribution (NIRC) to the budget comprises up to 50 percent of the expected long-term real returns on the net assets invested by GIC, MAS and Temasek, and up to 50 percent of the investment income from the remaining assets.

Figure 1. Singapore: Public Sector Debt Sustainability Analysis (DSA) – Baseline Scenario

(In percent of GDP unless otherwise indicated)

Debt, Economic and Market Indicators [1/]

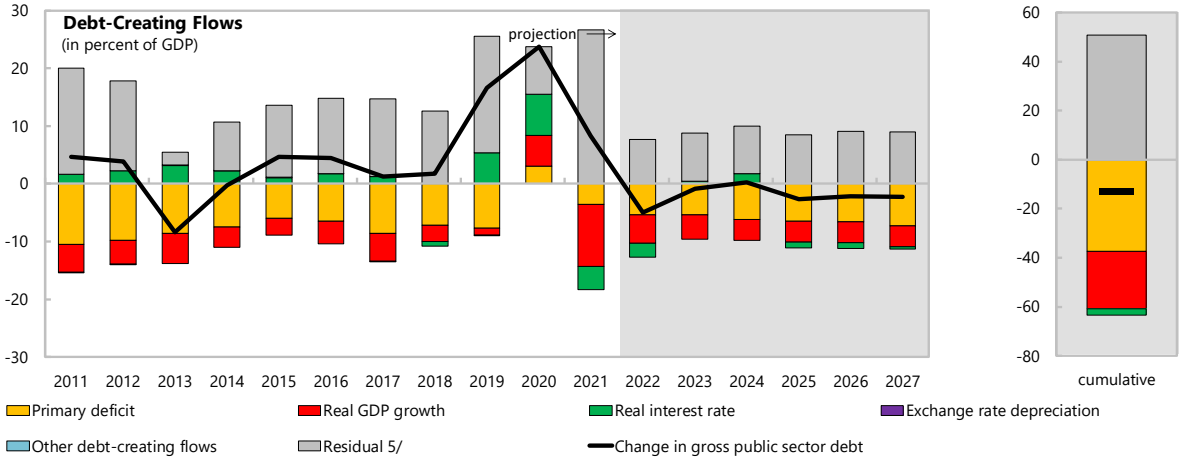
	Actual			Projections					
	2011-2019 [2/]	2020	2021	2022	2023	2024	2025	2026	2027
Nominal gross public debt	108.2	152.0	160.2	155.3	154.4	154.6	152.0	149.8	147.5
Public gross financing needs	8.7	26.8	22.3	22.2	21.8	21.2	20.9	20.6	21.1
Real GDP growth (in percent)	3.7	-3.9	8.0	3.3	2.8	2.4	2.5	2.5	2.5
Inflation (GDP deflator, in percent)	1.1	-2.5	5.4	4.2	2.2	1.5	3.3	3.3	3.3
Nominal GDP growth (in percent)	4.8	-6.3	13.9	7.6	5.2	4.0	5.9	5.9	5.9
Effective interest rate (in percent) [4/]	3.1	2.8	2.8	2.7	2.6	2.7	2.7	2.7	3.1

As of March 10, 2022

Sovereign Spreads		
EMBIG (bp) 3/		-20
5Y CDS (bp)		N/A
Ratings	Foreign	Local
Moody's	Aaa	Aaa
S&Ps	AAA	AAA
Fitch	AAA	AAA

Contribution to Changes in Public Debt

	Actual			Projections							
	2011-2019	2020	2021	2022	2023	2024	2025	2026	2027	cumulative	debt-stabilizing
Change in gross public sector debt	3.2	23.7	8.3	-5.0	-0.8	0.2	-2.7	-2.2	-2.3	-12.7	primary
Identified debt-creating flows	-9.7	15.5	-18.3	-12.7	-9.1	-8.1	-11.1	-11.2	-11.3	-63.4	balance [11/]
Primary deficit [5/]	-8.0	3.0	-3.6	-5.4	-5.3	-6.2	-6.4	-6.6	-7.3	-37.4	...
Revenue and grants	17.7	17.9	18.4	17.6	16.7	17.4	17.7	18.0	18.1	105.5	
Primary (noninterest) expenditure	9.6	20.9	14.8	12.2	11.3	11.2	11.3	11.4	10.8	68.2	
Automatic debt dynamics [6/]	-1.7	12.5	-14.7	-7.3	-3.7	-1.9	-4.7	-4.6	-3.9	-26.1	
Interest rate/growth differential [7/]	-1.7	12.5	-14.7	-7.3	-3.7	-1.9	-4.7	-4.6	-3.9	-26.1	
Of which: real interest rate	2.0	7.1	-4.0	-2.4	0.5	1.7	-1.0	-1.0	-0.4	-2.6	
Of which: real GDP growth	-3.7	5.4	-10.7	-4.9	-4.2	-3.6	-3.7	-3.6	-3.6	-23.5	
Exchange rate depreciation [8/]	0.0	0.0	0.0	...	...	...	...	...	...	...	
Other identified debt-creating flows	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Residual, including asset changes [9/ 10/]	12.9	8.2	26.6	7.7	8.2	8.3	8.5	9.1	9.0	50.7	



Source: IMF staff.

1/ Public sector is defined as central government.

2/ Based on available data.

3/ Long-term bond spread over U.S. bonds.

4/ Defined as interest payments divided by debt stock (excluding guarantees) at the end of previous year.

5/ Primary balance is defined here as net lending/borrowing minus interest payments.

6/ Derived as [(r - π(1+g) - g + ae(1+r)]/(1+g+π+gπ)) times previous period debt ratio, with r = interest rate; π = growth rate of GDP deflator; g = real GDP growth rate; a = share of foreign-currency denominated debt; and e = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

7/ The real interest rate contribution is derived from the numerator in footnote 5 as r - π (1+g) and the real growth contribution as -g.

8/ The exchange rate contribution is derived from the numerator in footnote 5 as ae(1+r).

9/ Includes debt accumulation unrelated to government's fiscal needs. Domestic debt securities are issued to meet investment needs of Central Provident Fund, to deepen domestic debt market, and provide long-term savings option.

10/ Includes asset changes and interest revenues (if any). For projections, includes exchange rate changes during the projection period.

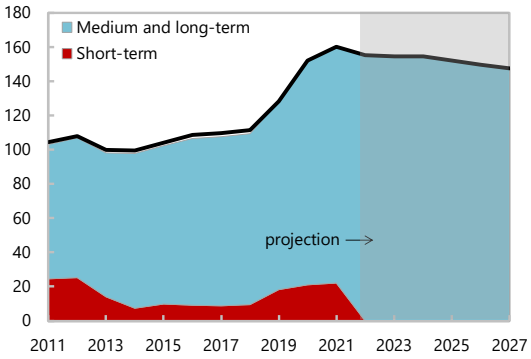
11/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

Figure 2. Singapore: Public DSA Composition of Public Debt and Alternative Scenarios

Composition of Public Debt

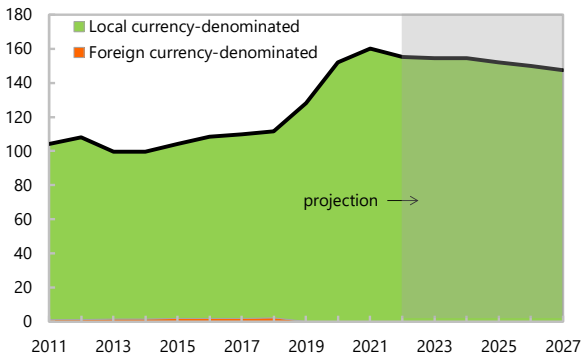
By Maturity

(in percent of GDP)

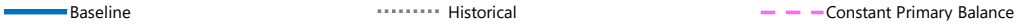


By Currency

(in percent of GDP)

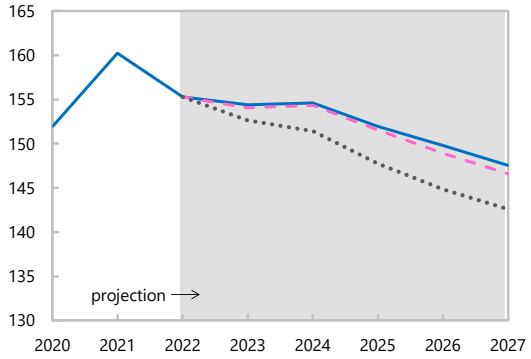


Alternative Scenarios



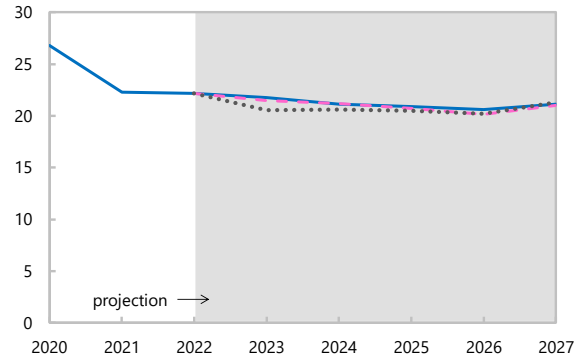
Gross Nominal Public Debt

(in percent of GDP)



Public Gross Financing Needs

(in percent of GDP)



Underlying Assumptions

(in percent)

Baseline Scenario	2022	2023	2024	2025	2026	2027
Real GDP growth	3.3	2.8	2.4	2.5	2.5	2.5
Inflation	4.2	2.2	1.5	3.3	3.3	3.3
Primary Balance	5.4	5.3	6.2	6.4	6.6	7.3
Effective interest rate	2.7	2.6	2.7	2.7	2.7	3.1
Constant Primary Balance Scenario						
Real GDP growth	3.3	2.8	2.4	2.5	2.5	2.5
Inflation	4.2	2.2	1.5	3.3	3.3	3.3
Primary Balance	5.4	5.4	5.4	5.4	5.4	5.4
Effective interest rate	2.7	2.6	2.7	2.7	2.7	3.1

Historical Scenario	2022	2023	2024	2025	2026	2027
Real GDP growth	3.3	3.2	3.2	3.2	3.2	3.2
Inflation	4.2	2.2	1.5	3.3	3.3	3.3
Primary Balance	5.4	6.2	6.2	6.2	6.2	6.2
Effective interest rate	2.7	2.6	3.1	3.5	3.8	4.6

Source: IMF staff.

Appendix V. Income Inequality and the COVID-19 Pandemic in Singapore[1]

The evidence shows that past pandemics have increased inequality by disproportionally affecting the poorest and most vulnerable members of the society which are more at risk of losing their jobs and income. This appendix attempts to explore inequality trends pre-COVID in Singapore as well as during COVID through its impact across income groups and its impact on different workers groups in the labor market. The appendix also discusses the mitigating role of policy and potential areas with more scope for policy support that could minimize inequality risks and thereby enhance inclusive growth.

A. Background: Pre-COVID Context and Recent Trends

1. **After peaking successively in 2007 and in 2012, inequality in Singapore has been on a declining trend but remained high pre-pandemic compared to peers after taxes and transfers.[2]** Over the last two decades, income inequality as measured by the Gini index reached the peak of 0.48 in 2007 and 2012 when income dynamics benefitted more to the upper portions of the income distribution (Figure 1). Wah (2012) argues that the peak in inequality in 2007 was driven by the fact that income growth has benefited workers in the export-oriented sector.[3] In 2012, the lowest decile saw a contraction in real income from work by 1.2 percent, while the highest income group benefited from a significant growth of 5.1 percent. Since 2007, income inequality after taxes and transfers has been on declining trend.[4] Pre-pandemic, between 2019 and 2000, cross-country data shows that the market Gini index has decreased cumulatively by 2.6 percent while the net Gini index has decreased by 1.4 percent, but inequality after taxes and transfers remained high compared to peers.

