INTERNATIONAL MONETARY FUND

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SINGAPORE

July 2019

2019 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 2019 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 10, 2019 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 10, 2019, following discussions that ended on May 14, 2019, 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 19, 2019.
- An **Informational Annex** prepared by the IMF staff.
- A **Statement by the Executive Director** for Singapore.

The documents listed below have been or will be separately released.

Financial Stability System Assessment

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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COMMUNICATIONS DEPARTMENT

Press Release No. 19/277
FOR IMMEDIATE RELEASE
July 15, 2019

International Monetary Fund
700 19th Street, NW
Washington, D.C. 20431 USA

IMF Executive Board Concludes 2019 Article IV Consultation with Singapore

On July 10, 2019, the Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation[1] with Singapore.

Singapore's macroeconomic performance has been impressive. GDP per capita more than doubled in the last twenty years and income inequality has been declining since the GFC.

Singapore's economic activity moderated in 2018. After a surge in domestic demand in 2017, growth tapered to 3.1 percent in 2018. While consumption remained resilient, investment declined sharply, and the main drivers of growth shifted back to external demand. Growth decelerated further to 1.2 percent in 2019Q1 compared to the previous year, as manufacturing decelerated. Nonetheless, labor market conditions continued to improve in 2018: unemployment declined, employment expanded, and real wages grew. Inflationary pressures remained modest in 2018. MAS core inflation slowed slightly to 1.6 percent on year-on-year basis in 2019Q1, largely reflecting the decline in electricity prices and lower global oil prices. The current account surplus declined in 2019Q1 from a year ago but remains large as a share of GDP.

With less support from external demand, growth is expected to slow to 2 percent in 2019. Given global trade tensions, support from external sectors is expected to fall and growth drivers are projected to shift back to domestic demand. Investment is expected to pick up with the push for digitalization and new industry-related projects. MAS core inflation is expected to slightly edge down as the output gap closes, but headline inflation is expected to rise as the drag from accommodation and private road transport costs recede. Over the medium term, growth should stabilize around 2½ percent, increasingly driven by modern services alongside other trade-related sectors. Risks to the outlook are tilted to the downside and mainly stem from external sources, including a tightening of global financial conditions, escalation of sustained trade tensions, and deceleration of global growth.

[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.

Executive Board Assessment[2]

Executive Directors commended the authorities' sound macroeconomic management and strong policy frameworks, which have contributed to robust and resilient economic performance and reduced income inequality. Directors noted that Singapore's economic growth is expected to continue to moderate in 2019 as export momentum slows. The current account surplus remains large as a share of GDP. Looking ahead, risks are tilted to the downside stemming primarily from the external environment.

Directors commended the authorities' long-term policy approach and supported the use of Singapore's ample fiscal space over the medium and long terms to address challenges, including age-related spending, climate change, expansion and renewal of infrastructure, and programs to help workers and firms adapt to technological change, while preserving adequate fiscal buffers. Directors recognized that higher government spending would also support external rebalancing, given significant leakages through trade and remittances. A few Directors called for greater use of fiscal policy for a more balanced growth.

Directors supported the broadly neutral monetary policy stance. They recommended that monetary policy remain data-dependent. If downside risks materialize, fiscal policy should be the first line of defense and macroprudential policy could be eased while maintaining caution vis-à-vis financial stability issues. Directors welcomed the authorities' commitment to begin publishing foreign exchange intervention data to improve transparency.

Directors welcomed the findings of the FSAP and supported the main recommendations. In particular, they noted that Singapore's financial system is considered resilient, underpinned by a strong regulatory and supervisory framework. At the same time, liquidity stress tests reveal vulnerability in U.S. dollar liquidity. Directors, therefore, encouraged giving priority to bolstering banks' foreign exchange liquidity. Directors also urged further progress in enhancing the bank resolution framework by devoting more resources to the Monetary Authority of Singapore's resolution unit. Directors took positive note of the reforms to reinforce the safety of the payment system.

Directors welcomed the authorities' proactive use of macroprudential and other property-related measures. They commended the continued monitoring of conditions in property markets and appropriate adjustment of macroprudential measures. They suggested eliminating residency-based differentiation for the Additional Buyer's Stamp Duty, and then phasing out the measure once systemic risks dissipate.

Directors supported the authorities' focus on balancing the promotion of financial innovation against preserving financial stability, investor protection, and financial integrity. They called for continued vigilance, including to guard against money laundering/terrorism financing and cyber-risk and to minimize reputational risk.

[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.

Directors commended the authorities' structural reform agenda to raise productivity and turn Singapore into a global innovation hub through incentives to automate and innovate. They took note of programs to drive digitalization and technological adoption among businesses and promote lifelong learning and skill enhancement among individuals. Directors called for continued monitoring of the social impact of economic transformation. They underscored the need for greater efforts to incentivize the uptake of existing programs, especially among those more at risk of displacement by automation. They also emphasized that labor market policies should remain nimble to the rapidly changing nature of work. Directors welcomed the authorities' efforts to reduce Singapore's carbon emissions.

Singapore: Selected Economic and Financial Indicators, 2014–20

Nominal GDP (2018): US$364 billion

Population (2018): 5.64 million

GDP per capita (2018): US$64,567

Main goods exports (2018, percent of total exports): Electronic products (30 percent); mineral fuels (19 percent); and chemical products (14 percent).

Top three destinations for goods exports (2018, percent of gross goods exports): China (12.2 percent); Hong Kong SAR (11.8 percent); and Malaysia (10.9 percent).

						Projections	
	2014	2015	2016	2017	2018	2019	2020
Growth (percentage change)							
Real GDP	3.9	2.9	3.0	3.7	3.1	2.0	2.3
Total domestic demand	2.1	0.4	5.5	6.5	1.1	3.3	2.0
Final domestic demand	3.4	4.4	2.3	4.6	0.5	3.0	2.1
Consumption	3.0	5.9	2.9	3.6	3.0	3.0	2.6
Private consumption	3.6	5.2	2.7	3.4	2.7	2.7	2.7
Gross capital formation	0.8	-8.6	10.2	11.6	-2.1	3.8	1.0
Gross fixed investment	4.2	2.0	1.1	6.4	-4.0	2.8	1.1
Change in inventories (contribution to GDP growth, percentage points)	-0.9	-3.0	2.3	1.4	0.5	0.3	0.0
Net exports (contribution to GDP growth, percentage points)	2.1	3.6	0.0	-1.1	2.0	0.1	0.7
Saving and investment (percent of GDP)							
Gross national saving	47.4	42.6	44.2	44.5	44.5	43.5	43.3
Gross domestic investment	29.4	25.4	26.7	28.2	26.6	27.7	27.5
Inflation and unemployment (period average, percent)							
CPI inflation	1.0	-0.5	-0.5	0.6	0.4	1.0	1.3
CPI inflation, excluding food and energy 1/	0.6	-0.7	-0.9	-0.1	-0.2	0.8	1.2
MAS core inflation 1/	1.9	0.5	0.9	1.5	1.7	1.5	1.7
Unemployment rate	2.0	1.9	2.1	2.2	2.1	2.0	2.0
Central government finances (percent of GDP) 2/							
Revenue	17.1	17.3	18.5	19.1	18.5	18.1	18.2
Expenditure	12.2	14.1	15.2	14.2	14.4	14.1	14.2
Net lending/borrowing	4.9	3.1	3.3	4.9	4.0	4.0	4.0
Net lending/borrowing, excluding nonproduced assets	1.1	-0.5	0.5	1.8	1.0	0.8	0.7
Primary balance 3/	-1.1	-2.6	-2.6	-1.5	-2.3	-2.7	-2.9
Money and credit (end of period, percent change)							
Broad money (M2)	7.6	4.0	8.4	4.1	5.1	3.3	3.6
Credit to private sector	7.0	2.5	5.5	3.6	4.9	2.0	2.3
Three-month S$ SIBOR rate (percent)	0.5	1.2	1.0	1.5	1.9	…	…
Balance of payments (US$ billions)							
Current account balance	56.5	53.0	55.7	55.4	65.1	58.7	61.2
(In percent of GDP)	18.0	17.2	17.5	16.4	17.9	15.8	15.8
Goods balance	86.7	92.6	87.1	92.5	98.4	96.5	100.0
Exports, f.o.b.	450.6	396.1	371.4	408.5	459.7	469.3	484.6
Imports, f.o.b.	-363.9	-303.7	-284.3	-316.0	-361.4	-372.8	-384.6
Financial account balance 4/	47.3	51.5	56.5	26.0	49.4	52.7	53.3
Overall balance 4/	6.8	1.1	-1.8	27.4	12.5	6.0	8.0
Gross official reserves (US$ billions) 5/	256.9	247.7	246.6	279.9	287.7	260.9	270.9
(In months of imports) 6/	6.6	6.7	6.0	6.2	6.1	5.4	5.4
Singapore dollar/U.S. dollar exchange rate (period average)	1.27	1.37	1.38	1.38	1.35	…	…
Nominal effective exchange rate (percentage change) 7/	0.6	-0.9	1.9	0.0	1.0	…	…
Real effective exchange rate (percentage change) 7/	-0.6	-2.7	-0.2	-1.2	-0.5	…	…
Memorandum items:							
Nominal GDP (in billions of Singapore Dollars)	398.9	423.4	439.4	467.3	491.2	507.2	525.6
Growth (%)	3.7	6.1	3.8	6.3	5.1	3.3	3.6

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

1/ IMF staff estimates, showing projections from 2019. MAS core inflation excludes the costs of accommodation and private road transport.

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

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

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

5/ The projections for official reserves for 2019 and onward reflect the transfers of S$45 billion from the official foreign reserves to GIC Pte. Ltd., as announced in May 8, 2019.

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

7/ Increase is an appreciation.

INTERNATIONAL MONETARY FUND

SINGAPORE

STAFF REPORT FOR THE 2019 ARTICLE IV CONSULTATION

June 19, 2019

KEY ISSUES

Context. Singapore's macroeconomic performance has been impressive. GDP per capita more than doubled in the last twenty years and income inequality has been declining since the GFC. Policies have been aimed at boosting growth while promoting greater equity. As a highly open economy and an important financial center, Singapore is strongly influenced by developments in the region and the rest of the world.

Macroeconomic Setting. Singapore's growth is expected to continue to moderate as export momentum slows and growth drivers shift back to domestic demand. Inflationary pressures remain modest. The current account surplus declined in 2019Q1 from a year ago but remains large as a share of GDP. Risks to the near-term outlook are tilted to the downside and arise mainly from external sources. Over the medium term, modern services are expected to become increasingly important in driving growth.

Main Policy Recommendations. Policies should be geared toward addressing the challenges to growth and inequality posed by shifts in the global economy, aging, and technological change, which could also promote external rebalancing.

- If downside risks materialize, fiscal policy should be the first line of defense given the large buffers.
- More of Singapore's fiscal space could be deployed to meet medium- and long-term challenges arising from age-related spending, aging infrastructure, climate change, and technological change.
- Maintaining the current broadly neutral monetary policy stance is appropriate. Going forward, monetary policy should continue to be data dependent.
- The financial sector remains healthy with significant buffers. The authorities should continue to enhance their strong system oversight and remain vigilant vis-à-vis the balance between supervision and promotion of financial innovation.
- The authorities should keep monitoring the social impact of Singapore's economic transformation.

Approved By
Odd Per Brekk (APD) and Martin Kaufman (SPR)

Discussions were held in Singapore during May 2–14, 2019. The mission comprised Nada Choueiri (Head), Laura Jaramillo, Dan Nyberg, Jiae Yoo (all APD), Jochen Schmittmann (Resident Representative), and Han Teng Chua (Singapore office). The mission was joined by Ulric Eriksson von Allmen (FSAP mission chief). Keng Heng Tan and Selene Yoe (both OED) participated in the policy discussions. Yun He and Justin Flinner (both APD) assisted in the research and preparation of this report. Presentation of historical data and staff's macroeconomic projections are based on information available as of June 6, 2019.

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Abbreviations and Acronyms

ABSD	Additional Buyer's Stamp Duty
AML/CFT	Anti-money laundering/countering the financing of terrorism
ASEAN	Association of Southeast Asian Nations
CA	Current account
CFE	Committee on the Future Economy
CSIP	Council for Skills, Innovation, and Productivity
FCI	Financial Conditions Index
Fintech	Financial technology
FX	Foreign exchange
FY	Fiscal year
FSAP	Financial Stability Assessment Program
GaR	Growth-at-Risk
GDP	Gross domestic product
GFSM	Government Finance Statistics manual
GPT	General-purpose technology
GST	Goods and Services Tax
HALE	Healthy Life Expectancy
IP	Intellectual property
IPP	Intellectual property product
ITM	Industry Transformation Map
LTV	Loan to value
MAS	Monetary Authority of Singapore
ML/TF	Money laundering/terrorist financing
NEER	Nominal effective exchange rate
NIRC	Net Investment Returns Contribution
NPL	Nonperforming loan
R&D	Research and development
S$	Singapore dollar
TDSR	Total debt service ratio
US	United States, the
US$	U.S. dollar
y/y	Year-on-year

CONTEXT

1. **Singapore's macroeconomic performance has been impressive.** GDP per capita more than doubled in the last twenty years from less than US$24,000 in 2000 to more than US$64,000 in 2018. Income inequality, after increasing during the 2000s, has been on a steady decline over the last ten years. A crucial factor for this strong performance has been a stable macroeconomic environment. Significant fiscal buffers, credible monetary policy management and a robust financial sector have helped absorb external shocks and supported the strong economic performance.

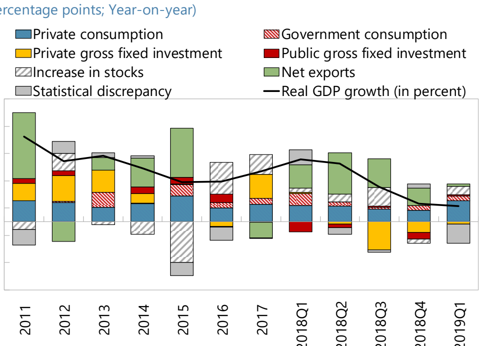
2. **Policies have been aimed at boosting growth while promoting greater equity.** The authorities are implementing measures to turn Singapore into a global innovation hub, redoubling efforts to boost labor productivity through investment in human, physical and organizational capital, and digitalization. Singapore is also emerging as a regional leader in fintech, supported by MAS. Meanwhile, social policies are being updated, with the aim of raising wages and standards of living for lower-skilled Singaporeans.

3. **As a highly open economy and an important financial center, Singapore is strongly influenced by developments in the region and the rest of the world.** Singapore's openness is an important part of its economic success but at this juncture it also exposes the economy to global trade and financial shocks. As noted by the 2019 Financial Sector Assessment Program (FSAP), which analyzed the financial system's extensive cross-border linkages, banks' cross-border lending (mainly to emerging Asia) represents about 60 percent of their total exposure and a large part of bank funding is cross-border and intragroup in nature.

ECONOMIC DEVELOPMENTS, OUTLOOK, AND RISKS

In the context of global economic uncertainties and trade tensions, Singapore's growth is slowing. Inflationary pressures remain modest. Risks to the near-term outlook are tilted to the downside, and stem mostly from external sources.

Singapore: Contributions to Real GDP Growth
(Percentage points; Year-on-year)



Sources: CEIC Data Co. LTD. and IMF staff calculations.

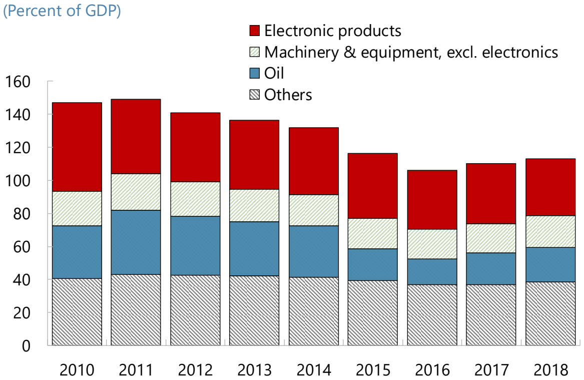
4. **Growth has moderated.** After a surge in domestic demand in 2017, investment declined sharply reflecting the subdued business sentiment, taking a toll on 2018 growth.[1] While consumption remained resilient, the drivers of growth shifted back to external demand. Growth tapered to 3.1 percent in 2018 (2017: 3.7 percent). Nonetheless, labor market conditions continued to improve in 2018: the unemployment rate declined, employment expanded, and real wages grew. On the

[1] The fall in investment in 2018 can be largely explained by the base effect, following the strong investment in 2017.

supply side, trade related sectors remained the main driver of growth, notwithstanding a slowdown in manufacturing growth in the second half of 2018. Growth in the modern services sector remained firm, and the construction sector is recovering.[2] Growth moderated further to 1.2 percent in the first quarter of 2019 compared to the corresponding period of 2018, as the trade related sector, especially manufacturing, decelerated.

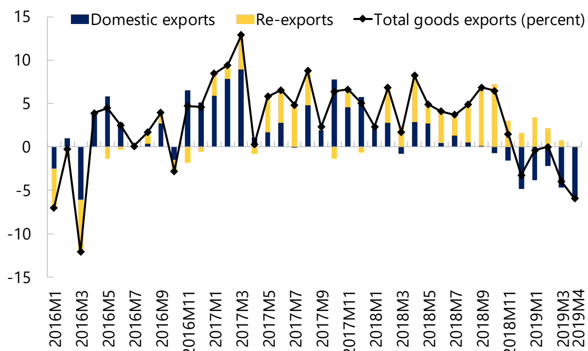
5. Singapore's strong trade performance weakened towards end 2018. Export volumes were robust in the first three quarters supported by the re-exports of machinery and equipment, while domestic exports were weak. However, the last quarter of 2018 saw a dip in export growth due to a slowdown of exports to ASEAN and a fall in exports to China. The weakness in exports continued through April 2019.

Singapore: Total Goods Exports
(Percent of GDP)



Sources: Haver Analytics and IMF calculations

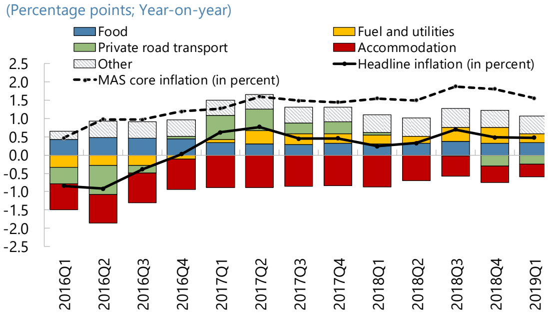
Singapore: Contribution to Goods Exports Growth
(Year-on-year change in percentage points; constant price; seasonally adjusted)



Sources: Haver Analytics and IMF staff calculations.

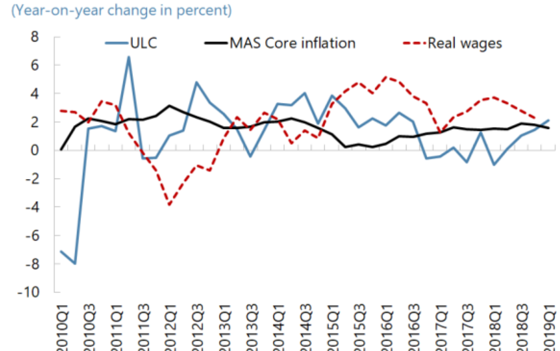
6. Inflationary pressures remained modest, with MAS core inflation averaging 1.7 percent in 2018 (2017: 1.5 percent). Price pressures largely stemmed from external sources, including higher energy prices. Food price inflation remained benign. Domestically, with the improvements in labor market conditions, unit labor costs slightly picked up by about ½ percent in 2018. Headline inflation was below ½ percent in 2018 (2017: 0.6 percent) due to a drag from the costs of accommodation and private road transport. MAS core inflation slowed to 1.6 percent on year-on-year in Q1 2019 largely reflecting the decline in electricity prices due to the liberalization of the retail electricity market and lower global oil prices.

Singapore: Contributions to Headline and MAS Core Inflation
(Percentage points; Year-on-year)



Sources: Haver Analytics; and IMF staff calculations

Singapore: MAS Core Inflation, ULC, and Wages
(Year-on-year change in percent)



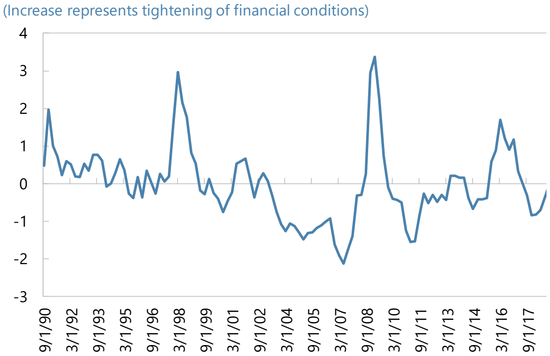
Sources: Haver Analytics and IMF staff calculations.

[2] The "modern services sector" term refers to information and communications, finance and insurance, real estate services, and professional services.

7. The fiscal stance in FY2018 was expansionary.[3] The overall fiscal surplus excluding land sales is estimated at 0.6 percent of GDP, compared to 2 percent of GDP in FY2017.[4] The structural primary balance fell by 0.9 percent of potential GDP largely due to lower revenues from vehicle quota premiums and a modest increase in development expenditure, notwithstanding the suspension of the Kuala Lumpur-Singapore High Speed Rail (HSR) project.

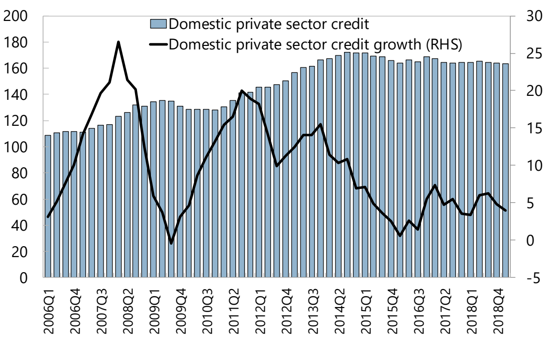
8. Financial conditions have tightened. MAS tightened monetary policy in 2018 in response to above-potential growth, a positive output gap, and expected upward pressure on core inflation. In April and October 2018, the slope of the S$NEER policy band was slightly increased, while the center-point and width remained unchanged. In its April 2019 monetary policy meeting, MAS kept unchanged the rate of appreciation of the S$NEER policy band, with no change to its width and the level at which it is centered. In tandem with global interest rates, Money market and short-term real rates have generally increased, while long term real rates remained flat. Private sector credit has continued to grow broadly in line with nominal GDP and the credit gap is nearly closed.

Singapore - Financial Conditions Index
(Increase represents tightening of financial conditions)



Sources: Bloomberg L.P., Haver Analytics, and IMF staff calculations.

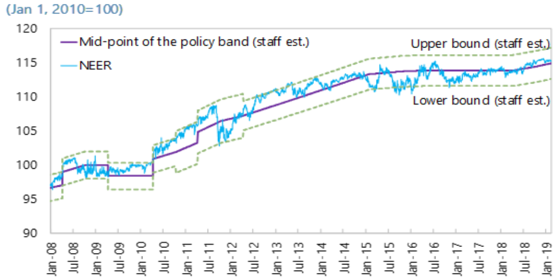
Singapore: Domestic Private Sector Credit
(Percent of annual GDP on LHS; Year-on-year percent change on RHS)



Sources: Haver Analytics, and IMF staff calculations.

9. The private housing market showed signs of overheating in 2017-18. Average monthly transactions increased by 35 percent in the year through June 2018, compared to the previous two years, and prices increased by 9.1 percent year-on-year in 2018Q2. Developer land purchase activity, including en-bloc

Nominal Effective Exchange Rate and Policy Band 1/
(Jan 1, 2010=100)



Source: IMF, *Information Notice System*; and IMF staff estimates.
1/ Mid-point, lower and upper bounds of the policy band are staff estimates.

[3] Fiscal year 2018 corresponds to April 1, 2018 to March 31, 2019.

[4] 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 used in policy discussions with the authorities. The overall surplus including land sales was 3.6 percent of GDP in 2018.

purchases,[5] in 2016-2018H1 led to high bidding activity (also implying a rising housing supply over the medium term). The number of foreigners purchasing properties, as well as the transactions values, increased significantly in 2017 and early 2018. In this context, the FSAP analysis found that foreigner residential property purchases had an upward effect on property prices (see further discussion below).

10. The authorities tightened macroprudential measures in July 2018 to cool off a rapid increase in real estate prices. In view of rising house prices fueling overvaluation and raising the level of systemic risk, the authorities implemented a package of measures that tightened LTV limits and raised the Additional Buyer's Stamp Duty (ABSD) for residential property purchases to reduce the risk of a destabilizing price correction. Specifically, for individuals, loan to value (LTV) ratio limits were lowered for all mortgages, and ABSD rates were raised by 5 percentage points, except for Singaporeans and permanent residents buying first properties. For non-individuals, LTVs were lowered and the ABSD was raised by 10 percentage points, with an additional 5 percentage points for housing developers. The differentiation between residents and non-residents in the ABSD was maintained.[6] In response to these policies, house price growth slowed, transactions declined, especially in the private market, and mortgage credit edged down (though remaining high as a share of GDP). Nonetheless, property prices remained moderately overvalued.

11. The financial sector performance has been strong. The FSAP found that bank capital ratios continued to exceed regulatory minima with comfortable margins. Non-performing loans remained low and stable (1½ percent for local banks at end 2018) and bank profitability was healthy. The loan-to-deposit ratio in domestic currency stood at 88 percent at end-2018, but the FX loan-to-deposit ratio remained significantly higher at 128 percent. With relatively muted credit growth, household debt was stable (about 70 percent of GDP), and households continued to maintain sizeable positive net asset positions (about 380 percent of GDP). Corporate debt is high but has stabilized at about 150 percent of GDP and corporates' overall debt-service capacity is supported by sizeable cash buffers.

12. Singapore has become an important hub for financial innovation. As described in the FSAP, the authorities have an ambitious plan to digitalize and transform the economy into a global technological innovation hub. In the financial services area, MAS has promoted fintech via initiatives such as regulatory sandboxes, financial grants, training, and conferences and festivals. Fintech developments so far have focused on partnership with existing financial institutions or on serving markets outside of Singapore. There are already several crypto-exchanges trading payment tokens in Singapore and their number may increase following the enactment of the new Payment Services Act (PS Act) in February 2019.[7] So far crypto-asset investments by Singaporean investors are relatively limited.

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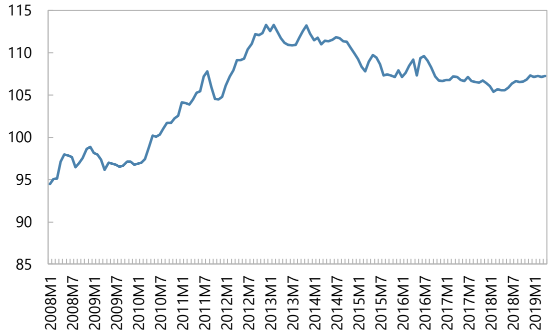
[5] En-bloc sale refers to when the residents of an older property development sell their homes simultaneously to a buyer, typically a property developer.

[6] Because of this differential, the ABSD is assessed as a CFM/MPM according to the IMF's Institutional View on the Liberalization and Management of Capital Flows (IMF Country Report No. 17/240).

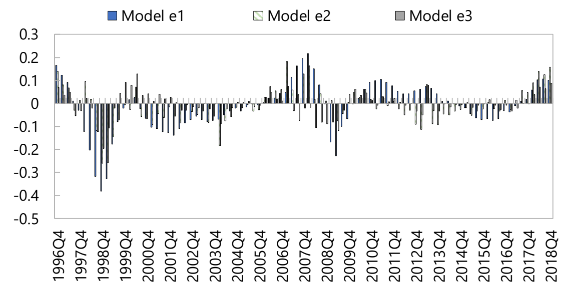
[7] The Payment Services Act brings cryptocurrency dealing or exchange services under the supervision of the MAS.

Singapore: Real Effective Exchange Rate
(Index; 2010=100; based on Consumer Price Index)



Sources: IMF staff estimates.

Singapore: Estimated Residuals from Long-Run House Price Equilibrium: Residential House Prices(overall) 1/



Sources: IMF staff estimates.
1/ For details on the underlying model, see Appendix VII of IMF Country Report No. 18/245.

13. Savings have been high. The current account surplus increased from 16.4 percent of GDP in 2017 to 17.9 percent of GDP in 2018, driven by a narrowing of the services balance deficit, which offset a wider oil trade deficit. Over the past years, the main drivers of Singapore's strong external position have been its status as a financial center, sustained fiscal surpluses, the build-up of assets under the mandatory defined-contribution pension scheme and high competitiveness. Household assets amounted to 448 percent of GDP in 2019Q1. While mandatory savings under the Central Provident Fund (CPF) helped build a stock of about 80 percent of GDP, the household sector held 175 percent of GDP worth of additional financial assets at end 2019Q1. While social policies in Singapore (including CPF savings and healthcare schemes) aim to provide coverage for pensions, health, and housing, households may be motivated to accumulate further savings to supplement this coverage and to leave a bequest.

14. Staff assesses the external position to be substantially stronger than warranted by fundamentals and desired policies. The current account balance gap is estimated at 1.1-7.1 percent of GDP (Appendix I). Domestic policy gaps, largely due to the fiscal surplus, explain 0.9 percentage points of the overall gap. Consistent with the estimated current account imbalance, the real exchange rate was assessed to be undervalued by 2.2-14.2 percent. Continuing a trend seen since 2014, the real effective exchange rate (REER) depreciated in 2018 by 0.5 percent. In contrast, the nominal effective exchange rate appreciated by 1 percent in 2018 reflecting the monetary policy tightening. Over the medium term, higher government spending related to aging, infrastructure, and support for the economy's structural transformation—including on innovation and human capital upgrades—should help move Singapore towards external current account balance and REER equilibrium.

15. Several recent policies have been consistent with past Fund advice (Appendix II). MAS tightened monetary policy in 2018 in response to above-potential growth, a positive output gap, and rising inflation expectations. In recent years, government expenditure has increased to accommodate healthcare and other aging-related spending, transportation infrastructure, innovation, and targeted transfers to promote workers' skills acquisition. The budget has increasingly benefited from contributions from the net investment returns on government assets.

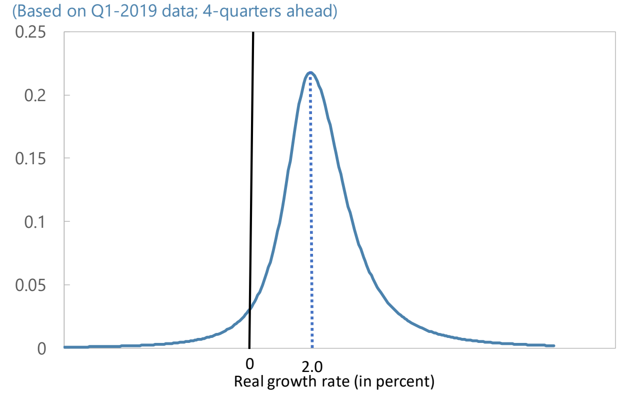
Singapore's strong policies and oversight frameworks support a healthy financial sector, including through a sophisticated framework for systemic risk monitoring.

16. With less support from external demand, growth is expected to slow in 2019, while inflation remains moderate. Economic growth is projected to decline to 2 percent in 2019, below potential (estimated at 2½ percent in the medium term) as the output gap closes. Given global trade tensions, support from external sectors is expected to fall and growth drivers are projected to shift back toward domestic demand. Investment is expected to pick up with the push for digitalization and new industry-related projects. While labor market conditions are unlikely to improve further, consumption growth is expected to benefit from fiscal measures (including the one-off Bicentennial Bonus and targeted healthcare initiatives). Staff projects MAS core inflation to slightly edge down to 1.5 percent in 2019 as the output gap closes, but also due to lower electricity prices following the retail market liberalization. Headline inflation is expected to rise as the drag from accommodation and private road transport costs recede. The current account is expected to edge down to about 16 percent in 2019 due to weak external demand. Over the medium term, growth should stabilize around 2½ percent, with modern services becoming an increasingly important driver. Over the longer-term, aging will pose challenges to growth.

17. Risks to the outlook are tilted to the downside and mainly stem from external sources (Appendix III). One-year-ahead estimates of growth at risk suggest a higher chance of recession in 2019 compared to last year. Indeed, as a financial and trading hub, Singapore is particularly exposed to a tightening of global financial conditions, escalation of sustained trade tensions, and deceleration of global growth.

Singapore, Growth-at-Risk

(Based on Q1-2019 data; 4-quarters ahead)



Sources: Fund staff calculations using the Excel-based tool in IMF (2019), "Growth at Risk: Concept and Applications in IMF Country Surveillance.

- Tighter or more volatile global financial conditions could lead to stress on leveraged firms and households, capital account pressures, and an economic downturn. The FSAP analysis of cross-border bank lending suggests that Singapore is most exposed to potential inward spillovers from major advanced economies, namely Japan, Hong Kong S.A.R., and the United States, but also that Singaporean banks can be an important source of spillovers mainly to other ASEAN countries.

- Trade tensions between the U.S. and China pose important risks to Singapore, given its large goods exposure to China. At the time of writing, significant uncertainties continued to cloud the outlook. A deal in which China would divert some of its imports from elsewhere to the U.S. to reduce its bilateral trade surplus vis-à-vis the U.S. could have an adverse impact on Singapore. Alternatively, in the absence of a deal, an escalating trade dispute could lead to a larger-than-expected global growth slowdown which would also weigh on Singapore's exports and growth.

- Domestically, a large and disorderly property price correction would have adverse wealth effects on households and impact financial stability given bank's exposures through the mortgage market. Delays in generating productivity gains are additional domestic medium-term risks to growth.

Authorities' Views

18. The authorities broadly agreed with staff assessment of the outlook. After several quarters of above-potential growth, the Singapore economy has transited to slower growth weighed down by the decelerating global trade and electronics cycle. The authorities expect that growth will continue to be moderate given the weak external outlook, as domestic demand holds up underpinned by supportive labor market conditions. Despite some pickup in labor costs, inflation is likely to be kept in check as the inflationary pressures from external sources remain benign and the previous rounds of monetary policy tightening in 2018 continue to contain domestic pressures.

19. Singapore's banking system, corporate, and household fundamentals remain resilient, despite increased uncertainty. MAS assesses that domestic credit growth remains in line with economic conditions and does not observe any broad-based domestic credit overheating at this juncture. Domestic liquidity conditions have tightened over the past six months, due to a rise in the NEER and domestic interest rates. Corporate balance sheets, including solvency and liquidity positions, have remained broadly stable. Household balance sheets have strengthened, alongside an improving employment outlook.

20. On the external sector assessment, the authorities emphasized that the saving-investment balance reflects structural features of the economy. High corporate saving is driven by the presence of multinational corporations that use Singapore as a regional hub, channeling resources to external markets for investment. High household saving reflects the fact that two-thirds of the population is still in prime working age and is actively saving for retirement. Moreover, older workers are encouraged to stay active and work longer if they can, which improves their retirement adequacy. Households' saving helps to smooth out their life-time stream of income and spending without incurring unfunded debt. Similarly, the government's policy is not to incur unfunded liabilities. Government saving thus reflects fiscal prudence in anticipation of rising expenditures on healthcare for an aging population as well as on major infrastructure investments, and is guided by the balanced budget rule over each term of Government.

21. The authorities noted that a further escalation of the ongoing trade tensions and slower-than-expected growth in the Chinese economy are the main downside risks in the near term. The negative spillovers from the ongoing trade tensions could weigh on future corporate profitability through lower earnings. Tightening financial conditions could also strain the debt servicing ability of over-leveraged firms. An abrupt tightening of global financial conditions could accentuate foreign currency liquidity risks in Singapore's banking system. A disorderly Brexit is another source of risk to growth. Over the medium to long term, the authorities see aging, technological transformation and climate change as the main challenges.

MACROECONOMIC, FINANCIAL, AND STRUCTURAL POLICIES

Policies should be geared toward addressing the challenges to growth and inequality posed by shifts in the global economy, aging, and technological change, which could also promote external rebalancing. Shifts in global value chains require efforts to maintain competitiveness, while external financial spillovers continue to pose challenges. Rapid population aging will weigh on potential growth and raise spending pressures. New technologies have the potential to lift productivity but could also displace vulnerable workers. The authorities should remain ready to deploy Singapore's fiscal space to address these impending challenges. Monetary policy should continue to be data-dependent. Given the importance of dollar funding and liquidity for Singapore's banks and economy, strengthening banks' foreign exchange liquidity should be a priority. As the authorities implement their structural reform agenda to turn Singapore into a global innovation hub, they should continue to monitor the social impact.

A. Fiscal Policy

22. The FY2019 budget projects a continued surplus while incorporating measures to help address medium-term challenges. The overall surplus excluding land sales is expected to reach 0.8 percent of GDP on account of lower development expenditure (including the suspension of the HSR), and despite the moderation in stamp duties. Measures directed at businesses, particularly SMEs, are largely designed to foster investment, use of technology, and innovation. Measures to support inclusiveness include the Bicentennial Bonus,[8] expansion of healthcare schemes, and measures to encourage employment of older workers. The budget also reiterates the authorities' intention to raise the goods and services tax (GST) from 7 percent to 9 percent sometime in 2021-25, in response to impending healthcare spending increases. While the FY2019 budget implies a mildly contractionary fiscal stance, the authorities should remain ready to provide fiscal stimulus if downside risks materialize.

23. While Singapore's macroeconomic policy mix has focused on preserving internal balance, there is room to raise fiscal spending, which could also help external rebalancing. Monetary and fiscal policy have delivered price stability and fiscal sustainability, while fostering growth and solid labor market performance. While fiscal policy in Singapore is formulated with longer-term objectives in mind (including productivity, equity, and social mobility), it has nonetheless expanded when the output gap has been negative and retrenched as the economy has

[8] The Bicentennial Bonus includes (1) additional payments to lower-income Singaporeans from the GST Voucher and Workfare Income Supplement schemes (cost of about S$500 million), (2) a Personal Income Tax Rebate of 50 percent of tax payable, targeted at middle-income earners by being capped at $200 per taxpayer (cost of about S$280 million); (3) one-off top-ups to Edusave Accounts and Post-Secondary Education Accounts (cost of about S$140 million); and top ups to the Central Provident Fund accounts of older Singaporeans with lower retirement savings (cost of about S$230 million).

recovered. However, the external balance assessment suggests that fiscal policy contributes to external imbalances. Indeed, Singapore has tended to overperform with respect to its fiscal rule of a balanced budget over the political cycle, contributing to a large buildup of net assets (Appendix IV), suggesting that Singapore has substantial fiscal space.[9] Such fiscal space enables Singapore to support growth in the short run without compromising the authorities' ability to meet longer-term objectives. Higher spending would support external rebalancing, given significant leakages through trade as well as remittances, as nonresident workers account for about 37 percent of employment.[10] Monetary policy would need to take this higher spending into account as needed to maintain internal balance.