2. **Singapore has experienced an impressive real income per capita growth over the last two decades.** Real GDP per capita almost tripled between 2000 and 2019 (from USD 23,853 to USD 65,831). Resident employed households' incomes have grown on average by 3.1 percent over the same period (2000-2019). This overall average growth rate hides some disparities across income groups and across time as shown by the growth incidence curves (Figure 1). More specifically, overall, the bottom 10 percent has benefited only of a 1.7 percent growth in real income (below average), while the nineth decile enjoyed the highest growth of 3.5 percent. Further, while in the first decade (2000 – 2009), the lower-income groups saw lower real income growth compared to higher-

[1]Prepared by Kodjovi Eklou.

[2] Singapore provides substantial housing subsidies, which are not factored into the computation of the Gini coefficient after taxes and transfers.

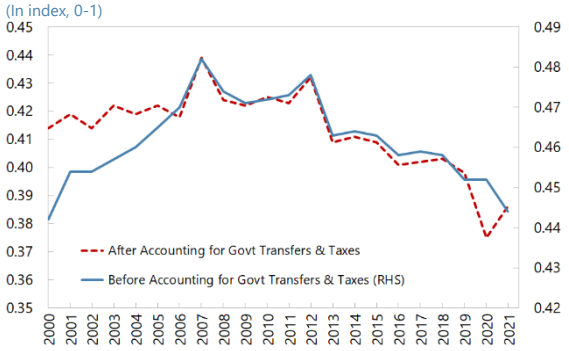
[3] Wah (2012) argues that the Singaporean economy has been a dual economy comprising two segments which are the "global periphery" and the "domestic core". While the "global periphery" enjoyed high growth on the back of greater opportunities in global markets the "domestic core" segment featured a sluggish performance because of low household consumption and high saving habits.

[4] Household income from work per household member (from Singapore Department of Statistics) used throughout the paper includes Employer CPF contribution.

Figure 1. Singapore: Inequality in Singapore, Recent Pre-COVID Trend and Comparison to Peers

Singapore: Gini Coefficient Among Resident Employed Households

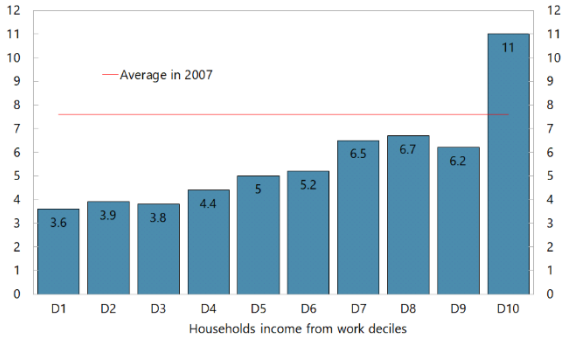
(In index, 0-1)



Sources: Singapore Department of Statistics.

Singapore: Real growth in income per member across deciles, 2007

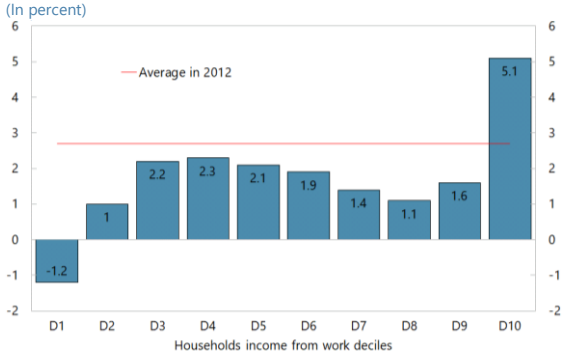
(In percent)



Sources: Singapore Department of Statistics.

Singapore: Real Growth in Income per Member Across Deciles, 2012

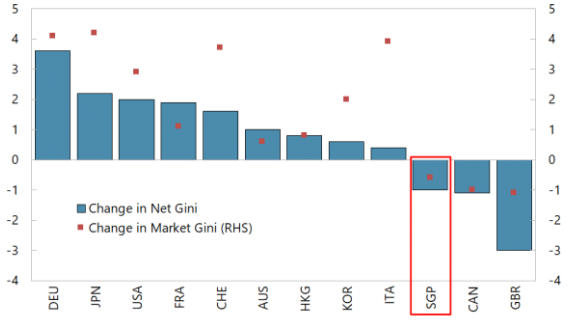
(In percent)



Sources: Singapore Department of Statistics.

Change in Net and Market Gini, 2000-latest

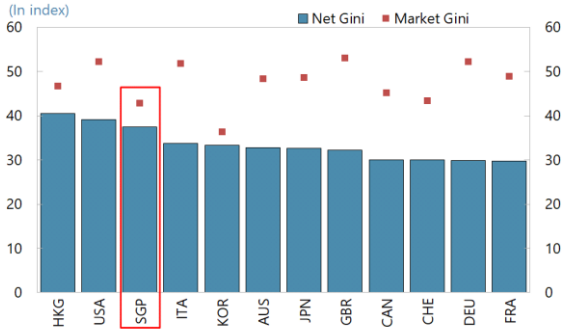
(In change in index, 0-100)



Notes: 2019 or latest availabe; AUS, KOR, JPN, and CHE as of 2018; HKG as of 2016.
Sources: Standardized World Income Inequality Database & IMF Staff Calculations.

Net and Market Gini, Pre-Pandemic

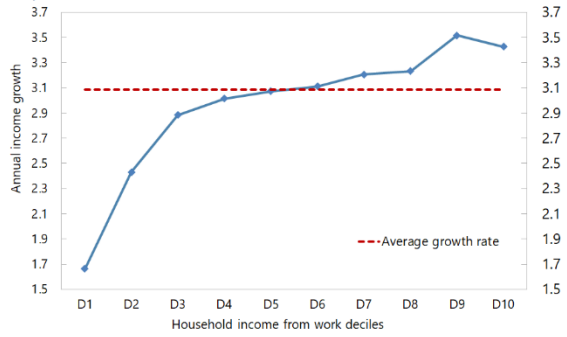
(In index)



Notes: 2019 or latest availabe; AUS, KOR, JPN, and CHE as of 2018; HKG as of 2016.
Sources: Standardized World Income Inequality Database & IMF Staff Calculations.

Singapore: Growth Incidence Curve, 2000-2019

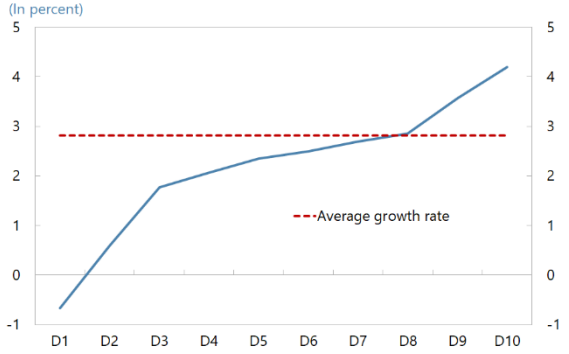
(In percent)



Sources: Singapore Department of Statistics and IMF Staff calculations.

Singapore: Growth Incidence Curve, 2000-2009

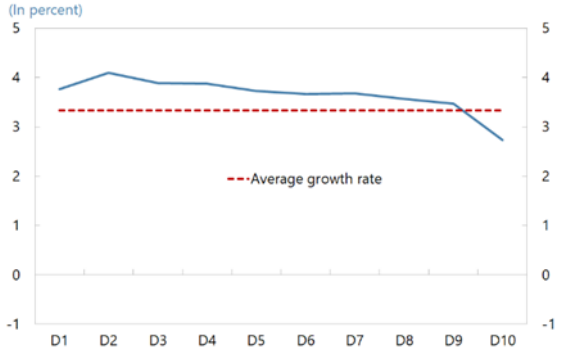
(In percent)



Sources: Singapore Department of Statistics and IMF Staff calculations.

Singapore: Growth Incidence Curve, 2010-2019

(In percent)



Sources: Singapore Department of Statistics and IMF Staff calculations.

income groups, this was reversed in the second decade (2009-2019). Policies were introduced, in the second decade to support income growth for lower wage workers (e.g., Special Employment Credit, Wage Credit Scheme, enhanced Workfare Income Supplement) and address the peak in inequality after the Great Financial Crisis. Between 2009 and 2019, real income of the bottom decile grew by 3.8 percent on average, surpassing 2.7 percent for the top decile.

B. Inequality in Time of Pandemics

3. **The literature shows that pandemics tend to increase inequality by disproportionally affecting the poorest and most vulnerable members of the population.** Furceri et al. (2021a), explored the impact of five epidemics that appeared in recent decades, namely SARS 2003, H1N1 2009, MERS 2012, Ebola 2014, and Zika 2016. They find that these events increased inequality, through output contractions and job losses for low-educated workers and thus redistributing income toward the less vulnerable and richer parts of the population.[5] Emmerling et al (2021) find similar results based on the five 21st century pandemic episodes, and project a persistent increase in income inequality, as measured by the Gini index, up to 2025. On the current pandemic, Schmitt-Grohé et al. (2020) find that, in the early stages of the spread of the SARS-CoV-2 virus in the United States, the relative impact of the virus was far larger on poor communities than on affluent ones. These findings suggest that COVID-19 could lead to a rise in inequality. Indeed, the evidence suggests that channels through which the pandemic can amplify existing inequalities (as identified in Dosi et al., 2020), including inequities in risk of contagion, access to hospitalization, ability to work remotely, and risk of longer-term job loss, have been operative.

4. **Initial conditions and policy support shape the impact of pandemics on inequality.** Furceri et al. (2021b) show that the rise in inequality in the aftermath of major pandemics over the last two decades has been higher in episodes with a lack of fiscal support. The increase in inequality is particularly large in cases with lower fiscal deficits, lower public health expenditures, and lower redistribution, in contrast to cases that did not pursue austerity policies. These findings suggest that fiscal support, in terms of public health spending, redistribution, and social protection spending, could mitigate the distributional consequences of the current COVID-19 pandemic.[6] In addition to providing evidence for the mitigating role of fiscal support, Aguirre and Hannan (2021) find that countries with strong initial conditions, defined as low informality, high family benefit and high health expenditure per capita, experience lower pandemic-induced inequality.

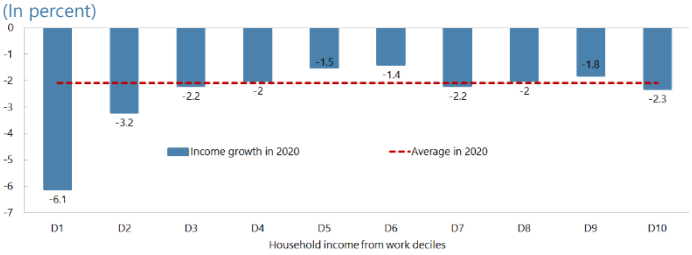
5. **The impact of the COVID-19 pandemic on the labor market varied across groups and sectors (Figure 2 and 3).**

[5] Similarly, Galletta and Giommoni (2020) provide evidence for the effect of the 1918 influenza in Italy, showing that municipalities most exposed to the disease have experienced a persistent increase in inequality as a consequence of the reduction in the share of income generated by the poorer side of the population, while top earners do not seem to be affected.

[6] See also, for instance, Almeida et al. (2021) showing a similar result for EU households.

6. **Singapore's inequality decreased in the first year of the pandemic on the back of the authorities' policy support to the most vulnerable segments of the population.** While the Gini coefficient remained unchanged from 2019 at 0.45 in 2020, after accounting for government transfers and taxes, it decreased to 0.38 signaling a role for government transfers targeting the low-income households. Household income declined across all groups but disproportionately more in the lower part of the income distribution. For instance, while income contracted by about 6 percent in the first decile (well above the average of 2.1 percent), it declined at top tenth decile by only 2.3 percent. The authorities have therefore deployed transfers to households and individuals amounting an average of SGD 2,200 per household member as part of COVID-19 schemes in 2020, with larger support toward the bottom of the income distribution that suffered more income loss.[7]

Singapore: Real Growth in Income per Member Across Deciles, 2020
(In percent)

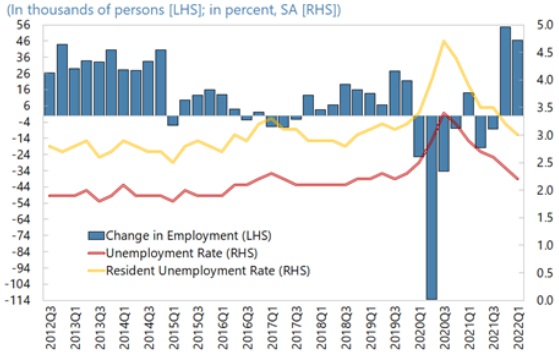


Sources: Singapore Department of Statistics

Figure 2. Singapore: Unemployment Across Groups During the Pandemic in Singapore

After a peak in 2020Q3 overall unemployment rate has decreased as the economy recovers.