24. Challenges over the medium and long term will require spending that could be met by deploying more of Singapore's fiscal space. Singapore faces a number of challenges including (1) a sharp increase in age-related spending needs due the rapidly aging population, in particular on healthcare, (2) fundamental threats including climate change given Singapore's low-lying areas, (3) the lumpiness in the need to rejuvenate the public housing stock and expand or renew other infrastructure (such as rail lines, the airport, and drainage),[11] and (4) spending needs to raise productivity and help ease transition costs for firms and workers as Singapore embraces technological change and structural transformation. Singapore's fiscal framework is designed with these challenges in mind. The returns on government assets are increasingly supporting the social and investment expenditure in the budget. Indeed, the net investment returns contribution is the largest contributor to government revenues, accounting for about one-fifth of revenues in 2018 (double the share in 2005), and Singapore runs a structural primary deficit. Although some of these medium- to longer-term challenges entail a great amount of uncertainty, a better grasp of their combined magnitude would help in assessing the level of desired assets over the medium term, with implications for the targeted fiscal balance, plans for government borrowing, and the need for revenue mobilization, including the announced GST increase.

25. Government borrowing to fund new long-term infrastructure projects will help smooth the financing of lumpy expenditures and is a sound use of fiscal space. In addition to guarantees, the authorities are studying the option of using government debt as part of the financing mix for major infrastructure projects where benefits span several generations. This would entail a significant shift in policy as, since the early 1990s, proceeds from central government

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[9] Government net assets include deposits at MAS (8.5 percent of GDP at end-FY2018), funds managed by Temasek (66 percent of GDP at end-FY2017), and funds managed by GIC (total amount is undisclosed, but it is well over US$100 billion), minus government gross debt (114 percent of GDP at end-FY2018).

[10] IMF Country Report No. 08/281 suggests that fiscal multipliers for Singapore tend to be small. This may reflect a number of factors, including leakages due to the openness of the economy, the absence of credit-constrained economic agents, and a high propensity to save among households.

[11] Data in Phang and Helble (2016) suggest that almost half of the existing public housing stock was built by the Housing and Development Board in the 1980s and 1990s. This implies that a large stock of housing will reach the end of its useful life simultaneously and need rejuvenation within a concentrated number of years. See Phang, S. Y. and M. Helble, 2016, "Housing policies in Singapore", The Housing Challenge in Emerging Asia. 174-209. Research Collection School of Economics.

borrowing have not been used to finance the budget.[12] Staff supports greater infrastructure spending and its financing through debt, given low sovereign borrowing costs and the role of government paper in deepening Singapore's debt market.

26. Rapid population aging is expected to create substantial government spending pressures over the medium term, especially on healthcare. Age-related spending needs will likely mount for both pensions and healthcare. The mandatory defined-contribution pension system is financially sustainable.[13] However, government outlays are needed to supplement pensions for Singaporeans with inadequate CPF savings, also in the context of long life expectancies (21 years at age 65).[14] On health, Singapore has achieved strong outcomes at relatively low cost. Healthy life expectancy (HALE) at birth in 2016 in Singapore was 76.2 years, the highest in the world, even as total spending on healthcare (4.5 percent of GDP) is less than that in OECD countries. Nonetheless, healthcare spending has risen sharply in recent years, especially public healthcare spending, driven by demographic and non-demographic cost pressures that will intensify going forward. Staff estimates suggest that total healthcare spending in Singapore could double by 2050, to more than 8 percent of GDP (see Appendix V). Costs would be even higher if age-specific utilization rates continue rising, in particular for long-term care. The government would face substantial pressure to take on a larger share of the burden to preserve affordability.

27. Singapore is taking concerted action to reduce carbon emissions and meet its commitment under the 2015 Paris Agreement on climate change. Singapore accounted for 0.1 percent of global greenhouse (GHG) emissions in 2015. Despite its limited access to renewable energy, Singapore is on track to fulfill its Nationally Determined Contribution (NDC).[15] Singapore took early action to reduce its GHG footprint by switching electricity generation from fuel oil to natural gas, which now represents over 95 percent of the energy mix. In 2019, Singapore implemented measures to increase the cost of carbon emissions. A carbon tax at S$5 per ton of GHG came into effect in January 2019, targeting direct emissions from large emitters, without exemption for any sector. Singapore also imposes excise duties on petrol, diesel and compressed natural gas, and periodically reviews them to meet the associated car usage, health and environmental objectives (Appendix VI).

[12] Government borrowing was used prior to the 1990s to build the first Mass Rapid Transit (MRT) lines, Statutory Boards and government-owned companies have financed many major infrastructure projects through borrowing.

[13] The OECD Pensions at a Glance Asia/Pacific 2018 estimates the gross pension replacement rate for Singapore at 53.1 percent of wages for the median male earner and 47.3 percent of wages for the median female earner, compared to an average in OECD countries of 52.9 percent for males and 52.3 percent for females. However, this estimate does not take into account other schemes that reduce living expenses for retirees, including home-ownership (more than 80 percent of retirees own their home) and partial coverage for health expenses through the Medisave account and government health insurance.

[14] The government currently reinforces pension savings in CPF accounts of lower-income households by providing a higher return on their balances and providing top-ups financed through the budget.

[15] Singapore's Nationally Determined Contribution (NDC) to the 2015 Paris Agreement on climate change is to reduce emissions intensity (CO2 emissions per unit of GDP at 2010 prices) by 36 percent from 2005 levels by 2030 and to stabilize emissions with the aim of peaking around 2030.

Authorities' Views

28. While fiscal policy focused on medium to long-term restructuring rather than calibrated to smooth the economic cycle, the authorities stand ready to provide fiscal stimulus in the event of an economic downturn. The near-term impact of fiscal policy is small because leakage is very high. Nonetheless, possible stimulus measures would be aimed at those with the greatest boost to domestic consumption. These could include targeted subsidies to preserve employment, tax breaks and grants to enhance business cash-flow, transfers to lower income households, and bringing forward smaller infrastructure projects.

29. The external balance is not a consideration when determining the policy mix. Monetary and fiscal policies focus on fundamentals: low and stable inflation, strong inclusive growth, resilient labor market outcomes, and fiscal sustainability. The most important factors affecting growth and inflation are external demand and external inflation, which motivates the exchange rate-based monetary policy framework. Fiscal policy is designed from a supply-side perspective: to raise productivity, reduce inequality, and promote social mobility.

30. Singapore's fiscal reserves serve multiple objectives. In particular, the reserves represent: (1) a rainy-day fund, to serve as a buffer against crisis; (2) an endowment fund, to provide a steady stream of income to supplement the government budget across generations; and (3) a stability fund, to maintain confidence in Singapore's exchange rate centered monetary policy. The pace of accumulation of government assets was strong during Singapore's earlier stage of economic development, due to strong economic growth and a sizeable active population share. Over the past decade, this pace has decelerated, as government spending has exceeded operating revenues and balancing the budget has required bringing on-budget half of net investment returns. The role of the reserves as an endowment will become even more important in the years ahead, given spending pressures. Moreover, meeting these spending pressures calls for a combination of raising tax revenue for recurrent spending (such as healthcare) and borrowing for critical major infrastructure projects that benefit multiple generations.

B. Monetary and Financial Sector Policies

31. Singapore's monetary policy framework has helped deliver price stability. Since 1981 , the MAS has operated a basket, band, crawl (BBC) exchange rate-based monetary policy framework in which the nominal effective exchange rate (NEER) is managed against a basket of currencies, with the objective of maintaining medium-term price stability.[16] The basket, band and associated center point are undisclosed but empirical analysis suggests that monetary policy can be characterized by a Taylor-type rule with the NEER as the short-term policy instrument.[17] Building on its long-standing efforts to increase transparency and communications about its monetary policy framework, MAS

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[16] The Singapore dollar has been appreciating and, since February 2018, meets the criteria of a crawl-like exchange rate arrangement. Therefore, the de facto exchange rate arrangement was reclassified to "crawl-like" from "stabilized", effective February 9, 2018.

[17] IMF Country Report 18/245.

announced on May 8, 2019 a decision to disclose further information about its monetary policy operations. In this respect, beginning with the data for the second half of 2019, MAS will release semi-annually data on net purchases of foreign exchange on a six-month aggregated basis, with a six-month lag from the end period.[18] Staff welcomes this announcement, which will enhance transparency without compromising operational effectiveness of the MAS monetary policy.

32. The monetary policy stance is appropriately supportive of price stability. The current monetary policy stance is broadly neutral. Before monetary policy normalization was initiated in 2018, the stance was accommodative, with the output gap close to 1 percent and inflation on the rise. The tightening policy in 2018 was therefore appropriate, to contain pressures that were building up at the time. The output gap is now closed, growth is moderating, and core inflation has stabilized. Moreover, the Fed has announced a hold on further monetary policy tightening, given muted inflation pressures. Against this background, the MAS' decision on April 12 to keep monetary policy on hold was appropriate. Going forward, monetary policy should continue to be data dependent. As downside risks materialize, fiscal policy should be the first line of defense given the large buffers, and macroprudential policy could be eased while maintaining caution vis-à-vis financial stability issues.

33. Analysis of business and financial cycles suggests an important role for buffers and macroprudential policies in helping with stabilization. Analysis of business cycle synchronization indicates high cyclical concordance[19] between Singapore's cycle and proxies for the global business cycle. However, Singapore's cycle depicts higher volatility, suggesting the importance of maintaining strong precautionary buffers in both the corporate and household sectors. The financial cycle in Singapore shows less synchronization with its global counterpart, especially in the post-GFC period where global interest rates have been low, which could result from Singapore's proactive use of macroprudential measures to limit excessive credit and house price growth (Appendix VII).

34. Singapore's large financial center is underpinned by a strong regulatory and supervisory framework. The 2019 FSAP findings highlight the strength of the policies and oversight frameworks supporting the financial sector (Box 1). The system's strengths suggest that, under current policies, spillovers from financial sector risks to the broader macroeconomy are contained. The FSAP solvency stress testing suggests that the major Singaporean banks can absorb sharp increases in credit losses in severe but plausible scenarios. However, the major banks' overall liquidity position is mixed—while domestic currency liquidity is comfortable, liquidity stress tests reveal vulnerability in U.S. dollar liquidity. Given the importance of dollar funding and liquidity for Singapore's banks and economy, strengthening banks' foreign exchange liquidity should be a priority.

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[18] MAS also announced the transfer of S$45 billion from the official foreign reserves to the Government for management by GIC, to be invested on a longer-term basis with expected higher returns. After the transfer, foreign reserves remain adequate (at about 200 percent of the Fund's Adequacy of Reserves metric).

[19] Concordance measures the fraction of time that two series are in the same phase of their respective cycles.

35. The recent macroprudential measures have slowed mortgage credit and price growth in the private housing market, but staff analysis suggests that systemic risks persist stemming from moderately overvalued prices. In the first quarter of 2019, house prices declined by 0.7 percent compared to the fourth quarter of 2018. Mortgage credit growth slowed to 0.9 percent in March 2019 from 4.4 percent one year earlier. However, this moderation is unlikely to have brought the market fully in line with fundamentals—indeed, the staff's empirical analysis suggests that private residential prices were higher than warranted by fundamentals in 2018. Residential supply is expected to expand over the medium-term.

36. Property market cooling measures should therefore be maintained until systemic risks subside. Household mortgages exceed 50 percent of GDP and represent over three-quarters of total household debt. These, together with corporate real-estate related debt, account for a substantial share of domestic systemically important banks' balance sheets. Thus, sudden or large property price fluctuations pose a systemic risk to the financial sector through potential bank losses, which could result in a sharp credit crunch. Singapore is an attractive real estate market for foreign investors searching for yield and is likely to remain so, especially in a global low-interest-rate environment. The FSAP found that a higher share of transactions by speculators and foreigners leads to faster increases in property prices. Given latent demand for housing, both from domestic and foreign sources, both structural macroprudential policies (total debt servicing ratio and loan-to-value caps), and cyclical measures such as the ABSD should be maintained. Staff recommends eliminating residency-based differentiation in the ABSD by unifying rates, and then phasing out the measure once systemic risks from the housing market dissipate.

37. Singapore is an important hub for financial innovation, but this also brings challenges. The FSAP considered that the MAS so far has managed to strike a good balance between promoting financial innovation and preserving financial stability, investor protection, and financial integrity, but this is a challenge that will require continued vigilance, not least to guard against cyber-risk and minimize potential reputational risk. One area where the balance between supervision and the promotion of financial innovation could be improved relates to banks' outsourcing of critical functions—which has become more important with the growth in fintech. The MAS should clarify that it may require pre-notification of material outsourcing arrangements where it is not satisfied that a bank has managed its outsourcing risk adequately. As noted in the FSAP, Singapore should continue to mitigate the transnational money-laundering/terrorism-financing (ML/TF) risks associated with certain legal entities and arrangements that may be formed or administered in Singapore, such as shell companies established by non-residents, which may be susceptible to being misused for tax evasion and other financial crimes. As digitization of the financial sector deepens, continued vigilance will be needed to address ML/TF risks.

Authorities' Views

38. On the monetary and financial policy discussions, the authorities broadly agreed with staff's assessment. The policy stance is consistent with a modest and gradual appreciation path of the S$NEER policy band that will ensure medium-term price stability. On financial sector risks, banks prudently rely mostly on deposits for funding, but they need to actively monitor and manage their foreign currency liquidity risks as they expand their cross-border lending activities. MAS' latest stress tests across the banking, corporate and household sectors indicate that the overall system is resilient. The property market cooling measures in July 2018 have moderated the pace of price increases and transaction activity. This will contribute to stronger household balance sheet positions over the medium term. The initiative to disclose net purchases of foreign exchange will provide market participants a better indication of the actions that MAS has undertaken to implement its monetary policy stance, while preserving its operational effectiveness. MAS' foreign exchange intervention operations will remain focused on keeping the S$NEER within its policy band, to keep inflation low over the medium term.

39. Singapore is a center for financial innovation. Underpinned by a strong regulatory and supervisory framework, the financial sector is an integral part of Singapore's ambition to be a Smart Nation. MAS seeks to create a Smart Financial Centre where technology is used pervasively in the financial industry to increase efficiency, create opportunities, allow for better management of risks, and improve lives.

C. Structural Policies

40. The structural reform agenda is appropriately geared towards addressing medium-term challenges associated with the growth impact of aging and technological change. Objectives are to raise productivity and turn Singapore into a global innovation hub through incentives to automate and innovate. Guided by the recommendations of the Committee of the Future Economy issued in 2017, the government has launched several programs for individuals (lifelong learning and skill enhancement programs), businesses (measures to drive digitalization and technological adoption) and government (digitizing government services). It has embarked on sectoral transformation through the design of 23 Industry Transformation Maps that together cover 80 percent of the economy. In all these initiatives, the government emphasizes the tripartite partnership government-businesses-workers, but takes the lead in planning, selection, and design. SME engagement in these initiatives appears limited. To ensure effective implementation of these programs, greater efforts will be needed to raise awareness and incentivize the uptake of existing programs.

41. The authorities announced a plan to gradually tighten foreign labor limits in the services sector. The FY2019 budget announced a two-step reduction of the service sector's dependency ratio ceiling (DRC)[20] for mid- and semi-skilled foreign workers from 40 percent to 35 percent and a two-step reduction of the quota for the mid-skilled workers from 15 percent to 10 percent by 2021. The aim is to limit the reliance on foreign labor, encourage the sector to raise productivity, and support resident employment outcomes. To help businesses make the transition,

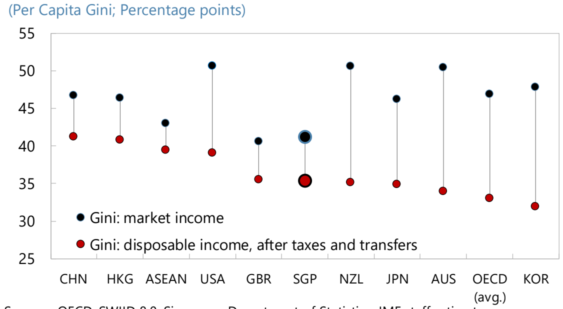
[20] The DRC refers to the maximum permitted ratio of S Pass and Work Permit holders to the total workforce that a company can employ. S Pass is a work pass for mid-skilled foreign workers, earning at least S$2,300 a month; Work Permit is for semi-skilled foreign workers. Employment Pass is for foreign professionals, managers, and executives earning at least $3,600 a month with certain qualification and is not subject to DRC controls.

the government will provide grants and digital solutions support through the Lean Enterprise Development Scheme.

42. Active labor market policies are in place to help workers adapt to employment disruption including due to economic transformation. Public employment services in Singapore play an important role in reducing frictional unemployment and improving the quality of career matching. In addition, employment subsidies are used to promote training. Those programs provide more enhanced subsidies for the professionals, managers, executives, and technicians (PMETs) who have been unemployed for 6 months or more, or of age 40 and above, as skills mismatches are found to be more pronounced in these segments. In particular, the share of PMETs among retrenched workers has been rising in recent years, and it takes longer for PMETs to find a job than for some lower-skilled workers. The government has put in place incentives for low-skilled workers (who tend to earn low wages) to remain employed by providing supplements to their work income and retirement savings. These targeted approaches to address specific vulnerabilities in different segments of the workforce underpin Singapore's strong labor market outcomes: high labor force participation, low unemployment, and low incidence of long-term unemployment (Appendix VIII). Challenges ahead are for programs to remain nimble to adapt quickly and effectively to the structural transformation and rapidly changing nature of work. Moreover, monitoring is needed to ensure that the population most at risk from automation (including women) actively participate in available programs (Box 2).

43. The authorities should continue monitoring the social impact of Singapore's economic transformation, to sustain the recent progress in addressing inequality. While disposable income inequality remains higher than peers, market income inequality in Singapore is lower than in most developed economies. This reflects the government's policies geared towards improving human capital, employment prospects, and social mobility, rather than emphasizing redistribution. The promotion of homeownership has also played an important role in increasing equity, with government grants for public housing aimed to ensure that low-income households can pay their down payment and mortgage loan from their CPF savings. Social mobility has been maintained: about 14 percent of children born to parents in the bottom 20 income percentile reach the top 20 percentile among their own cohort, compared 7.5 percent in the U.S.[21] The authorities are enhancing support in that regard, including by increasing spending on early childhood education. However, aging and technological transitions are likely to exacerbate income inequality and should continue to be monitored closely.

Gini Coefficients and Degree of Redistribution
(Per Capita Gini; Percentage points)



Sources: OECD, SWIID 8.0, Singapore Department of Statistics, IMF staff estimates.
Note: For OECD countries, the latest OECD data were used; OECD average refers to the simple average of the latest data among OECD countries; For Singapore, it shows the coefficient calculated based on square root scale for 2018 (available from SingStat); For the rest, the latest available data from the SWIID were used.