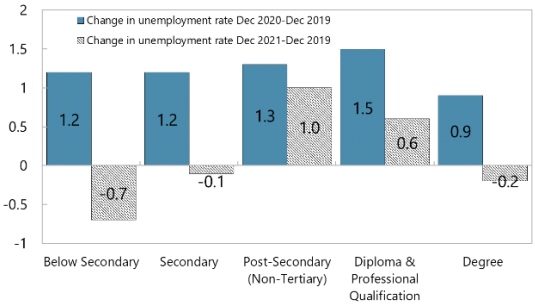
Singapore: Employment and Unemployment
(In thousands of persons [LHS]; in percent, SA [RHS])



Sources: Singapore Ministry of Manpower and CEIC Data.

But unemployment remains above pre-pandemic level especially for intermediate levels of education (non-tertiary post-secondary and diploma & professional qualification).

Singapore: Change in Resident Unemployment Rate Compared to Pre-Pandemic Level
(In percentage point)



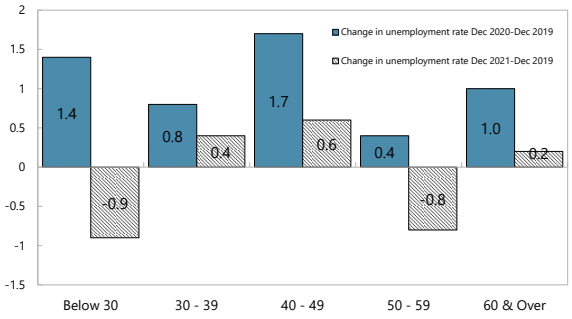
Sources: Singapore Ministry of Manpower and IMF Staff calculations.

[7] See Ministry of Finance report here. This average transfer amount was larger than the average monthly household income per member in the 4th decile in 2020 estimated at SGD 2085. Households in the 1st and 2nd quintiles received more support compared to those in the higher income quintiles.

Figure 2. Singapore: Unemployment Across Groups During the Pandemic in Singapore (Concluded)

Youth unemployment (below 30) rose at the beginning of the pandemic but has decreased below pre-pandemic level while unemployment remains high and above pre-pandemic level for other age groups, except for the 50-59 age group.

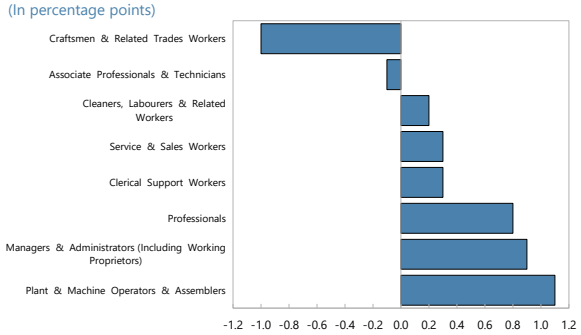
Singapore: Change in Resident Unemployment Rate Compared to Pre-Pandemic Level by Age Groups
(In percentage point)



Sources: Singapore Ministry of Manpower and IMF Staff calculations.

Unemployment remained particularly high above pre-pandemic level for professions such as plant, machine operators and assemblers but also managers and administrators in June 2021.

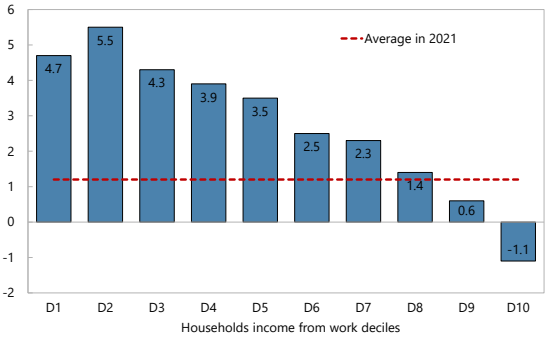
Singapore: Change in Resident Unemployment Rate by Profession Compared to Pre-Pandemic Level 2021-2019 (June)
(In percentage points)



Sources: Singapore Ministry of Manpower, and IMF Staff calculations.

7. **Inequality continued to decrease in 2021, as income recovers strongly for the bottom of the distribution, but the unwinding of the support led to an increase in the Gini after taxes and transfers compared to 2020, although remaining below the pre-pandemic level.** Labor market income dynamics were more favorable to the bottom of the distribution which experienced a strong rebound with income from work increasing by 4.7 percent in the first decile (compared to a decline in the top decile by about 1 percent).[8] This progress which translates into a lower Gini coefficient before taxes and transfers has been countered by an increase of inequality after transfers and taxes albeit remaining slightly below pre-pandemic level (see Figure 1) owing to the unwinding of the one-off pandemic-related support.

Singapore: Real Growth in Income per Member Across Deciles, 2021
(In percent)



Sources: Singapore Department of Statistics.

8. **Labor market schemes were instrumental in reducing income inequality before taxes and transfers in 2021.** In Singapore, labor market policies are designed to target specific vulnerabilities facing different segments of the workforce.[9] The high skill segment which comprises PMETs tend to take more time to find a job compared to non-PMETs pre-pandemic, suggesting that they are more affected than non-PMETs when being retrenched, with skills mismatch challenge

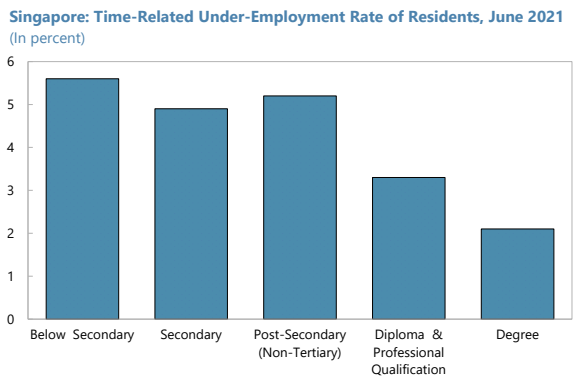
[8] Income growth in 2021 more than compensate for the income loss in most of lower part of the distribution except in the bottom 10 percent group.

[9] See Appendix VIII of Singapore IMF Country Report No. 19/233

being a typical cause. The non-PMETs challenges on the other hand relate more to lower wages compared to PMETs.[10] The authorities deployed therefore a comprehensive set of labor market policies combining wage and income support (e.g., the Jobs Support Scheme, Enhanced Wage Credit Scheme, COVID-19 Support Grant, COVID-19 Recovery Grant, Self-Employed Person (SEP) Income Relief Scheme, Temporary Relief Fund, Workfare Special Payment) with reskilling, employment and training programs (e.g., SEP Training Support Scheme and SGUnited Jobs and Skills Package, which included the Jobs Growth Incentive to boost local hiring).[11] The policy response of the authorities accounted for the different challenges of the labor market segments and was consistently targeted.

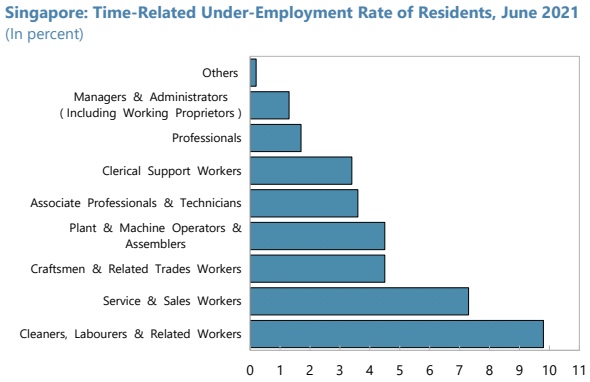
Figure 3. Singapore: Time-Related Under-Employment Across Groups During the Pandemic in Singapore

In June 2021, time-related under-employment remained above overall time-related under-employment rate for individuals with a level of education below diploma and professional qualification…



Sources: Comprehensive Labour Force Survey, Manpower Research & Statistics Department, Singapore Ministry of Manpower.

…as well as for non-PMET[1] occupation groups such as service & sales workers and, cleaners, laborers & related workers.



Sources: Comprehensive Labour Force Survey, Manpower Research & Statistics Department, Singapore Ministry of Manpower.

[1] PMET refers to Professionals, Managers, Executives and Technicians.

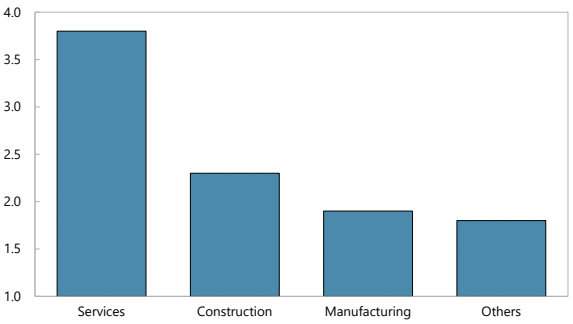
[10] Median PMETs gross monthly salary was SGD 6,318 compared to SGD 2,535 for non-PMETs (Singapore Ministry of Manpower) in 2021.

[11] See Selected Issues Papers IMF Country Report No. 21/159, Labor Market Policy Response to the COVID-19 Crisis.

Figure 3. Singapore: Time-Related Under-Employment Across Groups During the Pandemic in Singapore (Concluded)

The services sector recorded the highest time-related under-employment rate…

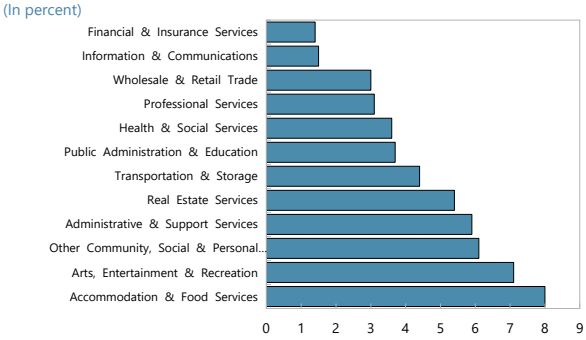
Singapore: Time-Related Under-Employment Rate of Residents, June 2021
(In percent)



Sources: Comprehensive Labour Force Survey, Manpower Research & Statistics Department, Singapore Ministry of Manpower.

… in particular Arts, Entertainment & Recreation, and Accommodation & Food Services.

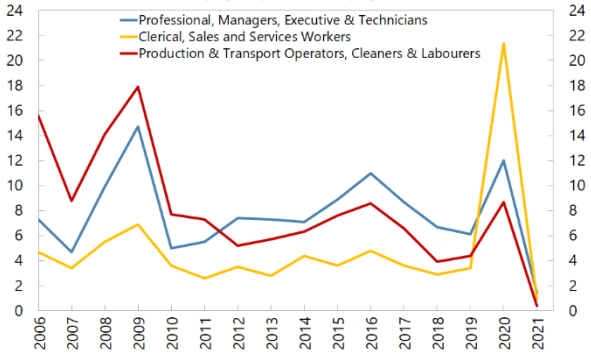
Singapore: Service Sector Time-Related Under-Employment Rate of Residents, June 2021
(In percent)



Sources: Sources: Comprehensive Labour Force Survey, Manpower Research & Statistics Department, Singapore Ministry of Manpower.

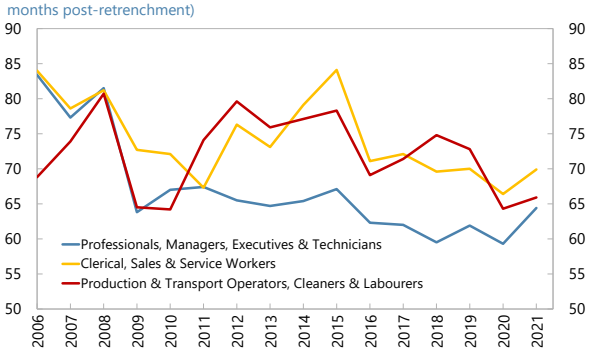
Figure 4. Singapore: Occupational Groups of the Labor Market in Singapore

Singapore: Incidence of retrenchment
(In number of retrenched employees per 1,000 employees)



Sources: Singapore Ministry of Manpower.

Singapore: Re-entry into Employment
(In proportion of retrenched residents in employment in the reference year, six months post-retrenchment)

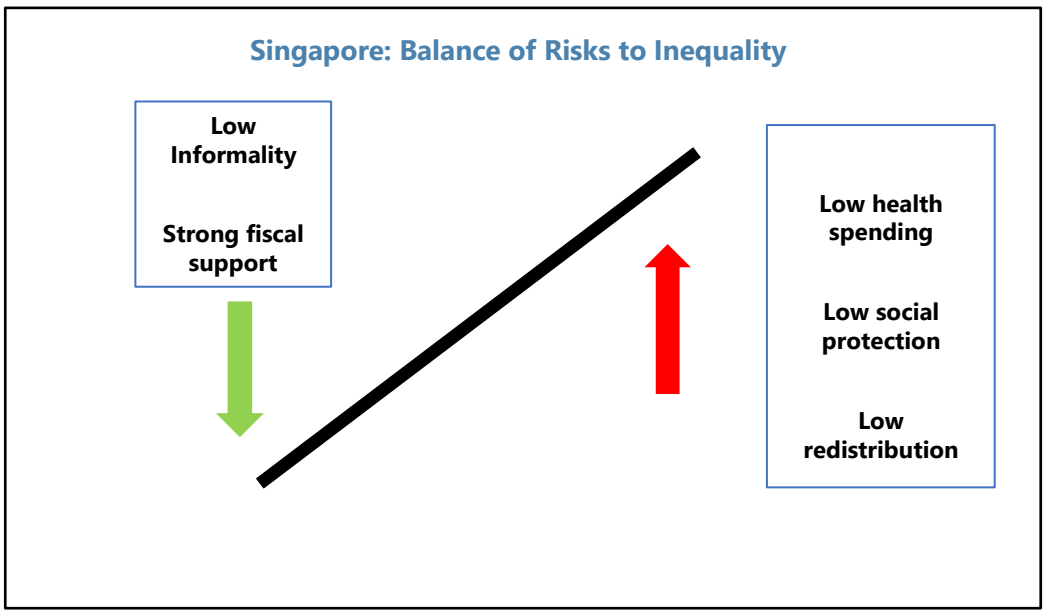


Sources: Singapore Ministry of Manpower.

9. **Given the structural pre-pandemic initial conditions of Singapore, going forward risks to inequality will require a proactive policy response.** In 2003 and 2009, Singapore went through a SARS and an H1N1 pandemics respectively.[12] While inequality slightly increased in 2003 during the SARS pandemic, it did not change during the 2009 H1N1 event (See Figure 1). As previously discussed, recent evidence (Furceri et al., 2021b and, Aguirre and Hannan, 2021) show that strong fiscal support and strong initial conditions (defined as low informality, high social protection spending, high health expenditure and high redistribution) contribute to mitigating pandemic-induced inequality. Health spending and social protection spending in Singapore were among the

[12] These were short-lived pandemics with significantly less impact than the current COVID-19 pandemic. There were 238 total cases with 33 death counts in the 2003 SARS while the numbers are respectively 415,000 and at least 18 for the H1N1 in 2009 (Singapore's authorities). COVID-19 cases reached 1,174,390 with 1,322 deaths as of April 22, 2022 (source: Ministry of Health).

lowest in G20 advanced economies peers based on the most recent pre-pandemic data (Figure 5).[13] Absolute redistribution[14], measured as the difference between the market Gini and the net Gini, was also among the lowest compared to peers. However, the shadow economy was among the lowest compared to peers and the large fiscal support, estimated at 20 percent of GDP in 2020 (see Appendix I) are mitigating factors. As evidenced by the increase in the Gini index after taxes and transfers in 2021, the number of structural factors that could contribute to further increases in inequality is slightly higher than the mitigating factors (fiscal support and low informality). While it is difficult to anticipate with accuracy whether the large fiscal support and the low informality may outweigh the impact of the other structural factors, a proactive approach to enhancing inclusive growth consistent with the FY 2022 Budget is welcome given the recent rise in inequality in Singapore.

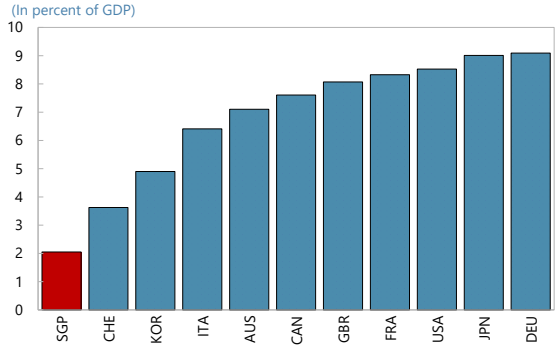


[13] Note however that while public health expenditure is low in Singapore this could be mitigated by the high efficiency in its healthcare system.

[14] This is a proxy for redistribution widely used in the literature (See for instance Solt, 2009, 2016, Berg et al., 2018 and, Furceri et al., 2021b). This definition of redistribution does not attempt to capture all the effects of government on the income distribution but is a good proxy for cross-country comparison consistently with the literature. The government influences the distribution of income in many ways including setting public wages, influencing relative prices through tariffs and subsidies, establishing minimum wages and other labor market policies, and providing in-kind goods and services such as health care and education that may not be fully captured here.

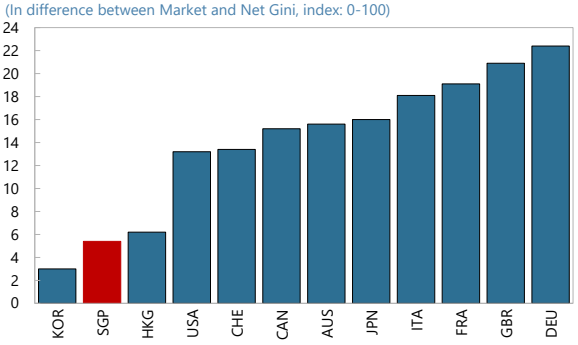
Figure 5. Singapore: Proxies for Pre-Pandemic Initial Conditions

Singapore: General Government Health Expenditure, 2019
(In percent of GDP)



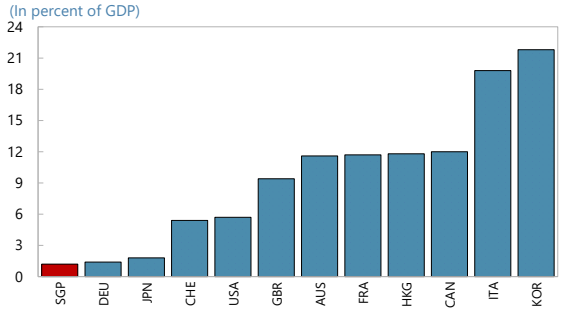
Sources: World Bank, *World Development Indicators.*

Redistribution: Singapore and Comparator Countries
(In difference between Market and Net Gini, index: 0-100)



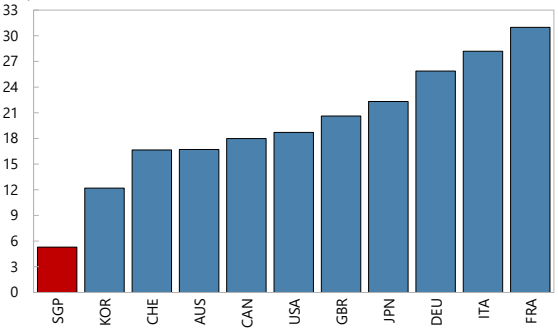
Notes: 2019 or latest availabe; AUS, KOR, JPN, and CHE as of 2018; HKG as of 2016.
Sources: Standardized World Income Inequality Database & IMF Staff Calculations.

Size of Shadow Economy: Singapore and Comparator Countries
(In percent of GDP)



Source: Medina, Leandro, and Friedriech Schneider. 2020. 'Shedding Light on the Shadow Economy: A Global Database and the Interaction with the Official One." *World Economies* 21:25-82.

Singapore: Social Protection Spending, 2019 or Latest
(In percent of GDP)



Sources: OECD Statistics and Asian Development Bank.

C. Conclusions

10. **Singapore's bold and comprehensive labor market policies have proved effective during the COVID-19 pandemic.** In particular, the programs have helped to keep the unemployment rate low and have provided appropriate support to most affected sectors and lower income people. The decrease in the Gini coefficient before taxes and transfers suggest that labor market policies have been progressive.

11. **Although inequality (after taxes and transfers) has been on a declining trend since 2007, there is room for more structural reforms.** As evidenced by the decrease in the Gini coefficient before taxes and transfers the recovery and the labor market developments had been progressive; with income rebounding strongly especially in the lower part of the income distribution. However, this improvement in labor market outcomes was countered by the temporary rise of inequality after taxes and transfers. For certain groups of workers, unemployment remains significantly above pre-pandemic level, while time-related under-employment was higher than the overall level in June 2021, which will affect their income and well-being. Continued targeting of these following groups with relatively weak labor market outcomes compared to others could also mitigate further distributional consequences of the pandemic:

- *Unemployment* – Workers with an intermediate level of education (post-secondary non-tertiary and diploma & professional qualification), PMETs (in particular, professionals, managers & administrators and, plant & machine operators & assemblers).

- *Time-related under-employment* – Workers with a non-tertiary education, workers in the services sector (in particular, accommodation & food services, art, entertainment & recreation) and non-PMETs.

12. **Furthermore, continued structural reforms to the taxes and transfer schemes toward more progressivity could help mitigate risks to inequality over the medium term.** Boosting inclusive policies could also help facilitate external rebalancing, including given the marginal propensity to consume of lower income households. This would be important given the recent rise in inequality after taxes and transfers, and the usually delayed and persistent effect of pandemics on inequality. The recent policy announcements in 2022 budget including the expansion of the social safety net system through the extension of the progressive wage model to the retail, food services and waste management sectors, and the transitional support for wage increase of lower-income workers through the Progressive Wage Credit Scheme (PWCS) are welcome. The enhancement of the workfare income supplement, and the enhanced progressivity of the income tax system would also help mitigate the distributional effects of the pandemics, and thereby foster an inclusive recovery.

References

Almeida, V., Barrios, S., Christl, M., De Poli, S., Tumino, A., and van der Wielen, W. (2021). "The impact of COVID-19 on households´ income in the EU". *The Journal of Economic Inequality*, 1-19.

Aguirre, J. P. C., and Hannan, S. A. (2021). "Recoveries After Pandemics: The Role of Policies and Structural Features". *IMF Working Papers*, *WP/21/181*

Berg, A., Ostry, J. D., Tsangarides, C. G., and Yakhshilikov, Y. (2018). Redistribution, inequality, and growth: new evidence. *Journal of Economic Growth*, *23*(3), 259-305.

Bonacini, L., Gallo, G., and Scicchitano, S. (2021). "Working from home and income inequality: risks of a 'new normal'with COVID-19". *Journal of population economics*, *34*(1), 303-360.

Dosi, G., Fanti, L., and Virgillito, M. E. (2020). "Unequal societies in usual times, unjust societies in pandemic ones". *Journal of Industrial and Business Economics*, *47*(3), 371-389.