[21] See "Singapore's Social Policies: Past, Present, Future" by Deputy Prime Minister and Finance Minister at the SG 50 distinguished lecture of the Economic Society of Singapore, August 2015.

Authorities' Views

44. Singapore has been proactive in addressing the challenges brought by technological changes. The SkillsFuture initiative promotes life-long learning for Singaporeans in all stages of life. The Adapt & Grow initiative helps workers, including those whose jobs are at risk, to reskill and adapt to structural shifts in the labor market. Given the great uncertainty in technology development, the authorities emphasized that it is important to develop a labor market system that is agile to technological changes and changing industry needs, and that can be achieved through continuous interaction with the industry. The authorities also saw raising productivity growth as a major economic objective, especially in the domestically oriented sectors where the productivity level and growth lags behind that of the trade-related sectors. The reduction in the dependency ratio ceilings for the services sector should encourage firms that use mid- to low-skilled foreign labor intensely to automate and raise productivity. The government is running several programs to encourage companies, especially SMEs, to digitalize their operations and to internationalize.

45. Singapore's social policy is targeted at reducing inequality and fostering social mobility. While fiscal sustainability is an important consideration in social policies, the government over the years has enhanced social support to alleviate inequality. It has increased income supplement for low-wage Singaporean workers, implemented "Progressive Wage Model" in specific sectors, which provides career ladders with clear progression pathways for low-wage resident workers to progress in their jobs and earn higher wages, and provided more employment support for the older workers. The authorities also noted that providing generous support for lifelong learning and reskilling promotes an inclusive society. To maintain social mobility, the government has increased investment in education, especially early childhood education, to ensure its quality and affordability.

STAFF APPRAISAL

46. Singapore's macroeconomic performance has been impressive. GDP per capita more than doubled in the last twenty years and income inequality has been declining since the GFC. Policies have been aimed at boosting growth while promoting greater equity. As a highly open economy and an important financial center, Singapore is strongly influenced by developments in the region and the rest of the world.

47. Singapore's growth is expected to continue to moderate as export momentum slows. With less support from external demand, real GDP growth is projected to fall below potential. Inflationary pressures remain modest. Developments in 2018 suggest that Singapore's external position remains substantially stronger than warranted by fundamentals and desired policies. Over the medium term, modern services are expected to become increasingly important in driving growth. Policies should be geared toward addressing the challenges to growth and inequality posed by shifts in the global economy, aging, and technological change, which could also promote external rebalancing.

48. The authorities should stand ready to provide fiscal stimulus as downside risks materialize. Fiscal policy should be the first line of defense given the large buffers, and macroprudential policy could be eased while maintaining caution vis-à-vis financial stability. Higher government spending could also support external rebalancing, given significant leakages through trade as well as remittances.

49. More of Singapore's fiscal space could be deployed to meet medium- and long-term challenges. Pressures on government outlays arise from mounting age-related spending (in particular healthcare), capital spending to rejuvenate aging infrastructure and address climate change, as well as programs to help firms and workers adapt to technological change. A better grasp of their combined magnitude would help in assessing the level of desired assets over the medium term, with implications for the targeted fiscal balance, plans for government borrowing, and the need for revenue mobilization.

50. The monetary policy stance is appropriately supportive of price stability. Going forward, monetary policy should continue to be data dependent. Staff welcomes the announcement to release data on net purchases of foreign exchange, which will enhance transparency without compromising operational effectiveness of the MAS monetary policy.

51. The financial sector remains healthy with adequate buffers, but risks require continued monitoring. Singapore's large financial center is underpinned by a strong regulatory and supervisory framework. The system's strengths suggest that, under current policies, spillovers from financial sector risks to the broader macroeconomy are contained. However, the major banks' overall liquidity position is mixed—while domestic currency liquidity is comfortable, U.S. dollar liquidity coverage is vulnerable to stress conditions. Given the importance of dollar funding and liquidity for Singapore's banks and economy, strengthening banks' foreign exchange liquidity should be a priority. So far, a good balance has been struck between promoting financial innovation and preserving financial stability, investor protection, and financial integrity. Nonetheless, this is a challenge that will require continued vigilance, not least to guard against ML/TF and cyber-risk and to minimize potential reputational risk.

52. Property market cooling measures should be maintained until systemic risks subside. Sudden or large property price fluctuations pose a systemic risk to the financial sector, as also noted in the 2019 Financial Sector Stability Assessment. Staff recommends eliminating residency-based differentiation in the ABSD by unifying rates, and then phasing out the measure once systemic risks from the housing market dissipate.

53. The authorities should continue monitoring the social impact of Singapore's economic transformation. The structural reform agenda aims to raise productivity and turn Singapore into a global innovation hub through incentives to automate and innovate. The government has launched several programs to drive digitalization and technological adoption among businesses and promote lifelong learning and skill enhancement among individuals. To ensure effective implementation of these programs, greater efforts will be needed to raise awareness and incentivize the uptake of existing programs, especially among those more at risk of displacement from automation. Labor market policies should remain nimble to adapt quickly and effectively to the structural transformation and rapidly changing nature of work.

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

Box 1. 2019 FSAP Main Preliminary Conclusions

A strong and resilient financial system in Singapore is key to a successful economic performance, given the island's role as a global financial center. Against this background, the 2019 FSAP covered important aspects of the financial system, including crisis management, the macroprudential policy framework, adequacy of buffers, and Fintech issues. The results highlight the system's robustness. Although under current policies and buffers the financial sector appears resilient, continued vigilance remains necessary.

Policy and Regulatory Frameworks

Singapore's strong macroeconomic policy framework is matched by a sophisticated financial oversight framework. Through the proactive use of macroprudential policy, the MAS has demonstrated its ability and willingness to act to suppress emerging threats to financial stability. More broadly, the strong framework for financial oversight has been enhanced further in recent years, and many of the reforms address the recommendations of the 2013 FSAP. Building on this progress, the next steps should focus on enhancing the resolution framework, including by extending the new bail-in powers to senior unsecured creditors, strengthening the MAS' Resolution Unit, and developing guidelines and playbooks for the new resolution tools. More staffing resources for the oversight of the MAS Electronic Payments System will also be needed.

Vulnerabilities and Buffers

Singapore's buffers are large. They comprise a robust macroeconomic policy framework, strong public finances, effective supervision, and international reserves which can help cope with shocks.

The main parts of the financial system appear resilient even under adverse scenarios. The financial health of major Singaporean banks—in particular, their sizeable capital buffers and strong profitability—allow them to absorb the sharp increase in credit losses in severe but plausible scenarios of the FSAP's solvency stress tests. Similarly, insurance companies have strong capital positions, though stress tests point to vulnerabilities in parts of the sector

However, banks' overall liquidity position is mixed—domestic currency liquidity is comfortable, but U.S. dollar liquidity is vulnerable to stress conditions. Banks prudently rely mostly on deposits for funding. However, the systemwide loan-to-deposit ratio in foreign currency remains high at 129 percent though it has declined for the largest banks. Given the importance of dollar funding and liquidity for Singapore's banks and economy, strengthening banks' foreign exchange liquidity should be a priority.

Households and corporates appear resilient. Alternative scenarios conducted by the MAS in close collaboration with the FSAP team suggest that only a small segment of households could face repayment difficulties under stress, including because of holdings of liquid financial assets. This result cannot preclude however the likelihood that households could compress consumption to ensure mortgage repayments continue in a timely fashion under stress, with potentially large adverse impact on growth. In the corporate sector, although leverage is high, debt-at-risk appears manageable as corporates have substantial cash buffers with the median cash-to-debt ratio of 50 percent. Foreign currency denominated debt accounts for a substantial share of corporate debt, but natural and financial hedges reduce risks.

Emerging Risks

Financial innovation has amplified the risk of cyber events and the MAS is at the forefront in international efforts to reinforce cyber resiliency. The 2018 Cybersecurity Act promotes cyber security, and all banks are taking steps to strengthen their computer systems. Mitigating and staying ahead of the risks in this rapidly evolving area will remain an analytical and policy challenge.

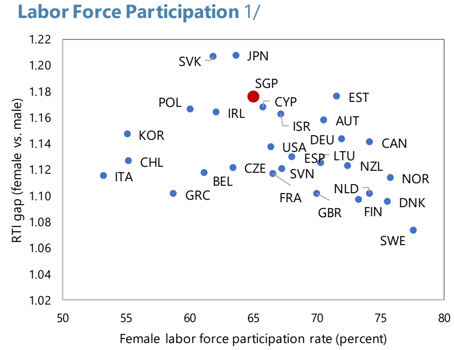
Box 2. How Vulnerable are Women's Jobs to Displacement by Technology in Singapore? [1/]

Digitalization, artificial intelligence, and machine learning hold the potential for lifting productivity and growth, but they are also changing the landscape of work. Even as new forms of work are being created, many jobs involving low- and middle-skill routine tasks are already being eliminated through automation and artificial intelligence.

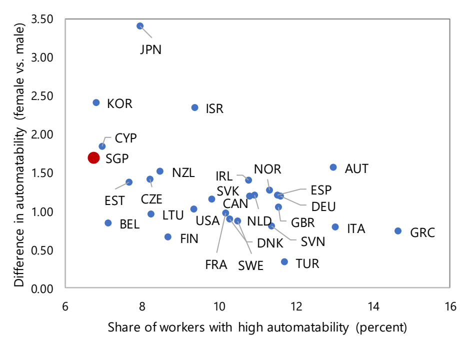
Women tend to perform more routine tasks than men, increasing their exposure to automation. Based on individual-level data on task composition at work for 30 countries, Brussevich and others (2018) estimate the proportion of the female working population that is at risk of being displaced by automation given the current state of technology. They find that women, on average, perform more routine tasks than men—tasks that are more prone to automation. In Singapore, the routine task intensity (RTI) index level of female workers is considerably higher than in other countries in the sample (text figure).[2/]

Women have a higher average probability of automation than men. The probability of automation is estimated at the level of each individual worker using detailed information on worker characteristics and task composition at work. In Singapore, the probability of automation among women is estimated at 36 percent, 6 percent higher than among men. Moreover, close to 10 percent of women in Singapore are at high risk for automation (workers with more than 70 percent probability of automation), compared to 5 percent in the case of men. While the share of workers with high automatability is relatively lower in Singapore, the gender difference is larger than in other countries (text figure).

Routine Task Intensity Gap and Female Labor Force Participation 1/



Gender Gap in High Risk of Automation 2/



Source: Brussevich and others (2018), "Gender, Technology and the Future of Work", IMF Staff Discussion Note No. 18/07.
1/ The Routine Task Intensity (RTI) index is calculated for the job tasks of individual workers, evaluating the relative importance of abstract skills (such as reasoning and interpersonal communication) and of non-routine manual skills against the importance of routine tasks that can be easily automated. The RTI gap is the average RTI for women as a share of the average RTI for men, by country.
2/ The probability of automation is estimated by Brussevich and others (2018) using an expectation-maximization algorithm that relates the individual characteristics (age, education, training, among others) and job characteristics to occupation level risk of automation. High automatability is defined as having probability of automation >=0.7. Difference in automatability = (share of females with high automatablity)/(share of males with high automatability).

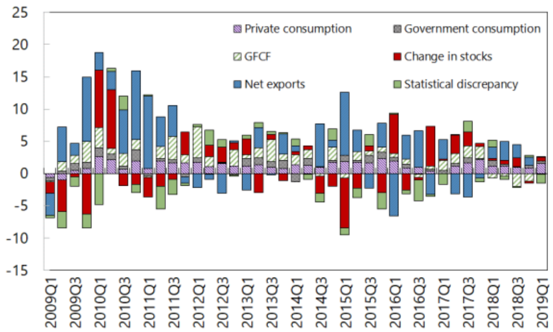
1/ Based on Brussevich, M., E. Dabla-Norris, C. Kamunge, P. Karnane, s. Khalid, and K. Kochar, "Gender, Technology and Future of Work", IMF Staff Discussion Note No. 18/07.
2/ The RTI index is constructed at the individual level using task composition at work of each PIAAC respondent, evaluating the relative importance of abstract skills (such as reasoning and interpersonal communication) and of non-routine manual skills against the importance of routine tasks that can be easily automated. In contrast to most existing studies that construct RTI at the occupational level, this approach that relies on the RTI at the individual level allows for (i) workers to perform different tasks within occupations across countries; and (ii) workers to have access to different technologies across countries to perform their tasks.

Figure 1. Singapore: Real Sector Developments

Growth moderated in 2018. External demand supported growth, while domestic demand was subdued.

Contribution to Real GDP Growth by Expenditure

(In percent, year-on-year)

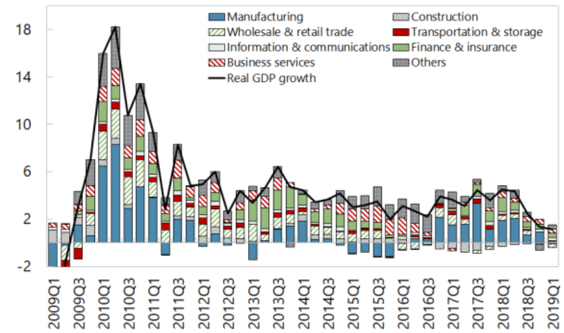


Sources: CEIC Data Company Ltd.; and IMF staff calculations.

The manufacturing sector remains a key driver for growth, but its contribution has waned…

Contribution to Real GDP Growth by Industry

(In percent, year-on-year)

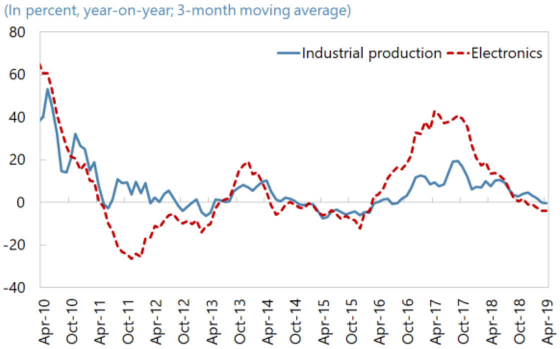


Sources: CEIC Data Company Ltd.; and IMF staff calculations.

… reflecting the deceleration in electronics production, as the global electronics cycle matured.

Industrial Production

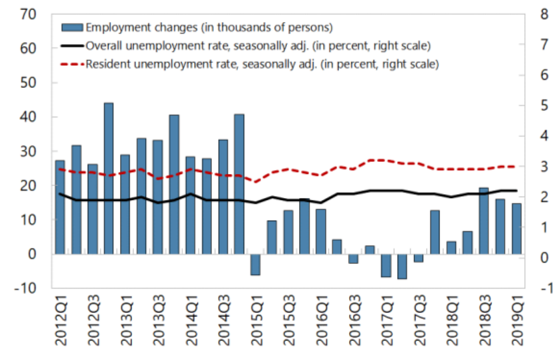
(In percent, year-on-year; 3-month moving average)



Source: Haver Analytics.

Overall labor market conditions improved as employment continued to grow.

Employment and Unemployment

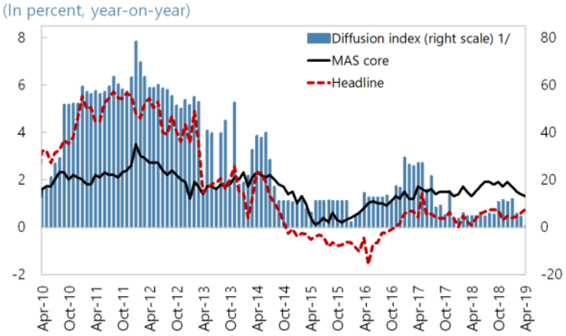


Sources: CEIC Data Co. Ltd.; and IMF staff calculations.

The official measure of core inflation remains moderate.

Singapore: Consumer Price Inflation

(In percent, year-on-year)



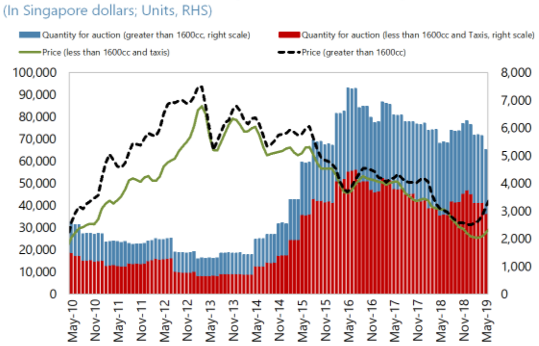
Sources: CEIC Data Co. Ltd.; and IMF staff calculations.

1/ Share in the CPI basket of components for which inflation exceeds 3 percent.

Declining prices of car ownership certificates in 2018 have contributed to downward pressure on headline inflation but have turned around in 2019.

Car Certificates of Ownership, Price and Quantity

(In Singapore dollars; Units, RHS)

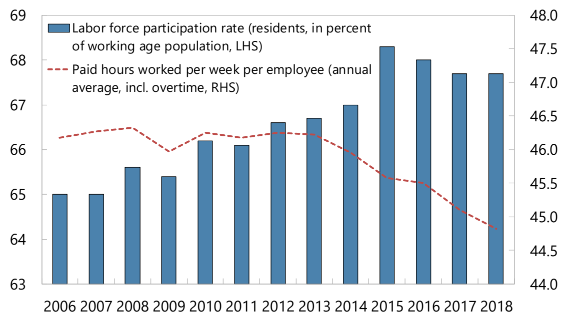


Source: CEIC Data Co. Ltd.

Figure 2. Singapore: Labor Market Developments

Residents' labor force participation remains close to the 2015 high.

Labor Force Participation Rate and Hours Worked

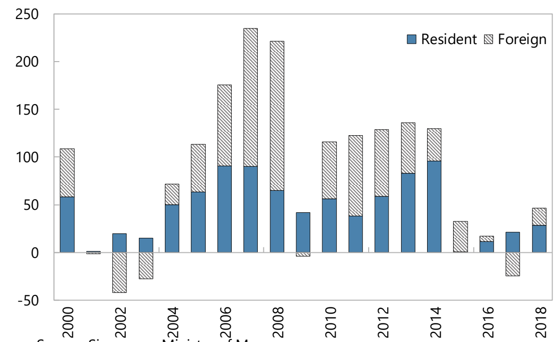


Sources: Singapore Ministry of Manpower; and IMF staff calculations.
1/ Labor force participation data are as of mid-year.

Employment increased for both residents and foreign workers in 2018.

Change in Employment by Residency

(In thousands)

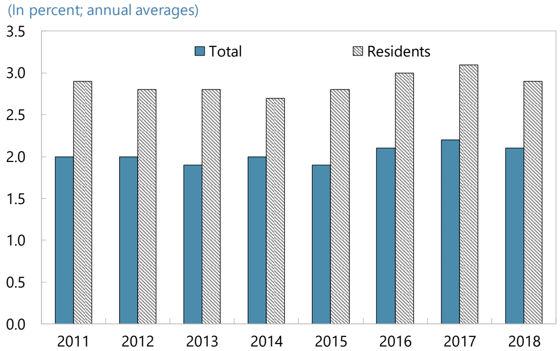


Source: Singapore, Ministry of Manpower.

The average unemployment rate fell in 2018.