Emmerling, J., Furceri, D., Monteiro, F. L., Pizzuto, P., and Tavoni, M. (2021). "Will the Economic Impact of COVID-19 Persist? Prognosis from 21st Century Pandemics". *IMF Working Papers*, *2021*(119).

Furceri, D., Loungani, P., Ostry, J. D., and Pizzuto, P. (2021a). "Will COVID-19 Have Long-Lasting Effects on Inequality? Evidence from Past Pandemics". IMF Working Paper WP/21/127

Furceri, D., Loungani, P., Ostry, J. D., and Pizzuto, P. (2021b). "The rise in inequality after pandemics: can fiscal support play a mitigating role?". *Industrial and Corporate Change*, *30*(2), 445-457.

Galletta, S., and Giommoni, T. (2020). "The effect of the 1918 influenza pandemic on income inequality: Evidence from Italy". *Available at SSRN 3634793*.

Kugler, M. D., Viollaz, M., Vasconcellos Archer Duque, D., Gaddis, I., Newhouse, D. L., Palacios-Lopez, A., and Weber, M. (2021). "*How Did the COVID-19 Crisis Affect Different Types of Workers in the Developing World?*" (No. 9703). The World Bank.

Schmitt-Grohé, S., Teoh, K., and Uribe, M. (2020). "*COVID-19: testing inequality in New York City* (No. w27019). National Bureau of Economic Research.

Solt, F. (2009). Standardizing the world income inequality database. *Social Science Quarterly*, *90*(2), 231-242.

Solt, F. (2016). The standardized world income inequality database. *Social science quarterly*, *97*(5), 1267-1281.

Wah, T. M. (2012). Singapore's rising income inequality and a strategy to address it. *ASEAN Economic Bulletin*, 128-145.

Appendix VI. Singapore's Monetary Policy Normalization

Singapore's exchange-rate based monetary policy framework has served the country well in delivering price stability. Against the backdrop of growing inflation risks amid heightened global uncertainty, this appendix explores the impact on Singapore's economic recovery of the ongoing normalization of monetary policy. Staff analysis shows that (i) the Phillips curve has flattened in Singapore; (ii) while the monetary policy stance based on the level of the S$NEER was broadly neutral at Q1 2022, it has now become tighter with the substantial April 2022 tightening and (ii) although the risks to the recovery from further tightening the monetary policy stance by appreciating the S$NEER were likely limited pre-Ukraine war, the confluence of multiple global shocks, amid economic fragmentation risks, could together make a material shift in the magnitude of the sacrifice ratio going forward, thus warranting a more nimble and carefully calibrated policy stance.

A. Singapore's Monetary Policy Framework

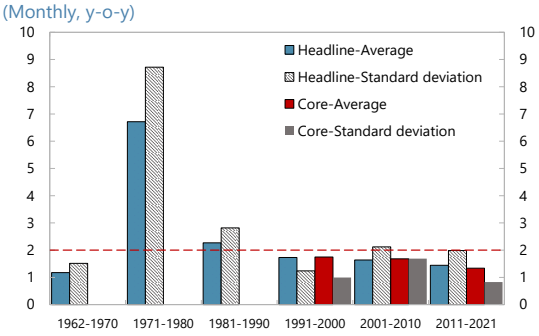
1. **MAS operates a basket, band, and crawl (BBC) exchange rate-based monetary policy framework in which the S$NEER is managed against an undisclosed basket of currencies.** MAS does not have an explicit inflation target but sees a core inflation rate of just under 2 percent, which is close to its historical mean, as consistent with overall price stability in the economy. MAS' monetary policy decisions are typically characterized by shifts in the slope of the S$NEER policy band (i.e. the rate of crawl) and only occasionally by changes in the level of the mid-point (for instance if the growth/inflation outlook changes abruptly and rapidly such as at the time of the GFC) or the width of the band (in face of a significant increase in the level of uncertainty, such as in 2001 and 2010). In its monetary policy communications, the MAS makes qualitative clarification on the parameters of the BBC framework and does not disclose the numerical values of the BBC parameters and/or their changes. The S$NEER has followed a trend appreciation over the last decade.

2. **As a small and highly open economy, Singapore's framework sees the exchange rate as having a much stronger influence on inflation than the interest rate.**[1] The exchange rate is seen to affect prices through two main channels: the 'imported inflation' channel and the 'derived demand' channel. Under the 'imported inflation' channel, an appreciation of the Singapore dollar against currencies of major trading partners reduces the S$ prices of imported goods and services, which subsequently dampens consumer prices. The 'derived demand' channel operates when nominal exchange rate changes affect firms' demand for domestic factors of production and hence the output gap. Under a positive output gap, an appreciation of the S$—in the face of short-run price and cost rigidities— will dampen aggregate demand, leading firms to cut back on domestic production and hold back on investment and hiring, which narrows the positive output gap and reduces price pressures.

[1] Since 2010, average gross exports and imports of goods and services are close to 350 percent of GDP.

3. **MAS monetary policy framework can best be characterized by a forward-looking Taylor Rule-like policy reaction function with the S$NEER, instead of the interest rate, as the short-term policy instrument.** Estimates of the monetary policy reaction equation in Singapore using quarterly data spanning over the last 3 decades consistently find that the MAS puts a higher weight on expected inflation than the output gap, as suggested by the statistical significance and the relative size of the coefficient for inflation vis-à-vis the coefficient for output.[2] The choice of the exchange rate as the main instrument of monetary policy implies that domestic interest rates and money supply are endogenously determined by foreign interest rates and investor expectations of the future movement of the Singapore dollar. Under this framework, inflation level and volatility declined and remained contained over previous decades.

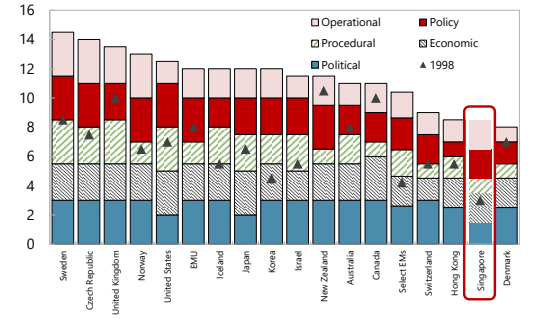
Singapore: Headline and Core Inflation Over Time
(Monthly, y-o-y)



Sources: Singapore Department of Statistics.

4. **The notable increase in the transparency of MAS communication over the last decades is welcome, but more can be done, taking into account potential associated costs.** MAS registered a significant increase in the Dincer, Eichengreen and Geraats monetary policy transparency index.[3] However, compared to its AE peers, there is room for increased transparency particularly on the procedural and political transparency components of the overall index. That being said, and though the benefits of higher transparency have been established in a growing empirical literature, the MAS' cautious approach in irreversibly enhancing its communication approach reflect concerns about (i) too much information crowding out private sector beliefs, and (ii) policy expectations brought about by communication unduly constraining policy action.[4]

Singapore: Monetary Policy Transparency Index, 2019
(Min=0, Max=15)



Sources: Dincer/Eichengreen/Geraats Central Bank Transparency Data for 1998-2019.

B. Singapore's Monetary Policy Stance

5. **Analysis of the neutral rate has traditionally been one way to assess the monetary stance.** With inflation risks are broadening, and household's precautionary savings level remains

[2] See CR 18/245 (Appendix V), and MAS Macroeconomic Review October 2021 Special Feature A: 50 Years of Inflation Experience in Singapore.

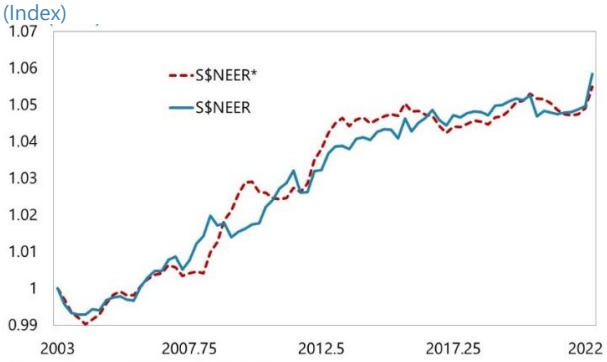
[3] See Dincer, Eichengreen and Geraats (2022).

[4] See Robinson (2019).

elevated, Singapore's current real risk-free rate is estimated to be lower than the equilibrium interest that is consistent with a zero-output gap and stable inflation (Figure 1).[5] This equilibrium information contained in the neutral rate can be exploited to derive a policy stance for the current level of the exchange rate. Following Clarida (2020), a structural equation is fit against the S$NEER, which is decomposed into the sum of a PPP component, a business cycle (x) component, and a neutral rate (r^*) component. The neutral interest rate is the rate consistent with internal equilibrium: a zero-output gap and stable inflation. The exchange rate today will reflect the entire expected time path of Singapore's neutral real interest rate, but in equilibrium does not adjust to the global component in the neutral policy rate. If today the neutral real rate in Singapore is expected to lie below the neutral real rate abroad, the nominal exchange rate will weaken relative to domestic prices given the state of the business cycle (x). This is in line with MAS' approach, which emphasizes interest rates (domestic and global) in their calibration of monetary policy as part of their general equilibrium approach to monetary policy. A long run cointegration test using Singapore data suggests its fits the model well.

Singapore S$NEER and S$NEER*

(Index)



Source: Haver and IMF staff calculations.
Note: The S$NEER* is based on Clarida, R. (2020).

$$e = p + x + E_t \sum_{i=0}^{\infty} (r^*_{t+i} - r^{F*}_{t+i}) \quad (1)$$

6. **While the monetary policy stance as of Q1 2022, based on the current estimated domestic and global neutral rate NEER, was broadly neutral, it has become tighter since the April 2022 substantial tightening by the MAS.** The S$NEER is around the fundamental value implied by equilibrium, interest rates, and the domestic price level and the output gap. This stance however captures the initial impact of only two out of the three policy tightening moves since the start of normalization in October 2021. Should the more aggressive tightening of April 2022 be considered, the stance would likely be tighter than currently estimated. Given the prevalence of lags in the transmission of monetary policy, particularly in the Singapore context, the continued appreciation of the S$NEER within the steeper-set path will continue to work on dampening inflationary pressures. With upside risks to inflation and given the MAS' focus on medium-term price stability, a key policy question going forward is the potential risk to Singapore's recovery from further monetary policy normalization. This is explored in the subsequent section.

Risks to Singapore's Recovery from Tightening Monetary Policy

7. **Risks to Singapore's ongoing recovery from continued normalization in monetary policy appear small.** This is determined by a producing a set of conditional forecasts predicated on

[5] See Holston, K., T. Laubach and J. C. Williams (2017).

the S$NEER appreciating by around 6 percent over the next 3 years.[6] Essentially, we condition the forecasts of other variables on a path of the exchange rate that further tightens the monetary policy stance. The policy scenario and the resultant macro forecasts are produced using Bayesian VAR models containing real GDP, inflation, inflation expectations, employment, the exchange rate, and the interest rate. This approach follows similar VAR models set out in Antolin-Diaz et al. (2021) that simulated various monetary policy scenarios on a set of macro variables. To negate potential Lucas critique concerns, which assumes that the policy coefficients in the model will change when there is a change in policy, the model is estimated using the Kalman filter/smoother implementation of Banbura, Giannone, and Reichlin (2015).

8. **In the baseline economic activity and inflation are projected to moderate to their long-run steady-state values.** However, a forecast of real GDP conditional on a phased appreciation path in the exchange rate suggests that the path of real GDP growth does not fundamentally deviate from the baseline. These dynamics also hold for inflation, and their expectations and employment growth (Figures 2 and 3). The findings are consistent with Singapore's historically low sacrifice ratio—the cost to growth from dis-inflating is small. This is reflected in Singapore's Phillips curve flattening (Figure 4). This implies that MAS has greater freedom in setting monetary policy to preserve price stability, without serious growth risks. The time-varying Phillips curve estimates also suggest that the pass-through of exchange rate changes on inflation has progressively waned. However, recent supply bottlenecks resulting from the conflict in Ukraine and/or from the China COVID-19 lockdown, could potentially increase the size of the sacrifice ratio by steepening the slope of the Phillips curve and would be consistent with a lower growth-higher inflation environment.