Unemployment Rate: Total and Residents

(In percent; annual averages)

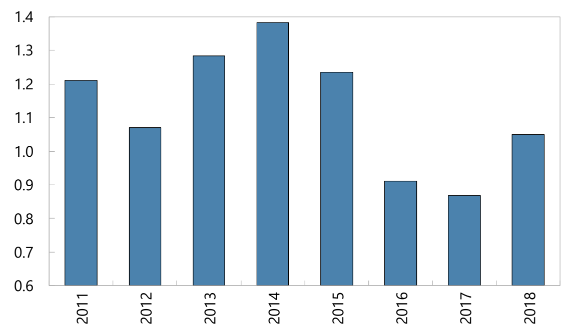


Source: Singapore, Ministry of Manpower.

The labor market became tighter in 2018.

Job Vacancy to Unemployed Person Ratio

(Seasonally adjusted; annual averages for yearly data)

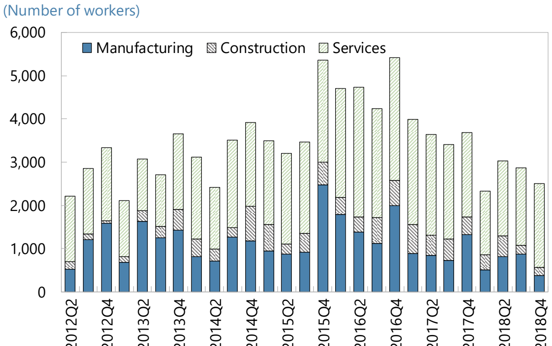


Source: Singapore, Ministry of Manpower.

The number of retrenched workers remained relatively low.

Retrenchment by Sector

(Number of workers)

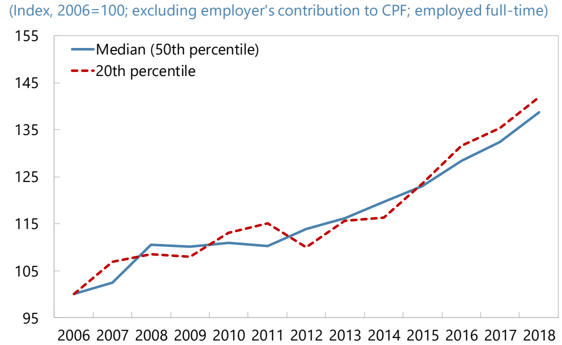


Source: Singapore, Ministry of Manpower.

Real income from work continued to rise.

Gross Real Income from Work for Citizens

(Index, 2006=100; excluding employer's contribution to CPF; employed full-time)



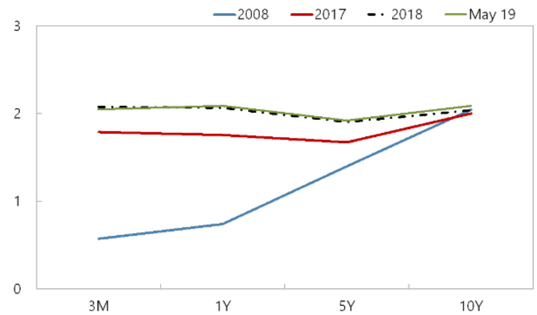
Sources: Singapore, Ministry of Manpower; and IMF staff calculations.

Figure 3. Singapore: Monetary and Financial Sector Developments

The treasury yield curve has flattened further in 2018.

Government Bond Yields

(In percent, end of period)

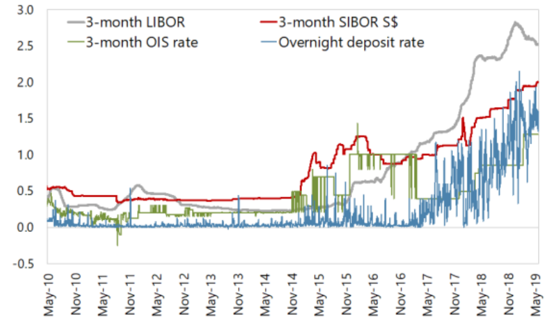


Source: Bloomberg L.P.

With a rise in global rates, money market rates in Singapore have moved up.

Interest Rates

(In percent)

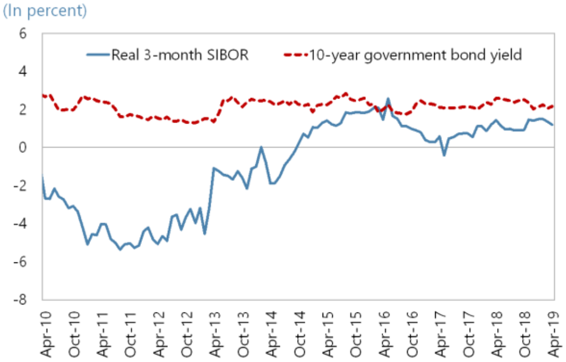


Source: Bloomberg L.P.

The government bond yields are largely stable.

Real Interest Rate and Nominal Government Bond Yield

(In percent)

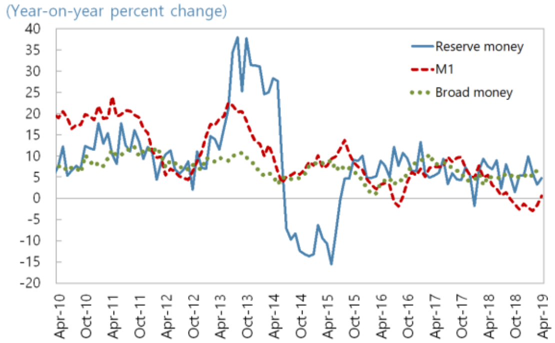


Sources: Bloomberg LP; and CEIC Data Company Ltd; and IMF staff calculations.

Broad money growth has been stable.

Monetary Aggregates

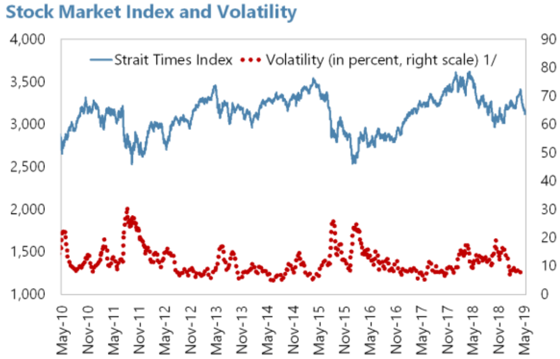
(Year-on-year percent change)



Sources: CEIC Data Company Ltd; and IMF staff calculations.

The stock market declined with higher volatility in 2018 but the index increased in Q1 2019.

Stock Market Index and Volatility

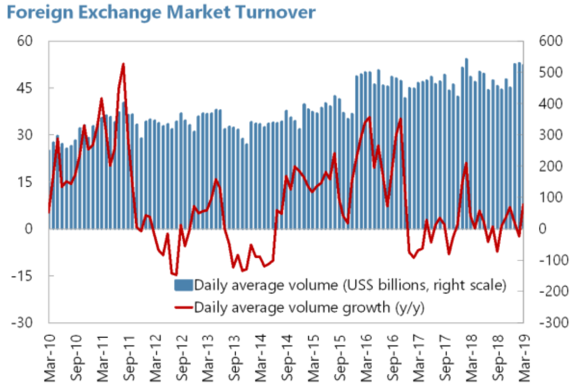


Source: Bloomberg LP.

1/ Standard deviation of 1 year moving average of daily equity price change in log levels.

The foreign exchange market turnover was broadly stable in 2018.

Foreign Exchange Market Turnover

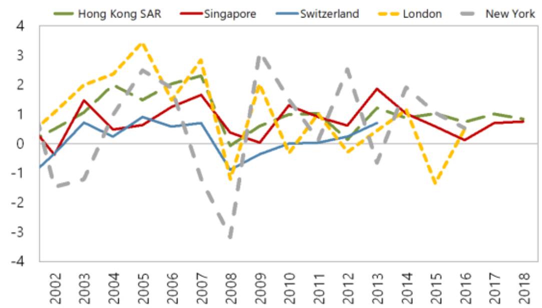


Source: CEIC Data Co. Ltd.

Figure 3. Singapore: Monetary and Financial Sector Developments (Concluded)

The financial services sector has on average contributed about 1 percentage point to total growth over the past decade and stayed firm overall in 2018

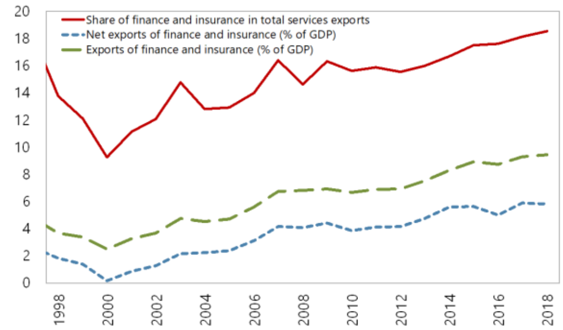
Contribution of Financial Services Sector to Growth 1/
(In percentage points)



Sources: CEIC Data Co., Ltd.; and IMF staff calculations.
1/ Latest available data for London and New York are as of 2016.

Financial services exports have increased gradually and reached 8.9 percent of GDP in 2018.

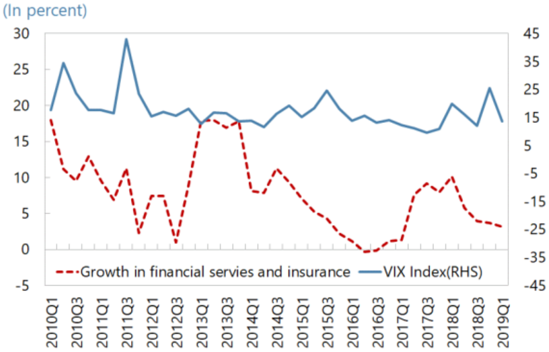
Finance and Insurance Services Exports
(In percent)



Sources: CEIC Data Co., Ltd.; and IMF staff calculations.

Growth in financial services moderated in H2 2018, as global risk sentiment worsened.

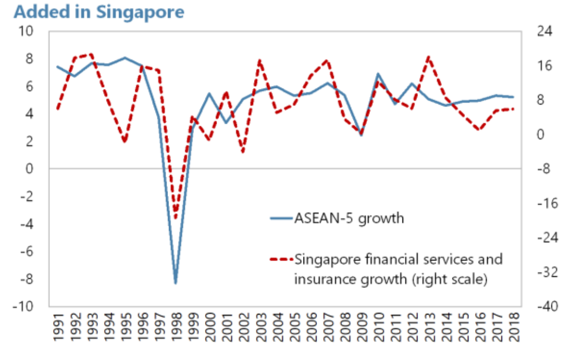
Growth in Financial Services Sector and the VIX Index
(In percent)



Sources: Bloomberg L.P.; CEIC Data Co., Ltd.; and IMF staff calculations.

Financial services activity in Singapore has been usually correlated with economic activity in ASEAN-5 countries.

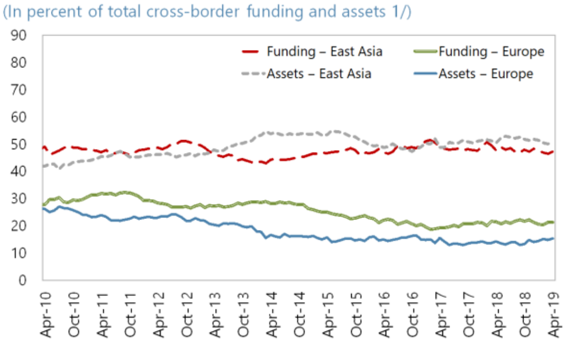
Growth in ASEAN-5 and Financial Services and Insurance Value-Added in Singapore



Sources: CEIC Data Co., Ltd.; and IMF staff calculations.

Cross-border banking activity in Singapore is dominated by East-Asian and European regions.

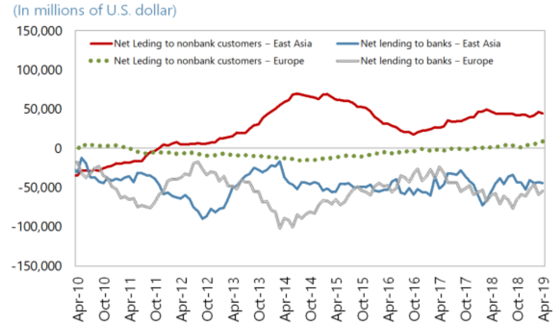
Share of East Asia and Europe in Asian Dollar Market, 2010-2019
(In percent of total cross-border funding and assets 1/)



Sources: Monetary Authority of Singapore.; and IMF staff calculations.
1/ Cross-border funding/assets include nonbank deposits/loans to nonbank clients and amounts due to/from banks.

Net lending to nonbank customers in East Asia was stable in 2018.

Asian Dollar Market: Composition of Lending/Funding Positions For East Asia and Europe
(In millions of U.S. dollar)

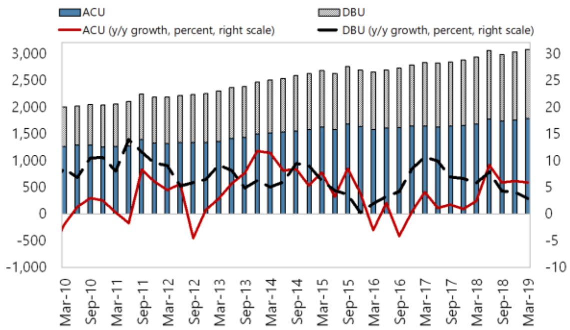


Sources: Monetary Authority of Singapore; and IMF staff calculations.

Figure 4. Singapore: Banking Sector Developments

Banking sector assets growth has moderated in H2 2018.

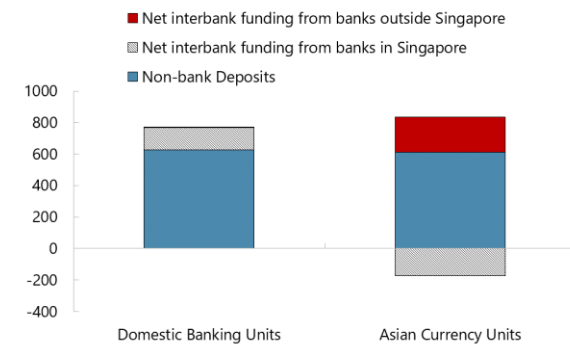
Banking Sector, Combined Assets
(In billions of Singapore dollars)



Source: CEIC Data Company Ltd.; and IMF staff calculations.

Non-bank deposits and interbank funding from outside Singapore are important funding sources for banks.

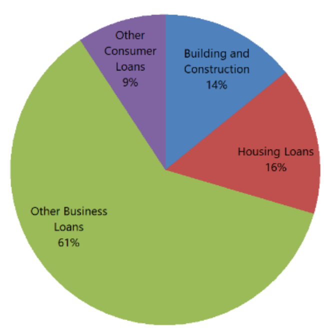
Funding Structure of the Banking System, 2018
(In billions of Singapore dollars)



Sources: Haver Analytics, and IMF staff calculations.

Property-market related loans (housing loans and loans to the building and construction sectors) account for about 30 percent of total domestic non-bank loans.

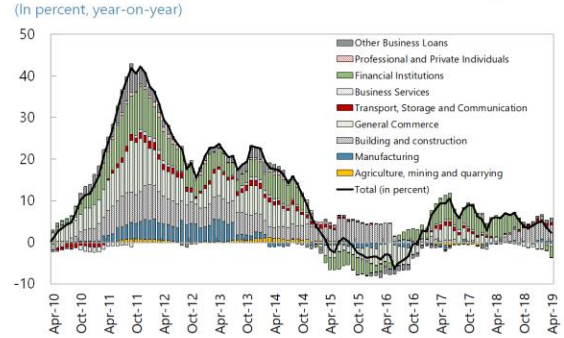
Nonbank Loans by Sector, Apr 2019
(In percent of total)



Sources: CEIC Data Co. Ltd.; and IMF staff calculations.

Business loans to the construction sector grew fast in 2018 while loans to other sectors were stable.

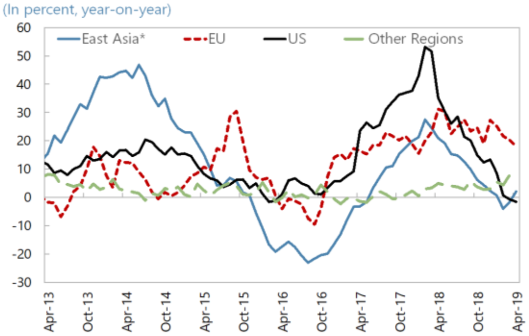
Contribution to Domestic Bank Loans to Business by Sector
(In percent, year-on-year)



Sources: CEIC Data Co. Ltd.; and IMF staff calculations.

Cross-border loans to nonbanks in US and East Asia slowed in 2018, while the demand from EU remained strong.

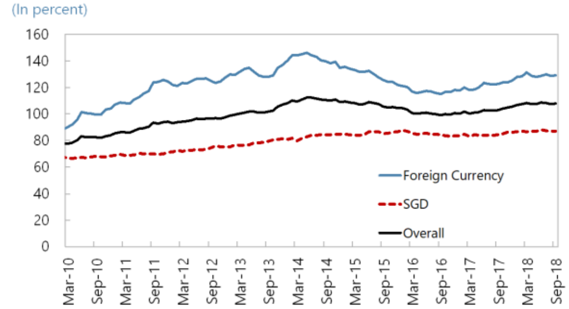
Nonbank Lending by Region
(In percent, year-on-year)



Sources: CEIC Data Co. Ltd.
*Consists of China, Hong Kong, Japan, South Korea, Taiwan and ASEAN (excluding Singapore).

The banking sector's foreign currency loan to deposit ratio continued to increase moderately.

Loan to Deposit Ratio by Currency 1/
(In percent)



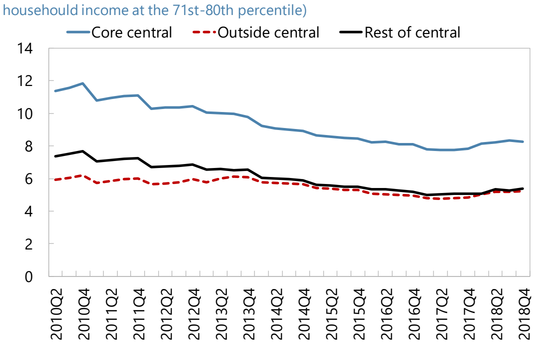
Source: 2018 Financial Stability Review, Monetary Authority of Singapore.
Note: 1/ This covers loans extended by the banking sector, excluding interbank lending.

Figure 5. Singapore: Housing Market Developments

The house price-to-income ratio inched up in 2018, with the turnaround of property prices since end-2017.

Median Private Housing Prices

(Price per sq. ft of non-landed units in each region, as a share of overall annual household income at the 71st-80th percentile)

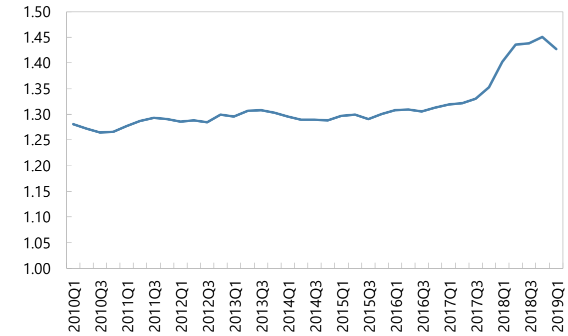


Sources: CEIC Data Co. LTD., and IMF staff calculation.

The house price-to-rent ratio has also increased.