Policy Implications

9. **Going forward there are factors that will likely complicate the calibration of monetary policy.** The confluence of multiple global shocks including the ongoing slowdown in China, an important trading partner for Singapore, amid global economic fragmentation risks, could together make a material shift in the magnitude of the sacrifice ratio going forward, thus warranting a more nimble and carefully calibrated monetary policy stance. In addition:

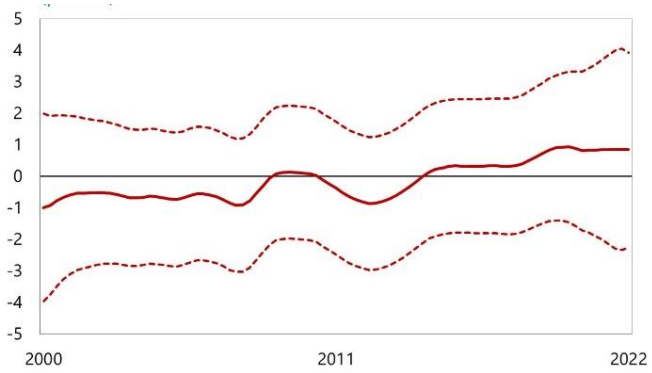
- *Sustained low for long interest rate environment***:** The neutral rate in Singapore has been low, and is likely to remain low because of a confluence of structural factors: (*i*) large savings surplus reflecting the current account; (*ii*) aging; (*iii*) some risk aversion (reflected in Singapore's equity market constantly trading at a discount) and; (*iv*) growing economic leverage. Partly for these reasons, the risk-free market interest rate is likely to remain low for the foreseeable future, reflected in the pricing of the long-term forward rate (Figure 5). Risks to financial stability may grow; persistently low rates help sustain elevated house prices and encourage further debt accumulation. It has also been shown that a persistently low interest rate environment generally tends to harm productivity, increase market power of fewer firms, and give rise to other

[6] This is an illustrative monetary policy scenario that embeds different assumptions compared to the baseline projections in the macro framework.

challenges.[7] This has implications for how the exchange rate is calibrated going forward. It also reinforces the importance of macroprudential policies to control the growing buildup of financial imbalances.[8]

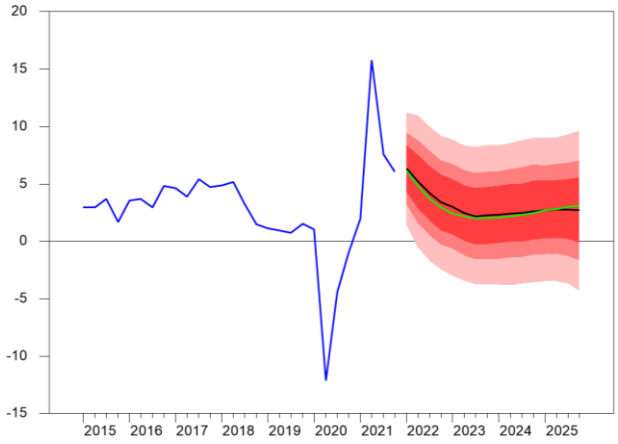
- *Larger external shocks.* The size of import price shocks has grown in recent years. In the presence of a managed exchange rate this implies greater real sector volatility (see Figures 5-7). Over the years, MAS has shown a track record of handling such acute policy tradeoffs in a nimble and agile fashion within its monetary policy making regime.

Figure 1. Singapore: Neutral Real Interest Rate
(Percent)



Source: Haver and IMF staff calculations.
Note: See S. Rafiq (2021), 'What's in Korea's (R)-Stars', IMF Working Paper No. 21/93.

Figure 2. Singapore: Monetary Policy Simulation and Real GDP Growth Forecast



[7] See S. Rafiq (2021).

[8] Reis (2022) shows that when accounting for the return on capital the neutral rate may not be as low as is typically estimated.

Figure 3. Singapore: Monetary Policy Simulation and Macro Forecasts

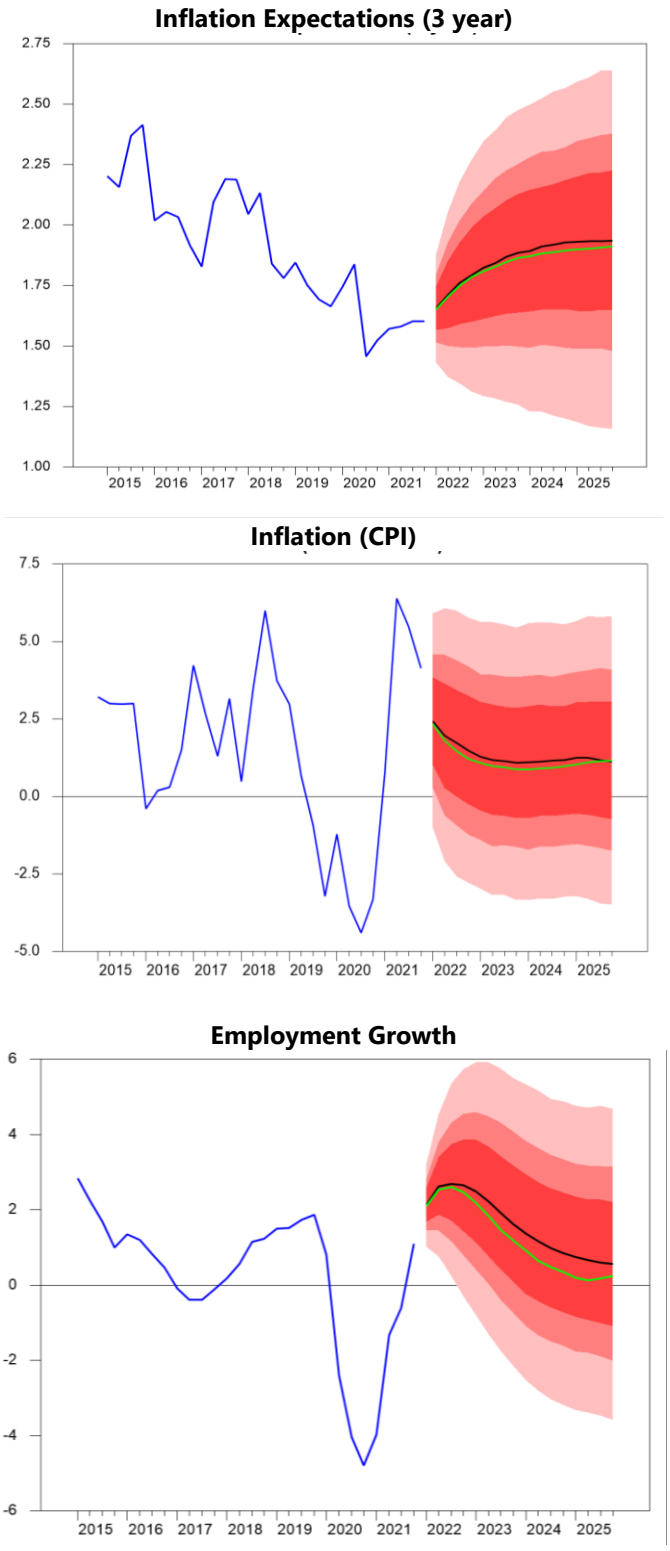


Figure 4. Singapore: Phillips Curve
(Coefficient values)

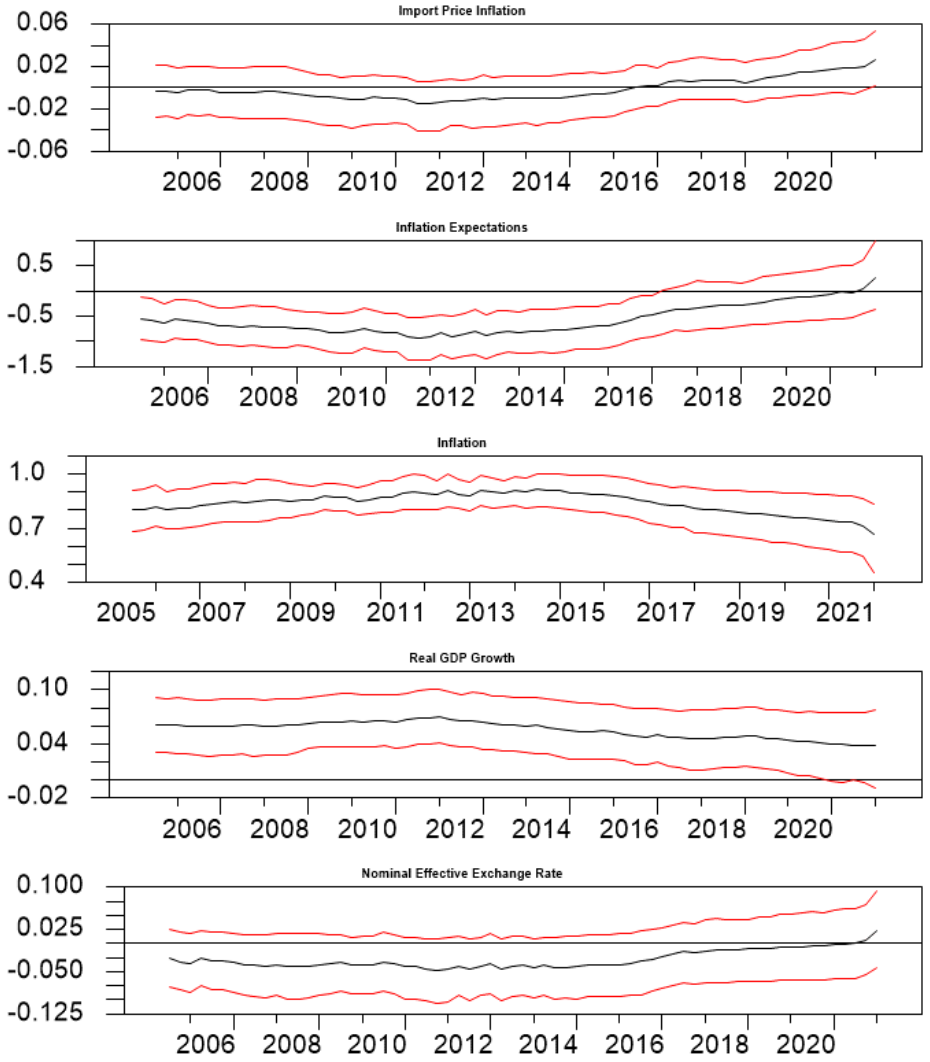


Figure 5. Singapore: Long-Term Rate 5 Years Forward
(Percent)

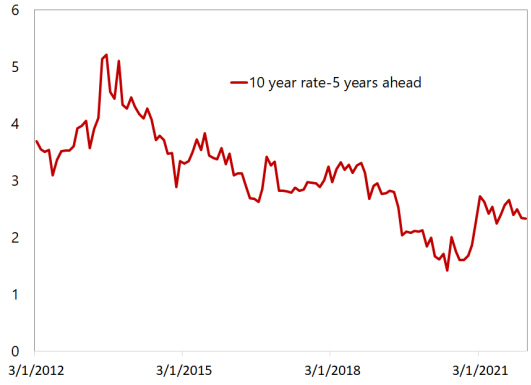


Figure 6. Singapore: Size of Import Price Shocks
(St. Dev)