House Price to Rent Ratio

(Index; 2009Q1=100)

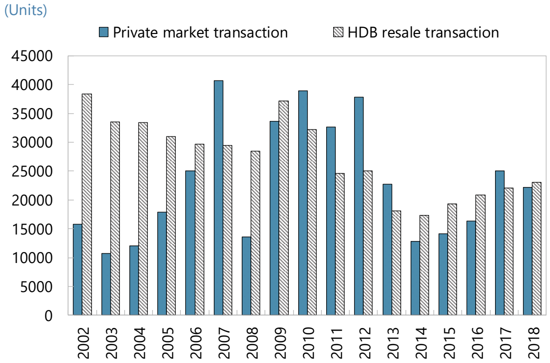


Source: CEIC Data Co. LTD, and IMF staff calculation.

Transactions fell in 2018, especially in the private market.

Private and Public Residential Transaction

(Units)

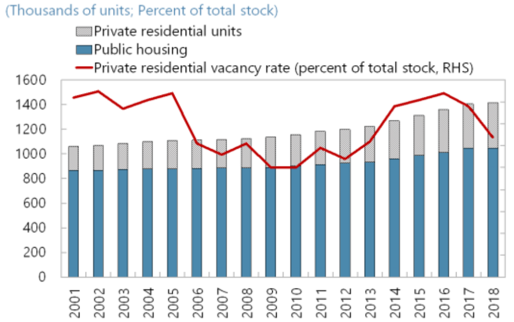


Sources: CEIC Data Co. Ltd. and IMF staff calculations.

The vacancy ratio in the private market fell in 2018.

Housing Stock and Vacancy

(Thousands of units; Percent of total stock)

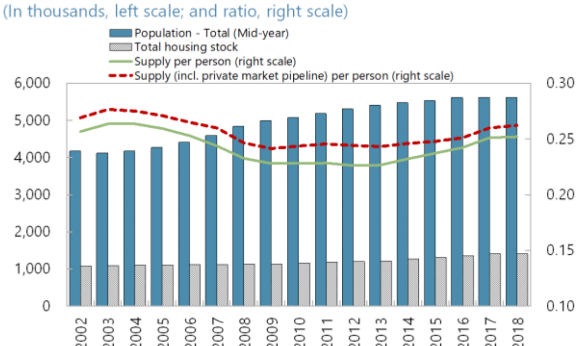


Sources: CEIC Data Co. Ltd., and IMF staff calculations.
Note: Public housing stock for 2018 is an estimate assuming no changes from 2017.

Supply bottlenecks owing to rapid population growth have somewhat eased.

Housing Supply and Population

(In thousands, left scale; and ratio, right scale)

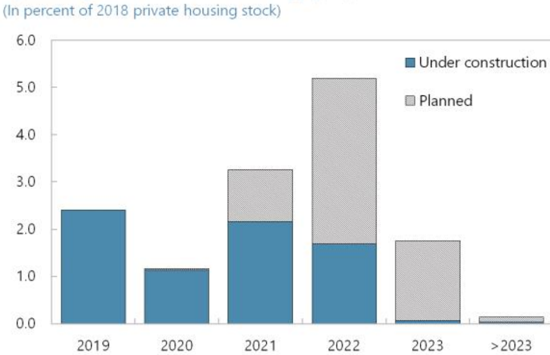


Sources: CEIC Data Co., Ltd.; and IMF staff calculations.
Note: Public housing stock for 2018 is an estimate assuming no changes from 2017.

Housing supply is expected to ease further.

Upcoming Private Residential Supply Pipeline, 2018

(In percent of 2018 private housing stock)

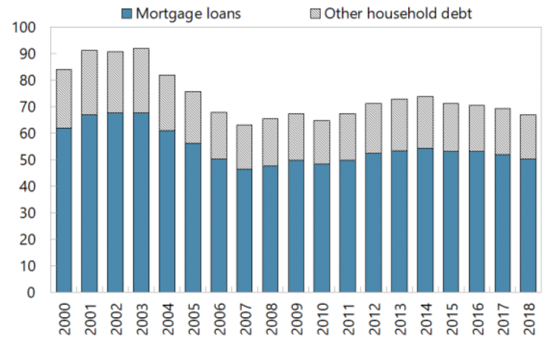


Source: Singapore, Urban Redevelopment Authority (URA).

Figure 5. Singapore: Housing Market Developments (Concluded)

Household debts, including housing loans, have stabilized since 2015.

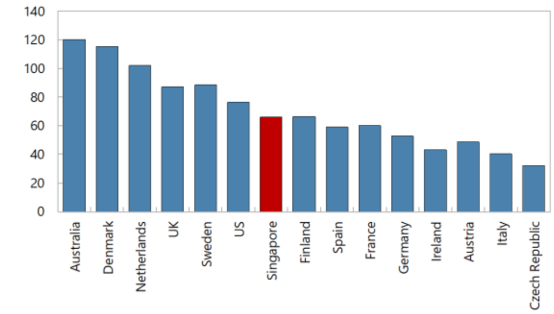
Household Debt
(In percent of GDP)



Sources: Haver Analytics, and IMF staff calculations.

Though household debt-to-GDP ratio is elevated, …

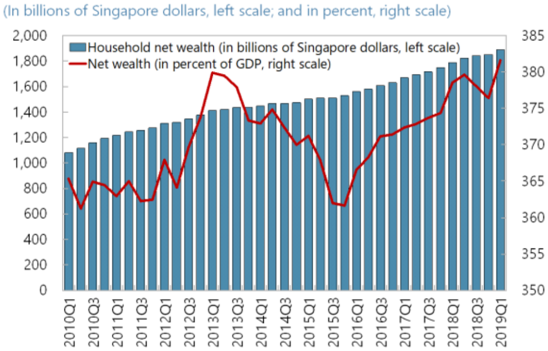
Household Debt
(In percent of GDP)



Sources: Bank for International Settlements; and Singapore Department of Statistics.
Note: Latest data for Singapore is 2019Q1 and for other countries 2018Q4.

… households' balance sheet is strong with their total net worth standing at about 380 percent of GDP, …

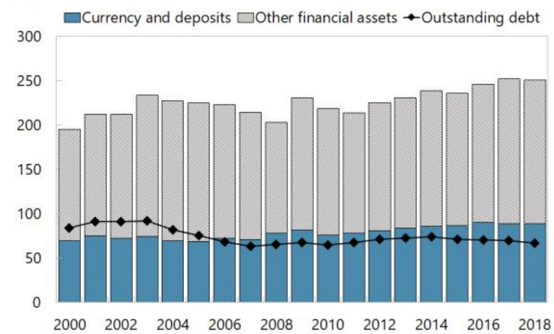
Household Net Wealth
(In billions of Singapore dollars, left scale; and in percent, right scale)



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

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

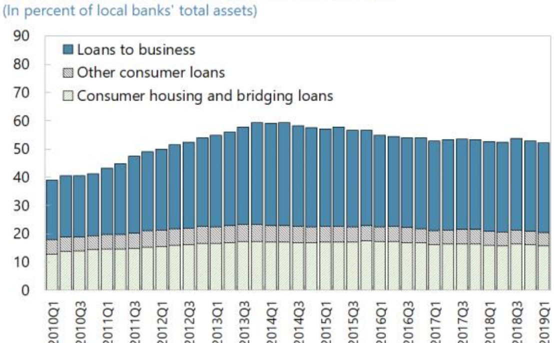
Household Financial Wealth and Debt Outstanding
(In percent of GDP)



Sources: Haver Analytics; and IMF staff calculations.

Banks' exposure to private housing loans has been stable.

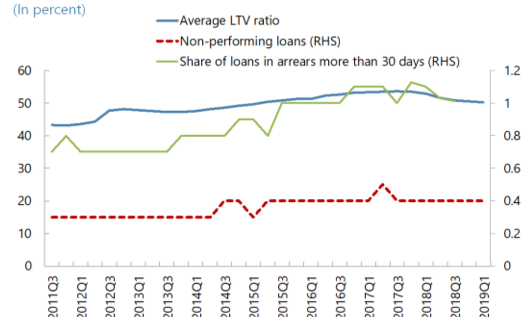
Local Banks' Loans by Type of Borrowers
(In percent of local banks' total assets)



Sources: Haver Analytics; and IMF staff calculations.

The quality of housing loans remains relatively strong.

Housing Loans
(In percent)

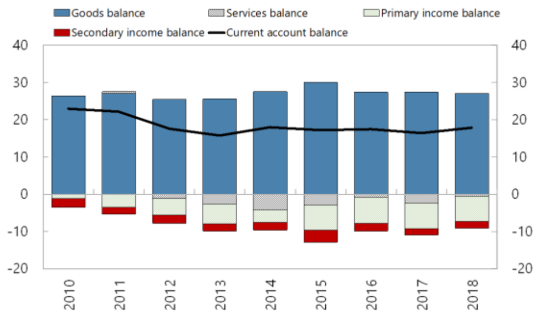


Source: 2017 Financial Stability Review, Monetary Authority of Singapore; CEIC Data Co. Ltd.

Figure 6. Singapore: External Sector

The current account surplus has averaged about 17 percent of GDP over 2015-18, lower than its post-GFC peak of 23 percent in 2010.

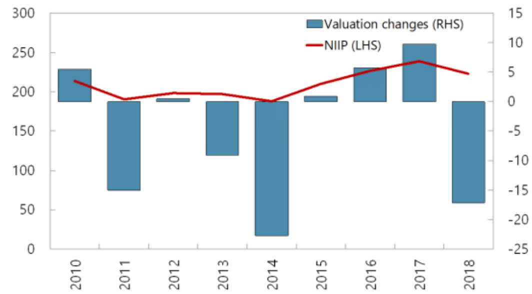
Current Account Balance
(In percent of GDP)



Source: Haver Analytics.

NIIP amounts to 223 percent of GDP in 2018, lower than in 2017 due to negative valuation effects.

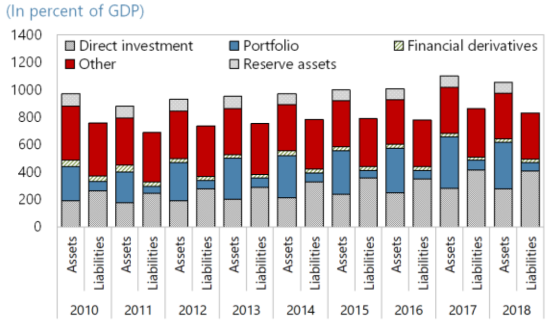
NIIP Position and Valuation Changes
(In percent of GDP)



Sources: Singapore, Department of Statistics; CEIC Data Co. Ltd.; and IMF staff calculations.
Note: Ratio to GDP is based on US dollar values.

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

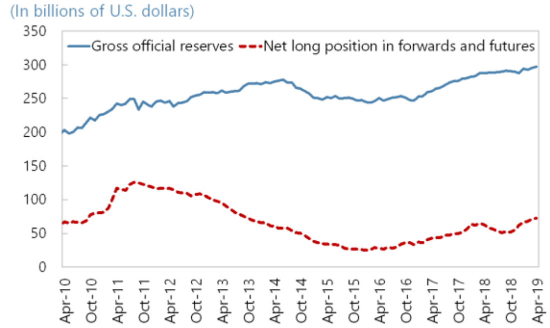
International Investment Position
(In percent of GDP)



Sources: Singapore, Department of Statistics; Haver Analytics; and IMF staff calculations.
Note: Ratio to GDP is based on US dollar values.

Gross official reserves continued to increase moderately, while MAS' net long FX position in the forwards and futures market was broadly stable.

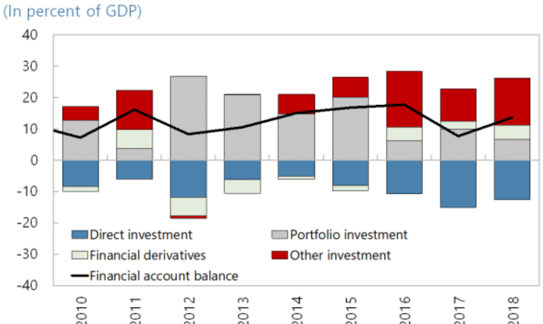
Central Bank: Gross Official Reserves and Net Foreign Currency Position in Forwards and Futures
(In billions of U.S. dollars)



Source: Haver Analytics.

The financial account is characterized by net FDI inflows and net portfolio outflows. Net FDI inflows narrowed in 2018.

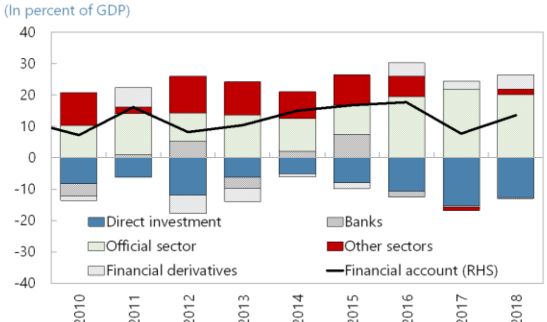
Financial Account Balance by Type of Investment
(In percent of GDP)



Sources: CEIC Data Co. Ltd.; and IMF Staff calculations.
Note: Under the BPM6 methodology, a negative entry implies net inflows.

Official flows account for most of the financial outflows.

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

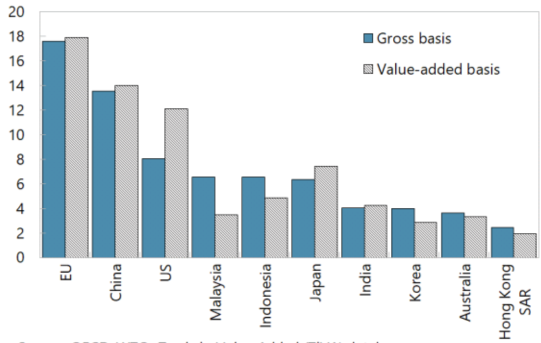


Sources: CEIC Data Co. Ltd.; and IMF staff calculations.
Note: Under the BPM6 methodology, a negative entry implies net inflows.

Figure 7. Singapore: Spillovers

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

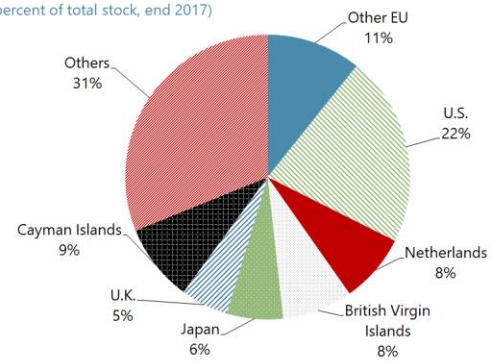
Value Added in Foreign Final Demand versus Gross Exports
(In percent of total, 2015)



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

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

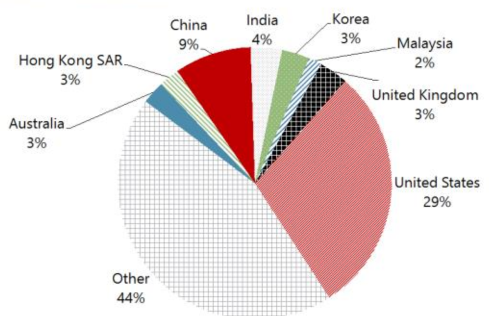
FDI to Singapore by Source Country
(In percent of total stock, end 2017)



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

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.

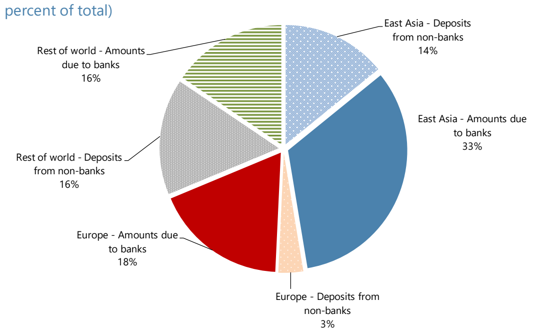
Composition of Singapore's Portfolio Investment Assets
(In percent of total, Dec 2017)



Source: IMF, *Coordinated Portfolio Investment Survey (CPIS)*.

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

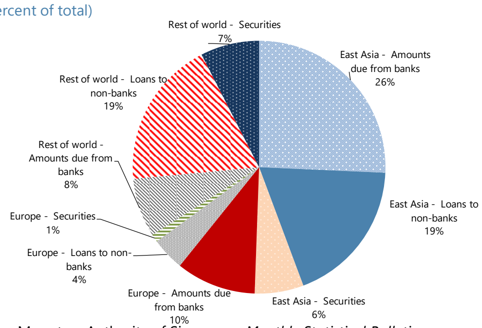
ACU Funding Sources by Region, Apr 2019 1/
(In percent of total)



Source: Monetary Authority of Singapore, *Monthly Statistical Bulletin*.
1/ East Asia Consists of China, Hong Kong SAR, Japan, South Korea, Taiwan Province of China and ASEAN (excluding Singapore).

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

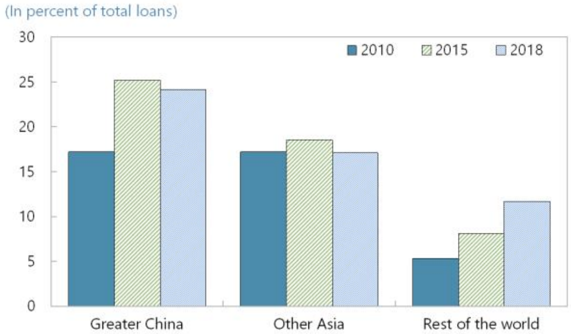
ACU Use of Funds by Region, Apr 2019 1/
(In percent of total)



Source: Monetary Authority of Singapore, *Monthly Statistical Bulletin.*
1/ East Asia Consists of China, Hong Kong SAR, Japan, South Korea, Taiwan Province of China and ASEAN (excluding Singapore).

Cross-border exposures of domestic banks to Greater China and other Asian economies remain near their post-GFC highs, exposing Singapore to the risk of regional spillover.

Cross-Border Exposures of Domestic Banks 1/
(In percent of total loans)



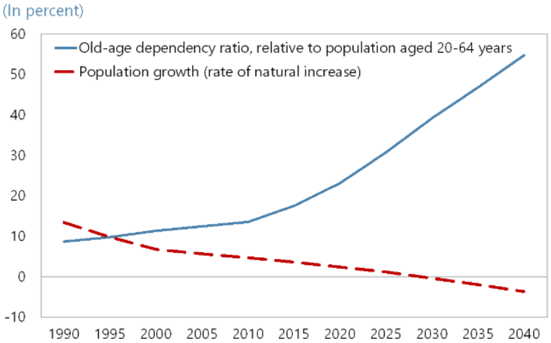
Sources: Banks' financial reports and annual reports; and IMF staff estimates.
1/ Classification varies by bank. OCBC, location of credit risk; DBS, location of borrower incorporation; and UOB, booking location.

Figure 8. Singapore: Demographic Transition

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

Old-Age Dependency Ratio and Population Growth

(In percent)

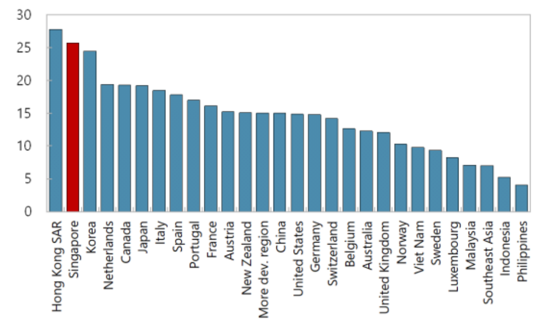


Source: United Nations, World Population Prospects, 2017 Revisions.

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

Aging Speed Comparison: Change Between 2010 and 2030

(In percent)

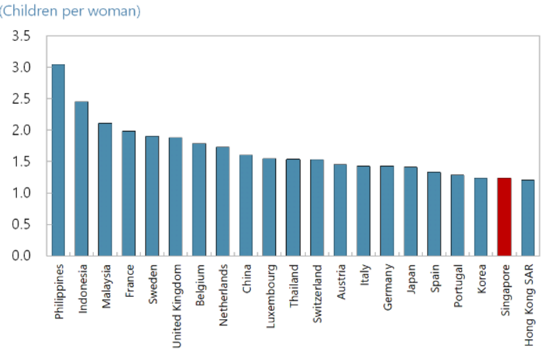


Source: United Nations, World Population Prospects, 2017 Revisions.

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

Total Fertility, 2010-2015

(Children per woman)

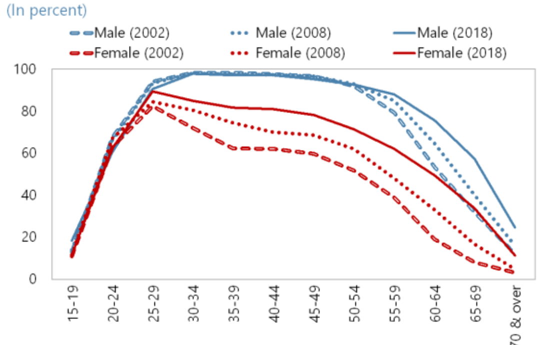


Source: United Nations, World Population Prospects, 2017 Revisions.

Labor force participation rates have risen over the years, particularly for the elderly and women in prime working age. But there is scope for further increase in participation rates for prime working age women.

Resident Labor Force Participation Rate by Gender and Age

(In percent)

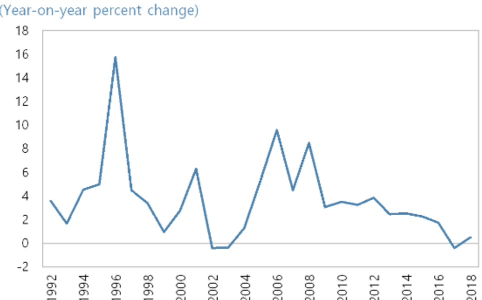


Source: CEIC Data Co. Ltd.

Labor force growth picked up in 2018, following a trend deceleration in recent years.

Labor Force Growth Rate

(Year-on-year percent change)

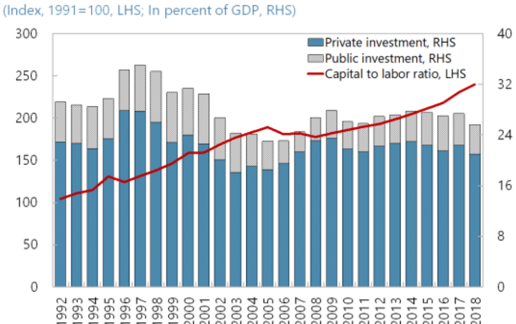


Sources: CEIC Data Co. Ltd.; and IMF staff calculations.

Investment, both private and public, fell in 2018.

Capital to Labor Ratio and Investment

(Index, 1991=100, LHS; In percent of GDP, RHS)

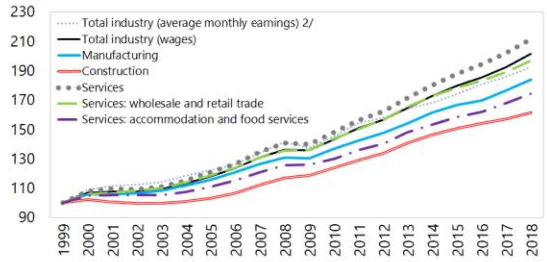


Sources: Singapore, Department of Statistics; CEIC Data Co. Ltd.; and Haver Analytics.

Figure 9. Singapore: Social and Equality Indicators

Industry-wide total wages continued to steadily increase, by 4.6 percent in 2018.

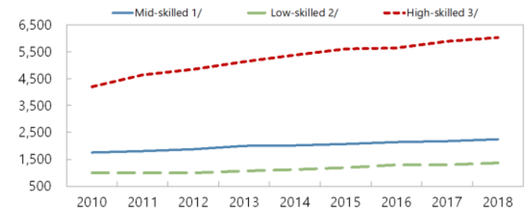
Nominal Wages by Industry 1/
(Index 1999=100; excluding employers' contributions to CPF)



Sources: Haver Analytics; and IMF staff calculations.
1/ Based on wage changes granted by private sector establishments (with at least 10 employees) to full-time resident employees with continuous employment of at least a year. Wages are inclusive of bonuses.
2/ Average monthly earnings, unlike total wages, covers part-time resident employees and includes overtime pay, commissions, and allowances.

Median wages for workers at all skill levels rose steadily. The rise was fastest among low-skilled workers.

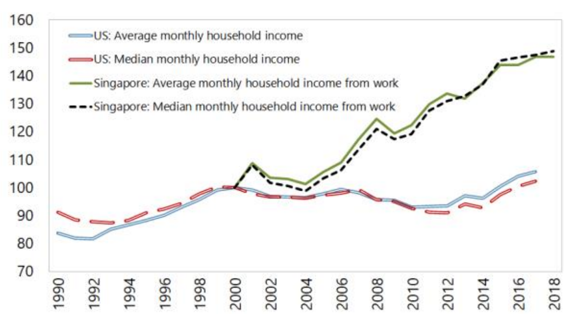
Weighted Gross Monthly Median Wages
(In Singapore Dollars; full-time employed residents, excluding employer's CPF contributions)



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

Median household income continues to rise.

The U.S. and Singapore: Mean and Median Real Household Income 1/
(2000=100)



Sources: Singapore, Department of Statistics; Haver Analytics; and IMF staff calculations.
1/ For Singapore data on resident households and includes contributions from employers to CPF. Data for the U.S. are as of 2016.

While largely stagnant during 2000–06, real incomes of lower income groups have increased at a faster pace in the last decade.

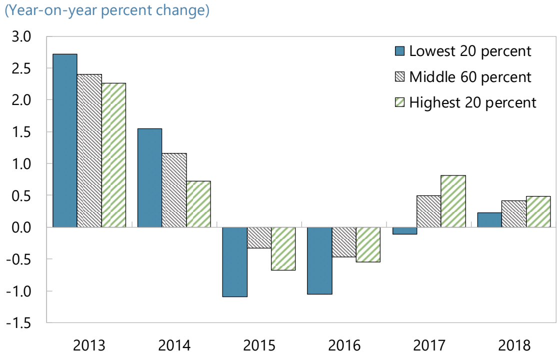
Average Monthly Real Household Income by Decile 1/

Decile	2000	2018	Cumulative Change (in percent) 2000–2018	2000–2006	2006–2018
Total	1,735	2,971	71.2	17.6	45.7
1st-10th	315	407	29.3	-6.6	38.5
11th-20th	537	803	49.6	1.1	48.0
21st-30th	720	1,186	64.7	9.2	50.8
31st-40th	911	1,523	67.2	10.6	51.2
41st-50th	1,119	1,890	68.9	12.0	50.8
51st-60th	1,366	2,309	69.1	13.4	49.1
61st-70th	1,669	2,850	70.8	14.8	48.7
71st-80th	2,093	3,621	73.0	17.2	47.7
81st-90th	2,821	5,207	84.6	25.1	47.6
91st-100th	5,801	10,782	85.9	31.1	41.8
Memo:					
Top dec/bottom dec	18.4	26.5			

1/ Income from work per household member in employed households. 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).

Lower rate of inflation has helped everybody, but the bottom 20 percent has gained the most in recent years.

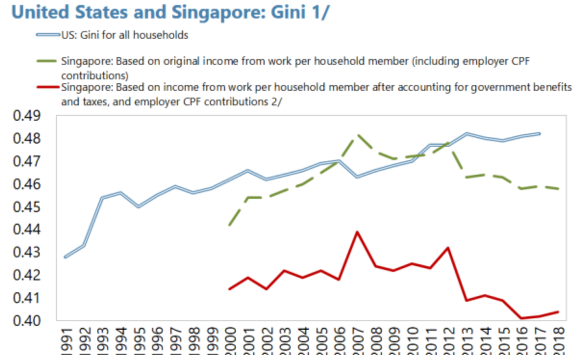
Inflation by Income Group
(Year-on-year percent change)



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

Government policies (taxes and benefit payments) have also contributed to a reduction in inequality.

United States and Singapore: Gini 1/



Sources: Singapore, Department of Statistics; and Haver Analytics.
1/ Data for the U.S. are as of 2016.
2/ Gini coefficient for 2018 is preliminary.

Table 1. Singapore: Selected Economic and Financial Indicators, 2014–20

Nominal GDP (2018): US$364 billion
Population (2018): 5.64 million
GDP per capita (2018): US$64,567
Main goods exports (2018, percent of total exports): Electronic products (30 percent); mineral fuels (19 percent); and chemical products (14 percent).
Top three destinations for goods exports (2018, percent of gross goods exports): China (12.2 percent); Hong Kong SAR (11.8 percent); and Malaysia (10.9 percent).

						Projections	
	2014	2015	2016	2017	2018	2019	2020
Growth (percentage change)							
Real GDP	3.9	2.9	3.0	3.7	3.1	2.0	2.3
Total domestic demand	2.1	0.4	5.5	6.5	1.1	3.3	2.0
Final domestic demand	3.4	4.4	2.3	4.6	0.5	3.0	2.1
Consumption	3.0	5.9	2.9	3.6	3.0	3.0	2.6
Private consumption	3.6	5.2	2.7	3.4	2.7	2.7	2.7
Gross capital formation	0.8	-8.6	10.2	11.6	-2.1	3.8	1.0
Gross fixed investment	4.2	2.0	1.1	6.4	-4.0	2.8	1.1
Change in inventories (contribution to GDP growth, percentage points)	-0.9	-3.0	2.3	1.4	0.5	0.3	0.0
Net exports (contribution to GDP growth, percentage points)	2.1	3.6	0.0	-1.1	2.0	0.1	0.7
Saving and investment (percent of GDP)							
Gross national saving	47.4	42.6	44.2	44.5	44.5	43.5	43.3
Gross domestic investment	29.4	25.4	26.7	28.2	26.6	27.7	27.5
Inflation and unemployment (period average, percent)							
CPI inflation	1.0	-0.5	-0.5	0.6	0.4	1.0	1.3
CPI inflation, excluding food and energy 1/	0.6	-0.7	-0.9	-0.1	-0.2	0.8	1.2
MAS core inflation 1/	1.9	0.5	0.9	1.5	1.7	1.5	1.7
Unemployment rate	2.0	1.9	2.1	2.2	2.1	2.0	2.0
Central government finances (percent of GDP) 2/							
Revenue	17.1	17.3	18.5	19.1	18.5	18.1	18.2
Expenditure	12.2	14.0	15.0	14.2	14.4	14.1	14.2
Net lending/borrowing	4.9	3.3	3.5	5.0	4.1	4.0	4.0
Net lending/borrowing, excluding nonproduced assets	1.1	-0.3	0.7	1.8	1.0	0.8	0.7
Primary balance 3/	-1.1	-2.5	-2.5	-1.4	-2.3	-2.7	-2.9
Money and credit (end of period, percent change)							
Broad money (M2)	7.6	4.0	8.4	4.1	5.1	3.3	3.6
Credit to private sector	7.0	2.5	5.5	3.6	4.9	2.0	2.3
Three-month S$ SIBOR rate (percent)	0.5	1.2	1.0	1.5	1.9	…	…
Balance of payments (US$ billions)							
Current account balance	56.5	53.0	55.7	55.4	65.1	58.7	61.2
(In percent of GDP)	18.0	17.2	17.5	16.4	17.9	15.8	15.8
Goods balance	86.7	92.6	87.1	92.5	98.4	96.5	100.0
Exports, f.o.b.	450.6	396.1	371.4	408.5	459.7	469.3	484.6
Imports, f.o.b.	-363.9	-303.7	-284.3	-316.0	-361.4	-372.8	-384.6
Financial account balance 4/	47.3	51.5	56.5	26.0	49.4	52.7	53.3
Overall balance 4/	6.8	1.1	-1.8	27.4	12.5	6.0	8.0
Gross official reserves (US$ billions) 5/	256.9	247.7	246.6	279.9	287.7	260.9	270.9
(In months of imports) 6/	6.6	6.7	6.0	6.2	6.1	5.4	5.4
Singapore dollar/U.S. dollar exchange rate (period average)	1.27	1.37	1.38	1.38	1.35	…	…
Nominal effective exchange rate (percentage change) 7/	0.6	-0.9	1.9	0.0	1.0	…	…
Real effective exchange rate (percentage change) 7/	-0.6	-2.7	-0.2	-1.2	-0.5	…	…
Memorandum items:							
Nominal GDP (in billions of Singapore Dollars)	398.9	423.4	439.4	467.3	491.2	507.2	525.6
Growth (%)	3.7	6.1	3.8	6.3	5.1	3.3	3.6

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

1/ IMF staff estimates, showing projections from 2019. MAS core inflation excludes the costs of accommodation and private road transport.
2/ IMF staff estimates on a calendar year basis following GFSM 2014.
3/ Net lending/borrowing excluding net investment return contribution (NIRC).
4/ Following the BPM6 sign convention, a positive entry implies net outflows.
5/ The projections for official reserves for 2019 and onward reflect the transfers of S$45 billion from the official foreign reserves to GIC Pte. Ltd., as announced in May 8, 2019.
6/ In months of following year's imports of goods and services.
7/ Increase is an appreciation.

Table 2. Singapore: Balance of Payments, 2014–20 1/

	2014	2015	2016	2017	2018	Projections 2019	2020
				(In billions of U.S. dollars)			
Current account balance	56.5	53.0	55.7	55.4	65.1	58.7	61.2
Goods balance	86.7	92.6	87.1	92.5	98.4	96.5	100.0
Exports, f.o.b.	450.6	396.1	371.4	408.5	459.7	469.3	484.6
Imports, f.o.b.	-363.9	-303.7	-284.3	-316.0	-361.4	-372.8	-384.6
Services balance	-12.9	-8.5	-2.4	-7.9	-1.6	-5.2	-6.5
Exports	153.8	153.2	155.2	171.5	182.5	185.9	193.4
Imports	-166.7	-161.7	-157.6	-179.4	-184.2	-191.1	-199.9
Primary income balance	-11.0	-21.0	-22.1	-23.5	-24.6	-26.2	-25.5
Receipts	71.1	71.7	76.8	91.4	104.7	99.1	100.7
Payments	-82.1	-92.7	-99.0	-115.0	-129.3	-125.3	-126.3
Secondary income balance	-6.3	-10.0	-6.9	-5.7	-7.0	-6.5	-6.7
Capital and financial account balance	47.3	51.5	56.5	26.0	49.4	52.7	53.3
Capital account (net)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial account (net)	47.3	51.5	56.5	26.0	49.4	52.7	53.3
Direct investment	-16.2	-24.6	-33.8	-51.1	-45.7	-47.3	-49.6
Assets	52.5	45.2	39.8	43.7	36.3	39.4	43.3
Liabilities	68.7	69.8	73.6	94.8	82.0	86.6	93.0
Portfolio investment	46.5	61.7	19.4	33.5	23.9	25.4	25.6
Assets	49.2	55.4	23.5	47.9	20.6	21.9	22.0
Liabilities	2.7	-6.2	4.1	14.4	-3.3	-3.5	-3.6
Other investment and financial derivatives	17.0	14.4	71.0	43.6	71.3	74.6	77.3
Net errors and omissions	-2.4	-0.4	-0.9	-2.0	-3.1	0.0	0.0
Overall balance	6.8	1.1	-1.8	27.4	12.5	6.0	8.0
Memorandum items:							
Current account as percent of GDP	18.0	17.2	17.5	16.4	17.9	15.8	15.8
Goods balance as percent of GDP	27.5	30.1	27.4	27.3	27.0	25.9	25.8
Re-exports as percent of GDP	64.2	60.0	55.3	54.7	55.9	…	…
Net international investment position							
In billions of U.S. dollars	591	647	721	809	812	…	…
In percent of GDP	188	210	227	239	223	…	…

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, 2014–20 1/

	2014	2015	2016	2017	2018	Projections 2019	2020
	(In billions of Singapore dollars, end of period)						
Net foreign assets	458	502	506	532	553	562	572
Monetary authorities	344	353	353	372	390	398	409
Banks	115	149	153	160	164	164	164
Domestic credit	800	823	864	901	953	977	1003
Claims on resident private sector	685	702	741	767	805	821	839
Claims on central government	115	121	123	133	148	156	164
Other items (net)	-535	-573	-556	-584	-614	-618	-622
M2	722	751	814	848	891	920	954
M1	262	279	294	310	307	317	328
Quasi-money	461	472	520	538	585	604	626
	(Annual percentage change)						
Domestic credit	7.3	2.9	5.0	4.2	5.8	2.5	2.7
Claims on private sector	7.0	2.5	5.5	3.6	4.9	2.0	2.3
M2	7.6	4.0	8.4	4.1	5.1	3.3	3.6
	(Contribution to M2 growth, in percentage points)						
Net foreign assets	3.5	6.1	0.6	3.2	2.5	0.9	1.2
Domestic credit (net)	8.1	3.2	5.5	4.5	6.1	2.7	2.9
Claims on private sector	6.6	2.4	5.1	3.3	4.4	1.8	2.0
Claims on central government (net)	1.4	0.8	0.4	1.2	1.7	0.9	0.9
Other items (net)	-4.0	-5.2	2.3	-3.5	-3.5	-0.4	-0.4
Memorandum items:							
Total loans to nonbanks (annual percentage change) 2/	9.2	-0.3	0.2	8.0	5.1	…	…
To residents (annual percentage change) 3/	6.8	4.0	5.0	3.2	5.4	…	…

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

1/ Based on domestic banking units (DBUs) and Asian currency units (ACUs).
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, 2014–2018

	2014	2015	2016	2017	2018
Financial sector indicators					
Broad money (M2, percent change, y/y, end of period)	7.6	4.0	8.4	4.1	5.1
Private sector credit (percent change, y/y, end of period)	7.0	2.5	5.5	3.6	4.9
Credit to the property sector (percent change, y/y, end of period) 1/	9.0	8.2	3.1	2.3	5.9
Share of property sector credit in total nonbank credit (percent, end of period) 1/	46.3	50.7	50.8	49.2	50.6
Credit rating of local banks (S&P) 2/	AA-	AA-	AA-	AA-	AA-
Three-month S$ SIBOR (percent, end of period)	0.5	1.2	1.0	1.5	1.9
NPL ratio (local banks, percent, latest available) 3/ 4/	0.9	1.1	1.4	1.6	1.5
Capital adequacy ratio of local banks (percent, latest available) 4/	15.9	15.9	16.5	17.1	16.5
Asset market indicators (end of period)					
Stock prices (percent change, y/y)	6.2	-14.3	-0.1	18.3	-9.9
P/E ratio	12.6	12.8	14.1	17.6	...
Stock prices of the finance sector (percent change, y/y)	10.3	-12.8	1.1	30.0	-8.7
Real estate prices (percent change, y/y)					
Private residential (4-quarter average)	-2.9	-3.9	-3.1	-1.1	7.8
Private residential (end of period)	-4.0	-3.7	-3.1	1.1	7.9
Office space (4-quarter average)	3.2	2.5	-1.9	-5.2	5.2
Industrial space (annual average)	2.5	-0.6	-7.0	-7.6	-1.7
External indicators					
Current account balance (US$ billion)	56.5	53.0	55.7	55.4	65.1
In percent of GDP	18.0	17.2	17.5	16.4	17.9
Gross official reserves (US$ billion, end of period)	256.9	247.7	246.6	279.9	287.7
In months of next year's imports of goods and services	6.6	6.7	6.0	6.2	6.1
Real effective exchange rate (index, 2010=100, end of period)	109.9	108.0	106.7	106.4	107.3

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.
4/ Data for 2018 are as of end-September.