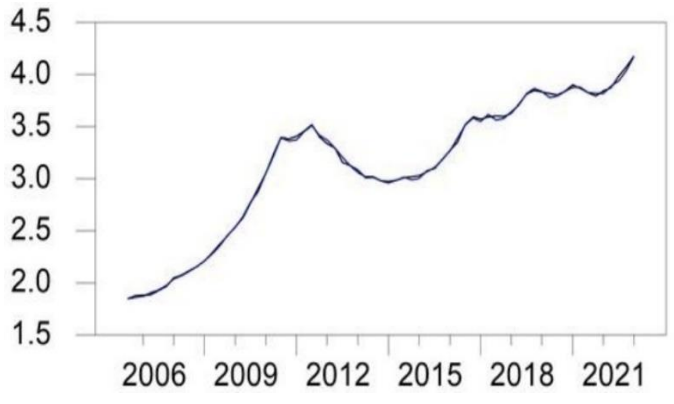
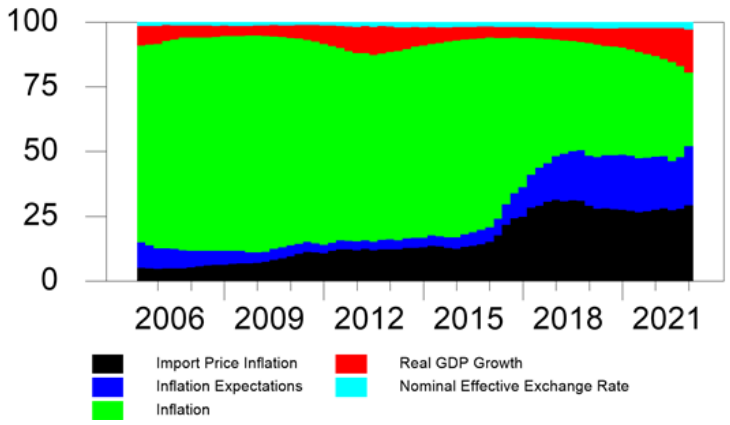


Figure 7. Singapore Inflation Decomposition
(Percent)



References

Antolin-Diaz, J, I. Petrella and J. F. Rubio-Ramirez (2021), "Structural Scenario Analysis with SVARs", Journal of Monetary Economics, 117: 798-815.

Banbura, M., Giannone, D., and Reichlin, L., (2015), "Conditional Forecasts and Scenario Analysis with Vector Autoregressions for Large Cross-Sections", International Journal of Forecasting, 31(3): 739 – 756.

Clarida, R. (2020), "The Global Factor in Neutral Policy Rates: Some Implications for Exchange Rates, Monetary Policy, and Policy Coordination Implications", NBER Working Paper No. 23562.

Dincer, N., B. Eichengreen and P. Geraats (2022). "Trends in Monetary Policy Transparency: Further Updates," International Journal of Central Banking, vol. 18(1), pages 331-348, March.

Holston, K., T. Laubach and J. C. Williams (2017), "Measuring the Natural Rate of Interest: International Trends and Determinants", Journal of International Economics, 108(1): 59-75.

IMF, 2018 Singapore Article IV, Appendix V. "Estimating a Monetary Policy Rule".

Lucas, R. E. (1976), "Econometric Policy Evaluation: A Critique," Carnegie-Rochester Conference Series on Public Policy 1, 19-46.

MAS Macroeconomic Review October 2021, Special Feature A: "50 Years of Inflation Experience in Singapore."

Robinson, E., 2019, "Central Bank Communications - Evolution in Theory and Practice, "Opening remarks, at the IMF High-Level Peer-to-Peer Forum on "Central Bank Communications in ASEAN-5 Countries: From Principles to Practice", Singapore, 4 December 2019, https://www.bis.org/review/r200107b.pdf

Rafiq, S. (2021), "What in Korea' (R)-Starts", IMF Working Paper No. 21/93.

Reis (2022), 'Has Monetary Policy Cared too much about a Poor Measure of R*', mimeo.

INTERNATIONAL MONETARY FUND

SINGAPORE

STAFF REPORT FOR THE 2022 ARTICLE IV CONSULTATION—INFORMATIONAL ANNEX

June 27, 2022

Prepared By | Asia and Pacific Department

CONTENTS

FUND RELATIONS

(As of May 31, 2022)

Membership Status: Joined August 3, 1966; Article VIII.

General Resources Account

	SDR Millions	Percent of Quota
Quota	3,891.90	100.00
Fund holdings of currency (exchange rate)	2,808.21	72.16
Reserve tranche position	1,087.11	27.93
Lending to the Fund:		
New Arrangements to Borrow	8.66	

SDR Department

	SDR Millions	Percent of Allocation
Net cumulative allocation	4,474.42	100.00
Holdings	4,559.20	101.89

Outstanding Purchases and Loans: None.

Financial Arrangements: None.

Projected Payments to the Fund: None.

Exchange Arrangement

Singapore's de jure exchange rate arrangement is "other managed." The de facto exchange rate arrangement is classified as "stabilized." The Monetary Authority of Singapore (MAS) monitors the value of the exchange rate against an undisclosed basket of currencies and intervenes in the market to maintain this value within an undisclosed target band. The U.S. dollar is the intervention currency. Singapore has accepted the obligations under Article VIII, Sections 2(a), 3, and 4 and maintains an exchange system free of multiple currency practices and restrictions on the making of payments and transfers for current international transactions, except for restrictions maintained solely for the preservation of national or international security, which have been notified to the Fund in accordance with the procedures set forth in Executive Board decision 144-(52/51). Singapore maintains restrictions on Singapore dollar credit facilities to, and bond and equity issuance by, nonresident financial institutions. Singapore dollar proceeds obtained by nonresident financial entities (such as banks, merchant banks, finance companies, and hedge funds) from loans exceeding S$5 million, or any amount for equity listings or bond issuance to finance activities outside Singapore, must be swapped or converted into foreign currency upon draw down. Financial institutions are prohibited from extending Singapore dollar credit facilities in excess of S$5 million to

nonresident financial entities if there is reason to believe that the Singapore dollar proceeds may be used for Singapore dollar currency speculation.

Article IV Consultation

Singapore is on the 12-month consultation cycle. The 2021 Article IV consultation discussions were held virtually during April 27–May 11, 2021, and the Executive Board concluded the consultation on July 9, 2021 (IMF Country Report No. 21/156).

FSAP Participation

The FSAP Update involved two missions: October 29–November 14, 2018, and February 13–27, 2019. The findings were presented in the Financial System Sustainability Assessment (IMF Country Report No. 13/325).

Technical Assistance: None.

Resident Representative: Ms. Natalia Novikova has been posted in Singapore since October 2020.

STATISTICAL ISSUES

I. Assessment of Data Adequacy for Surveillance	
General: Data provision is broadly adequate for surveillance. While the authorities have continued to expand the range of publicly available data.	
National Accounts: The Singapore Department of Statistics has recently made improvements to its methodology. In May 2019, it benchmarked the GDP reference year from 2010 to 2015, moved estimation from a five-yearly fixed base approach to an annually reweighted chained volume measurement, and updated methods of estimating insurance output and goods sent to/received from abroad for processing, in line with principles of the 2008 System of National Accounts. **Price Statistics**: In 2020 the CPI was updated to the index reference period of 2019, using expenditure weights from the Household Expenditure Survey conducted between October 2017 and September 2018. The updated CPI includes indexes for 91 detailed consumption categories, compared to the 8 detailed categories that were previously available. Export and import price indexes and PPIs for industrial activities are disseminated monthly, while PPIs for services activities are disseminated quarterly.	
Government Finance Statistics: Information on government assets held abroad is neither published nor provided to the Fund. The government publishes annually partial information on the interest and dividends on these assets. Debt service payments on domestic debt made from the extra budgetary Government Securities Fund are published on an annual basis. Data on the financial position of the consolidated public sector are not published.	
Monetary Statistics: The Monetary Authority of Singapore does not report monetary statistics in IMF's standardized report forms, which were introduced in 2004 to collect sectoral balance sheets of the financial corporations broken down by financial instruments, counterparty sector, and currency of denomination of the financial instruments. The Monetary Authority of Singapore reports data on several series and indicators of the Financial Access Survey, including the two indicators (commercial bank branches per 100,000 adults and ATMs per 100,000 adults) adopted by the UN to monitor Target 8.10 of the Sustainable Development Goals.	
Financial Soundness Indicators: Singapore reports 12 core and 7 encouraged Financial Soundness Indicators (FSIs) for Deposit Takers on a quarterly basis as per the Financial Soundness Indicators Compilation Guide. The data as well as the accompanying meta data are available in the IMF's FSI website.	
External Sector Statistics: Balance of Payments and international investment position data are compiled according to the 6th edition of the *Balance of Payments and International Investment Position Manual (BPM6*). Data on Singapore's international investment position is not provided on a disaggregated sectoral basis as suggested by the BPM6. Singapore participates in the IMF's Coordinated Direct Investment Survey reporting data on inward investment. It also participates in the IMF's Coordinated Portfolio Investment Survey reporting the core table (Table 1) only. It also reports the Reserves Data Template to the IMF monthly.	
II. Data Standards and Quality	
A subscriber to the IMF Special Data Dissemination Standard (SDDS) since 2001, Singapore publishes data with the coverage, periodicity, and timeliness prescribed under the SDDS, disseminates advance release calendars, and annually certifies the published metadata. Singapore's latest SDDS Annual Observance Report is available on the Dissemination Standards Bulletin Board.	No data ROSC is available.

Singapore: Table of Common Indicators Required for Surveillance
(As of May 27, 2022)

	Date of Latest Observation	Date Received	Frequency of Data[1]	Frequency of Reporting[1]	Frequency of Publication[1]
Exchange rates	05/24/2022	05/24/2022	D	D	D
International reserve assets and reserve liabilities of the Monetary Authorities[2]	03/2022	04/2022	M	M	M
Reserve/base money	03/2022	05/2022	M	M	M
Broad money	03/2022	04/2022	M	M	M
Central bank balance sheet	04/2022	05/2022	M	M	M
Consolidated balance sheet of the banking system	03/2022	04/2022	M	M	M
Interest rates[3]	03/2022	04/2022	M	M	M
Consumer price index	04/2022	05/23/2022	M	M	M
Revenue, expenditure, balance and composition of financing[4]—general government[5]	2021	5/2022	A	A	A
Revenue, expenditure, balance and composition of financing[4]– central government	04/2022	05/2022	M	M	M
Stocks of central government and central government-guaranteed debt[6]	2022:Q1	5/2022	Q	Q	Q
External current account balance	2022:Q1	5/2022	Q	Q	Q
Exports and imports of goods and services	2022:Q1	5/2022	Q	Q	Q
GDP/GNP	2022:Q1	5/2022	Q	Q	Q
Gross external debt[7]	2021:Q4	3/2022	Q	Q	Q
Net international investment position	2021:Q4	3/2022	Q	Q	Q

[1] Daily (D); weekly (W); monthly (M); quarterly (Q); annually (A); irregular (I); and not available (NA).
[2] Includes reserve assets pledged or otherwise encumbered as well as net derivative positions.
[3] Both market-based and officially determined, including discount rates, money market rates, rates on treasury bills, notes, and bonds.
[4] Foreign and domestic banks, and domestic nonbank financing.
[5] The general government consists of the central government (budgetary funds, extra budgetary funds, and social security funds) and state and local governments.
[6] Including currency and maturity composition.
[7] Official external debt is zero.

Statement by Rosemary Lim, Executive Director for Singapore, and David Ong, Senior Advisor to the Executive Director
July 9, 2021

1 INTRODUCTION

1.1 The Singapore authorities would like to thank the Article IV team for a constructive 2022 Consultation. The authorities welcome the team's support of Singapore's policy responses in the challenging global environment.

2 RECENT ECONOMIC DEVELOPMENTS AND OUTLOOK

2.1 The Singapore economy continued to expand in H1 2022, following the strong 7.6% growth last year. However, growth slowed alongside some softening in external demand. GDP grew by 0.8% on a quarter-on-quarter, seasonally adjusted basis (q-o-q SA) in Q1 2022, moderating from the 2.3% expansion recorded in Q4 2021. The trade-related and modern services clusters, which posted strong outturns in Q4 2021, contracted sequentially in Q1 2022. The performance was uneven in the travel-related cluster, with gains in the air transport and arts, entertainment & recreation (AER) sectors partially offset by a sharp pullback in the accommodation sector. In comparison, the domestic-oriented cluster saw a broad-based expansion. The overall economy has fully recovered from the COVID-19 shock, with Q1 GDP close to 6% above its level in Q4 2019, prior to the onset of COVID-19. GDP growth in Q2 is expected to have slowed further, dampened by the external-facing sectors even as the domestic-oriented and travel-related sectors continued to expand.

2.2 The lifting of most COVID-19 restrictions since end-March will support the travel-related and consumer-facing sectors. In particular, the growth momentum in the air transport sector is projected to accelerate, given strong pent-up demand for overseas travel. The faster-than-anticipated easing of domestic and border restrictions has boosted local and tourism demand and should provide a fillip to growth in the retail trade and food & beverage industries.

2.3 Conversely, most trade-related sectors are expected to grow at a slower pace this year, in view of the more challenging external environment. While the electronics cluster should remain firm in 2022, outturns in the wholesale trade, chemicals and water transport sectors are projected to soften on account of weaker global trade flows. Similarly, prospects have dimmed in the finance & insurance and the information & communications sectors against the backdrop of tightening financial conditions.

2.4 The current assessment is for Singapore's GDP growth in 2022 to come in at the lower half of the 3-5% forecast range. This would still be slightly above the five-year (2015–19) average growth rate of 3.2% prior to the pandemic. With global growth headwinds coming up against tailwinds from the reopening of the Singapore economy, there will be a rebalancing of growth drivers. The domestic-oriented and travel-related sectors together are expected to contribute slightly more than half of the GDP growth in 2022, compared to a fifth in 2021. In comparison, the trade-related and modern services clusters could see their contribution shrink against the backdrop of some slowing in external demand this year.

2.5 Meanwhile, consumer price pressures have broadened and intensified in Singapore on account of demand-pull and cost-push factors. Amid elevated global commodity prices and ongoing global supply frictions, external inflationary pressures remained strong and contributed to a pickup in imported inflation. Domestically, resident wages picked up firmly on the back of tightening labour market conditions while consumer spending rose with the removal of most COVID-19 safe management measures. Core inflation came in higher at 3.4% in April–May,

compared to 2.5% in Q1 2022. Meanwhile, CPI-All Items inflation increased to 5.5% in April–May, from 4.6% in Q1 2022, with private transport and accommodation costs registering steeper increases.

2.6 Amid improving demand in the consumer-facing sectors, a pick-up in the pass-through of accumulating business costs is expected, supporting core inflation significantly above its historical average through this year. MAS Core Inflation is forecast to pick up further in the coming months, before moderating towards the end of the year as some of the external inflationary pressures recede and domestic labour market tightness gradually eases with inflows of non-resident workers. Core inflation is currently expected to come in at 2.5–3.5% in 2022, while headline inflation will increase at a faster pace of 4.5–5.5% as private transport and accommodation inflation are expected to stay firm in the near term.

3 MACROECONOMIC POLICIES

3.1 Singapore's macroeconomic policy mix has been formulated against the backdrop of ongoing uncertainties in the economic environment, to secure price stability and sustained growth. The authorities welcome Staff's broad concurrence with the macroeconomic policy stance.

Monetary Policy

3.2 External and domestic sources of inflation in the Singapore economy have intensified. In October 2021, the Monetary Authority of Singapore (MAS) began to withdraw monetary policy accommodation by adopting a slight positive (appreciating) slope for the Singapore dollar nominal effective exchange rate (S$NEER) policy band. MAS subsequently steepened the slope again in an off-cycle move in January 2022. In April 2022, MAS tightened monetary policy for the third time in six months, by re-centring the mid-point of the S$NEER policy band up to its prevailing level and increasing slightly the band's rate of appreciation, in order to slow the inflation momentum. MAS will continue to monitor developments in the external environment and their impact on the Singapore economy, and is prepared to respond as necessary to ensure medium-term price stability in the economy.

Fiscal Policy

3.3 Fiscal policy played a key role in mitigating the impact of COVID-19 on businesses, workers and households. This was enabled by prudent accumulation and management of reserves in the prior decades, which afforded Singapore the necessary resources to mount a quick and decisive response to the global health crisis.

3.4 The government's Budget 2022 was introduced in February at a time when strains on growth had eased considerably but rising inflation was confronting the economy. As such, the Budget provided targeted and scaled-down support to help businesses and households cope with the near-term cost challenges. Further supportive measures were subsequently announced in light of increasing concerns over inflation and business costs. In April 2022, the government brought forward and enhanced a number of measures to help households and firms cope with rising costs, such as additional Public Transport Vouchers (PTV) for lower-income households. In June 2022, with the prospect of global inflation remaining elevated for an extended period, the government introduced an additional S$1.5 billion support package, targeted at providing immediate relief for lower-income and more vulnerable groups.

3.5 At the same time, the government recognised in Budget 2022 the need to renew its focus on preparing the economy for structural changes. Thus, specific measures were introduced and existing ones enhanced to accelerate technological adoption and spur productivity, while

keeping with the broader objective of sustainable growth. Examples of these include investments in broadband and communications infrastructure and the expansion of the Productivity Solutions Grant (PSG) to help implement digital and automation solutions in firms.

3.6 At the same time, changes were made to the system of taxes and transfers to improve its progressivity and to finance expected increases in government expenditures. To smoothen the anticipated hump in development expenditure across multiple generations, the government has begun to borrow for and capitalise major, nationally significant, and long-term infrastructure with the introduction of the Significant Infrastructure Government Loan Act (SINGA).

3.7 The government's overall fiscal position is expected to come in at a S$3.0 billion deficit in Financial Year (FY) 2022.

3.8 The cyclically-adjusted budget balance (CABB), which gauges the discretionary fiscal injection to demand, is projected to register a shortfall of 4.4% of GDP in Calendar Year 2022, indicating a mild expansionary fiscal stance. The government will continue to review its financing position and plan for future revenue and expenditure measures in a fiscally sustainable manner.

Financial Sector Policies

3.9 Domestic financial conditions were generally accommodative through to early 2022, with resident lending increasing alongside the recovery in economic activity. The banking system's non-performing loan ratios had come down over the course of 2021, and local banks registered healthy profitability and remained well-capitalised, with sufficient domestic and foreign currency liquidity. Corporate sector profitability had broadly improved, mostly returning to pre-pandemic levels. SME credit quality had also been stable, notwithstanding the tapering of government support. Nevertheless, the authorities continue to monitor corporates with pre-existing vulnerabilities, which would now need to adjust to rising interest rates and increases in business costs.

3.10 Stress testing conducted by the MAS suggests that most households and corporates are able to service their debts under adverse scenarios of sharp interest rate hikes and significant income/earnings losses. MAS' regular Industry-Wide Stress Test for 2022 will examine key conjunctural downside risks including stagflation and a global resurgence in COVID-19 infections, alongside an exploratory analysis exercise involving a range of long-term climate scenarios.

3.11 The recent tightening of macroprudential policy was necessary to moderate the increasingly buoyant property market. The authorities will continue to review the ongoing developments in the property market to ensure sustainable conditions consistent with medium-term fundamentals.

3.12 The developments in crypto assets have taken on increased focus among international regulators. While spillovers to Singapore's mainstream financial system and the economy is limited, MAS closely monitors the risks in the crypto ecosystem and is actively reviewing its approach to regulation in this space. Notably, since 2017, the authorities have consistently warned that cryptocurrencies are not suitable investments for the retail public given their highly speculative nature. MAS has also been carefully considering the introduction of additional consumer protection safeguards, including placing limits on retail participation and rules on the use of leverage when transacting in cryptocurrencies. Such a regulatory approach recognises the inherent risks that arise with the application of new technologies, while balancing against the need to build a conducive institutional environment for digital asset innovation to develop in Singapore.

4 MEDIUM-TERM ISSUES

4.1 Beyond the cyclical responses, the authorities continue to take steps to ensure that the economy is ready to confront opportunities and challenges posed by technological advancements, demographic shifts and climate change, and that businesses and workers are equipped with deep and future-ready capabilities.

4.2 Addressing climate change has been a key priority area for Singapore. Carbon taxes were introduced in 2019, and this was followed by the Singapore Green Plan 2030, a government-led movement launched in 2021 to advance the national agenda on sustainable development. Budget 2022 underscored these initiatives by accelerating the timetable for achieving net zero emissions to by or around mid-century, including through increasing carbon taxes more quickly than previously set out. The government has also put in place efforts across multiple domains to empower, invest in and partner stakeholders in the green transition. Examples include investments to support new technologies under the Research, Innovation and Enterprise (RIE) 2025 Plan[1], decarbonising Singapore's energy sector through Energy Transition plans, and supporting the transition towards a low-carbon built environment.

4.3 With a rapidly ageing population, continuing challenges of global competition and increased automation in the economy, there is also a need to strengthen the social compact. The government aims to foster an inclusive economy through three main channels. First, by mitigating income inequality through uplifting incomes of lower-wage workers and targeting support at vulnerable households. Second, by enhancing social mobility throughout pre-school, schooling, and working years by investing in early childhood, formal education and lifelong learning efforts for continued employability. Third, by strengthening resilience through collective social support that complements individual efforts.

4.4 The government has committed to a series of policies to uplift lower-wage workers and address income inequality in the economy. One key measure is the Workfare Income Supplement (WIS), which supplements the employment income of eligible Singaporean workers at the bottom 20 percent of the wage distribution, with greater support for older workers. The WIS was introduced more than a decade ago and was significantly enhanced at Budget 2022. Another important measure is the Progressive Wage Model (PWM) that covers sectors and occupations with high concentrations of low-wage workers. The PWM facilitates raising the wages of workers sustainably through skills upgrading and improvements in productivity and standards, and has been steadily expanded to include more sectors and occupations, with the retail, food services and waste management sectors to be added over the next two years. The WIS and PWM are key structural schemes to uplift lower-wage workers. These measures, along with other social support schemes such as the recently introduced Progressive Wage Credit Scheme (PWCS) to co-fund wage increases for lower-wage workers, are regularly reviewed and have been enhanced over the years, as part of the government's long-term commitment to mitigate income equality.

4.5 Over the past decade, there have been significant increases in social spending, due in part to structural enhancements to support schemes for vulnerable individuals and households. Social spending, which includes spending on education and healthcare, has almost doubled from S$17 billion to S$31 billion over the last decade, and now takes up close to half of the annual Budget. Healthcare expenditure in particular has tripled from FY2010 to FY2019. The expected acceleration of such spending, together with major infrastructure investments, including on expanded rail lines, as well as other projects related to sustainable infrastructure development, are

[1] The RIE Plans outline planned investments in science and technology over 5-year intervals to support Singapore's development into a knowledge-based, innovation-driven economy and society. RIE2025 efforts are coordinated under four domains, namely (1) Manufacturing, Trade and Connectivity, (2) Human Health and Potential, (3) Urban Solutions and Sustainability, and (4) Smart Nation and Digital Economy.

expected to contribute to the ongoing process of external rebalancing in the economy, alongside anticipated increases in government expenditure and dissaving in the household sector resulting from an ageing population.

5 FINAL REMARKS

5.1 Amid elevated global uncertainties, the Singapore authorities will remain vigilant over global and domestic developments and assess how these could impinge on both macroeconomic and financial stability. The authorities stand ready to undertake appropriate policy responses should conditions deteriorate more sharply than anticipated. The authorities also remain committed to longer-term domestic restructuring, which will enable Singapore to embrace new economic opportunities and promote greater inclusive and sustainable growth.

5.2 Finally, the authorities are pleased to inform the Executive Board that they agree to the publication of the 2022 Singapore Article IV Consultation Report.