Table 5. Singapore: Medium-Term Scenario, 2014–24

	2014	2015	2016	2017	2018	Projections 2019	2020	2021	2022	2023	2024
Real growth (percent change)											
GDP	3.9	2.9	3.0	3.7	3.1	2.0	2.3	2.4	2.5	2.5	2.5
Total domestic demand	2.1	0.4	5.5	6.5	1.1	3.3	2.0	2.1	2.4	2.5	2.5
(Contribution to GDP growth, in percent)	1.6	0.3	4.0	4.9	0.8	2.5	1.6	1.6	1.8	1.9	1.9
Final domestic demand	3.4	4.4	2.3	4.6	0.5	3.0	2.1	2.2	2.4	2.6	2.6
Consumption	3.0	5.9	2.9	3.6	3.0	3.0	2.6	2.7	2.7	2.7	2.7
Private	3.6	5.2	2.7	3.4	2.7	2.7	2.7	2.7	2.8	2.8	2.8
Public	0.6	8.9	3.7	4.5	4.1	4.1	2.4	2.4	2.5	2.5	2.5
Gross capital formation	0.8	-8.6	10.2	11.6	-2.1	3.8	1.0	1.2	1.7	2.2	2.1
Gross fixed investment	4.2	2.0	1.1	6.4	-4.0	2.8	1.1	1.3	1.9	2.4	2.3
Private	2.9	0.1	-1.6	8.3	-3.4	4.4	1.1	0.5	1.2	2.3	2.3
Public	11.1	10.8	12.7	-1.1	-6.6	-3.3	1.4	4.9	4.9	2.8	2.2
Change in inventories 1/	-0.9	-3.0	2.3	1.4	0.5	0.3	0.0	0.0	0.0	0.0	0.0
Net exports 1/	2.1	3.6	0.0	-1.1	2.0	0.1	0.7	0.8	0.7	0.6	0.6
Saving and investment (percent of GDP)											
Gross national savings	47.4	42.6	44.2	44.5	44.5	43.5	43.3	43.0	42.7	42.4	42.1
Government 2/	4.8	4.2	5.4	6.1	5.5	5.1	5.0	4.8	4.7	4.6	4.6
Private and other	42.6	38.3	38.9	38.4	39.0	38.4	38.3	38.2	38.0	37.8	37.5
Gross capital formation	29.4	25.4	26.7	28.2	26.6	27.7	27.5	27.3	27.1	27.2	27.1
Government 3/	4.9	5.1	5.4	4.8	4.3	4.1	4.1	4.2	4.3	4.3	4.3
Private and other	24.6	20.2	21.3	23.4	22.4	23.6	23.4	23.1	22.8	22.8	22.8
Inflation and unemployment											
(period average, percent)											
CPI inflation	1.0	-0.5	-0.5	0.6	0.4	1.0	1.3	1.3	1.3	1.4	1.5
CPI inflation, excluding food and energy 4/	0.6	-0.7	-0.9	-0.1	-0.2	0.8	1.2	1.3	1.4	1.5	1.5
MAS Core inflation 4/	1.9	0.5	0.9	1.5	1.7	1.5	1.7	1.7	1.7	1.8	1.8
Unemployment rate	2.0	1.9	2.1	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.9
Output gap	0.5	-0.2	-0.1	0.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Central government (percent of GDP) 5/											
Revenue 6/	17.1	17.3	18.5	19.1	18.5	18.1	18.2	18.3	18.4	18.6	18.8
Expenditure	12.2	14.0	15.0	14.2	14.4	14.1	14.2	14.6	14.9	15.2	15.5
Net lending/borrowing	4.9	3.3	3.5	5.0	4.1	4.0	4.0	3.7	3.5	3.4	3.3
Net lending/borrowing, excluding nonproduced assets	1.1	-0.3	0.7	1.8	1.0	0.8	0.7	0.4	0.2	0.1	0.0
Primary balance 7/	-1.1	-2.5	-2.5	-1.4	-2.3	-2.7	-2.9	-3.3	-3.6	-3.9	-4.1
Merchandise trade (percent change)											
Export volume	1.8	4.2	-0.5	5.5	6.2	1.9	3.5	3.7	3.7	3.8	3.8
Import volume	-0.3	4.2	-0.9	4.9	6.2	3.3	3.6	3.7	3.7	3.8	3.8
Terms of trade	0.4	5.4	-0.2	-1.6	-1.6	0.4	0.1	0.3	0.2	0.1	0.1
Balance of payments (percent of GDP)											
Current account balance	18.0	17.2	17.5	16.4	17.9	15.8	15.8	15.8	15.6	15.3	15.0
Balance on goods and services	23.4	27.3	26.6	25.0	26.6	24.6	24.1	24.2	24.1	23.7	23.6
Balance on primary and secondary income	-5.5	-10.1	-9.1	-8.6	-8.7	-8.8	-8.3	-8.4	-8.5	-8.5	-8.6
Gross official reserves (US$ billions) 8/	257	248	247	280	288	261	271	281	295	310	325
In months of imports 9/	6.6	6.7	6.0	6.2	6.1	5.4	5.4	5.4	5.4	5.4	5.3

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

1/ Contribution to GDP growth.

2/ Based on fiscal accounts data.

3/ Based on national accounts data.

4/ IMF staff estimates, showing projections from 2019. MAS core inflation excludes the costs of accommodation and private road transport.

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

6/ Does not include announced increase in goods and services tax from 7 to 9 percent sometime in 2021-2025.

7/ Net lending/borrowing excluding nonproduced assets minus net investment return contribution (NIRC).

8/ The projections for official reserves for 2019 and onward reflect the transfers of S$45 billion from the official foreign reserves to GIC Pte. Ltd., as announced in May 8, 2019.

9/ In months of next year's imports of goods and services.

Table 6. Singapore: Summary of Government Operations and Stock Positions, FY2015–FY2019 1/

	FY2015	FY2016	FY2017	FY2018		FY2019	
				Budget 13/	Prel.	Budget 13/	Proj.
I. Statement of government operations							
			(In billions of Singapore dollars)				
Revenue	73.8	84.8	90.6	88.5	90.1	92.1	92.7
Taxes	55.6	58.7	66.4	63.3	66.8	67.7	67.7
Other revenue	18.1	26.1	24.3	25.2	23.3	24.3	25.0
Of which: Net investment returns contribution (NIRC)	8.9	14.6	14.7	15.9	16.4	17.2	17.8
Expense	56.3	58.9	61.1	63.5	64.4	66.7	66.7
Compensation of employees	8.0	8.3	8.9	9.2	9.3	9.6	9.6
Use of goods and services	17.5	18.4	18.9	20.3	20.2	21.4	21.4
Expense not elsewhere classified 2/	30.8	32.2	33.4	34.0	34.8	35.8	35.8
Gross operating balance	17.5	25.9	29.5	25.0	25.7	25.3	25.9
Net acquisition of nonfinancial assets, excluding nonproduced assets	20.8	20.7	19.7	24.9	22.7	21.8	21.8
Of which: Development expenditure	19.4	18.9	18.0	22.4	20.4	19.5	19.5
Net lending/borrowing, excluding nonproduced assets 3/	**-3.3**	**5.3**	**9.7**	**0.1**	**3.0**	**3.5**	**4.1**
Net acquisition of nonproduced assets (land)	-15.5	-11.2	-15.7	-12.2	-14.8	-16.9	-16.9
Net lending/borrowing	12.2	16.5	25.5	12.2	17.8	20.4	21.1
			(In percent of GDP)				
Revenue	17.3	18.9	19.2	17.9	18.2	18.0	18.1
Taxes	13.1	13.1	14.1	12.8	13.5	13.2	13.2
Other revenue	4.3	5.8	5.1	5.1	4.7	4.8	4.9
Of which: NIRC	2.1	3.3	3.1	3.2	3.3	3.4	3.5
Expense 2/	13.2	13.1	12.9	12.8	13.0	13.0	13.0
Gross operating balance	4.1	5.8	6.2	5.1	5.2	4.9	5.1
Net acquisition of nonfinancial assets, excluding nonproduced assets	4.9	4.6	4.2	5.0	4.6	4.3	4.3
Of which: Development expenditure	4.5	4.2	3.8	4.5	4.1	3.8	3.8
Net lending/borrowing, excluding nonproduced assets 3/	**-0.8**	**1.2**	**2.1**	**0.0**	**0.6**	**0.7**	**0.8**
Net acquisition of nonproduced assets (land)	-3.6	-2.5	-3.3	-2.5	-3.0	-3.3	-3.3
Net lending/borrowing	2.9	3.7	5.4	2.5	3.6	4.0	4.1
Memorandum items:							
Cyclically-adjusted overall balance (percent of potential GDP) 4/	-0.7	1.2	2.0	-0.1	0.5	0.7	0.8
Primary balance 5/	-2.9	-2.4	-1.1	-3.2	-2.7	-2.7	-2.7
Structural primary balance (percent of potential GDP) 6/	-2.8	-2.4	-2.1	-3.4	-3.0	-2.9	-2.9
Expenditures on social development 7/	7.3	7.5	7.7	7.3	7.4	7.4	...
Spending from Endowment and Trust Funds	0.9	0.9	0.7	...	0.8	...	...
Authorities' budgetary accounts 8/							
Operating revenue (1)	15.2	15.4	16.1	14.7	14.9	14.6	...
Total expenditure (2)	15.8	15.8	15.6	16.2	16.0	15.7	...
Primary fiscal balance (3)=(1)-(2)	-0.6	-0.5	0.5	-1.5	-1.1	-1.0	...
Special transfers (excl. transfers to endowment funds) (4)	1.0	0.6	0.4	0.4	0.3	0.3	...
Basic balance (5)=(3)-(4)	-1.6	-1.1	0.0	-1.9	-1.4	-1.4	...
Transfers to Endowment and Trust Funds (6)	1.4	0.8	0.8	1.5	1.5	2.6	...
NIRC (7)	2.1	3.3	3.1	3.2	3.3	3.4	...
Overall balance (8)=(5)-(6)+(7)	-1.0	1.4	2.3	-0.1	0.4	-0.7	...
II. Stock positions							
			(In billions of Singapore dollars, unless otherwise indicated)				
Gross financial assets 9/	941	997	1,088	...	...	...	...
Gross debt 10/	436	479	517	...	562	...	...
Gross debt (in percent of GDP) 10/	102	107	109	...	114	...	...
Government deposits at the Monetary Authority of Singapore 9/	124	79	65	...	41	...	...
Temasek asset holdings 9/ 11/	242	275	308	...	...	...	...
GIC asset holdings 12/	...	...	more than 140	...	...	...	...

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
4/ Cyclically adjusted net lending/borrowing excluding nonproduced assets.
5/ Net lending/borrowing excluding nonproduce 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, environment and water resources, 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.
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 government of Singapore is the sole equity shareholder of Temasek.
12/ GIC Pte. Ltd. (GIC) is a private company wholly owned by the government of Singapore.
13/ 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, 2014–18Q3 1/

	2014	2015	2016	2017	2018 Q3
	(End of period; in percent)				
Capital adequacy ratio					
Regulatory capital to risk-weighted assets	15.9	15.9	16.5	17.1	16.5
Regulatory tier I capital to risk-weighted assets	13.6	13.7	14.3	15.4	14.6
Shareholders' equity to assets	8.6	9.1	9.3	9.3	9.1
Asset quality					
NPLs to nonbank loans	0.9	1.1	1.4	1.6	1.5
Total provisions to NPLs	152.5	130.8	101.5	84.8	79.4
Specific provisions to NPLs	32.6	26.2	29.5	40.8	41.9
Loan concentrations (in percent of total loans)					
Bank loans	14.0	12.7	12.8	14.7	12.9
Nonbank loans	86.0	87.3	87.2	85.3	87.1
Of which :					
Manufacturing loans	7.9	7.4	6.9	6.8	7.5
Building and construction loans	14.9	16.7	17.0	16.4	18.8
Housing loans	20.2	21.2	21.6	21.7	21.1
Loans to professionals and private individuals	9.0	9.1	9.1	9.2	9.2
Loans to nonbank financial institutions	7.2	6.9	7.3	7.9	6.6
Profitability					
After tax return on assets	0.9	1.0	0.9	1.0	1.1
After tax return on equity	10.3	10.8	8.9	10.4	12.2
Net interest margin	1.7	1.8	1.7	1.8	1.8
Non-interest income to total income	33.9	36.4	37.7	37.7	34.8

Source: Monetary Authority of Singapore.

1/ The data relates to local banking groups' global operations.

Table 8. Singapore: International Investment Position, 2014–18

	2014	2015	2016	2017	2018
	(In billions of U.S. Dollars) 1/				
External assets	3,058	3,078	3,199	3,725	3,836
Direct investment	680	739	794	962	1,021
Portfolio investment	957	968	1,024	1,254	1,220
Equity securities	482	490	514	638	603
Debt securities	475	479	510	615	618
Other investment and financial derivatives	1,164	1,123	1,135	1,229	1,307
Reserve assets	258	248	246	280	287
External liabilities	2,467	2,431	2,478	2,916	3,024
Direct investment	1,027	1,090	1,113	1,393	1,481
Portfolio investment	208	175	190	245	219
Equity securities	173	144	146	191	163
Debt securities	35	31	45	54	56
Other investment and financial derivatives	1,232	1,166	1,175	1,277	1,324
Net international investment position	591	647	721	809	812
	(In percent of GDP) 1/				
External assets	971	999	1006	1101	1053
Direct investment	216	240	250	284	280
Portfolio investment	304	314	322	370	335
Equity securities	153	159	162	189	165
Debt securities	151	155	160	182	170
Other investment and financial derivatives	370	365	357	363	359
Reserve assets	82	81	77	83	79
External liabilities	784	789	779	862	830
Direct investment	326	354	350	412	407
Portfolio investment	66	57	60	72	60
Equity securities	55	47	46	57	45
Debt securities	11	10	14	16	15
Other investment and financial derivatives	391	378	369	377	364
Net international investment position	188	210	227	239	223

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

Appendix I. External Sector Report

	Singapore	Overall Assessment
Foreign asset and liability position and trajectory	**Background.** The net international investment position (NIIP) stood at 223 percent of GDP in 2018, after a gradual rise from 197 percent in 2013. Gross assets and liabilities are high reflecting Singapore's status as a financial center (about 1053 and 830 percent of GDP, respectively). The current account (CA) surplus has been a main driver since the GFC 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 (424 percent of GDP in 2018)—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.	**Overall Assessment**: *The external position in 2018 was substantially stronger than what is consistent with fundamentals and desirable policies.* Singapore's very open economy and position as a global trading and financial center makes the assessment more uncertain than usual. **Potential policy responses**: Singapore's economy is undergoing structural transformation in light of rapidly aging population and challenges posed by its transition to a new digital economy. Higher public investment addressing these issues, including spending on healthcare, investments in physical infrastructure and human capital, would help moderate the CA imbalances over the medium term by lowering net public saving. Structural reforms are also necessary to improve productivity, which would support a trend real exchange rate appreciation.
2018 IIP (% GDP)	NIIP: 223.0 | Gross Assets: 1053.4 | Debt Assets: 504.0 | Gross Liab.: 830.4 | Debt Liab.: 354.2	
Current account	**Background.** The CA surplus was 17.9 percent of GDP in 2018, up from 16.4 percent in 2017, largely driven by a narrowing of the deficit in the services balance. The current account balance is slightly higher than its average since 2013 but lower than the post-GFC peak of 22.9 percent in 2010. Singapore's large CA balance reflects a strong goods balance that is partly offset by deficits in the services and income account balances. 1/ The oil trade deficit widened to 3 percent in 2018. Structural factors and policies that boost savings, such as Singapore's status as a financial center, consecutive fiscal surpluses, and the rapid pace of aging combined with a mandatory defined-contribution pension scheme (whose asset were about 80 percent of GDP in 2018), as well as relatively high productivity, are the main drivers of Singapore's strong external position. The CA surplus is projected to narrow on the back of increased infrastructure and social spending. **Assessment** Guided by the EBA framework, staff assesses the 2018 CA as substantially higher than the level consistent with fundamentals and desirable policies, by 1.1-7.1 percent of GDP.2/ This gap in part reflects tighter-than-desired fiscal balance.	
CA Assessment 2018	Actual CA: 17.9 | Cycl. Adj. CA: 18.4 | EBA CA Norm: -- | EBA CA Gap: -- | Staff Adj.: -- | Staff CA Gap: 4.1	
Real exchange rate	**Background.** The real effective exchange rate (REER) depreciated by 0.5 percent y/y in 2018 due to relatively low inflation in Singapore, while the nominal effective exchange rate (NEER) appreciated by 1.0 percent y/y. This followed depreciation of REER by 1.4 percent and appreciation of NEER by 1.9 percent, both cumulative, between 2015 and 2017. As of April 2019, the REER appreciated by 1 percent relative to 2018 average. **Assessment.** Notwithstanding the nonstandard factors that make a quantitative assessment difficult, staff assesses that the REER is 2.2-14.2 percent below the level implied by fundamentals and desirable policies. This assessment is subject to a wide range of uncertainty about both the underlying CA assessment and the semi-elasticity of the CA with respect to the REER.	
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, while global stress may lead to outflows. The financial account deficit 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. 3/ In 2018, the deficit on the capital and financial account widened to 14 percent of GDP from 8 percent in 2017 (deficits ranged 8-18 percent in 2015-17). This reflected resumed outflows in other investments (driven by the increase in bank asset flows). **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 large NIIP buffer. Official reserves held by the Monetary Authority of Singapore (MAS) reached US$ 288 billion (79 percent of GDP) in 2018, of which S$ 45 billion was transferred to the government in May for management by GIC. Aggregated data on net purchases of foreign exchange will be published on a six-month aggregated basis with a six-month lag beginning July 2020. **Assessment.** In addition to FX reserve held by the MAS, Singapore also has access to other official foreign assets managed by Temasek and the GIC. 4/ The current level of official external assets appear adequate, even after considering prudential motives, and there is no clear case for further accumulation for precautionary purposes.	

	Singapore (concluded)
Technical Background Notes	1/ Singapore has a negative income balance despite its large positive NIIP position reflecting the lower rates of return on its foreign assets relative to returns paid 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 quantitative assessment of Singapore's external position difficult and subject to significant uncertainty. Singapore is not included in the sample used to estimate the EBA models because it is an outlier along several dimensions (e.g., large external asset and liability positions, highly positive NFA position). Estimates are guided by the EBA CA framework, which suggest that Singapore's CA norm is mainly explained by its large NFA position, the high level of income per working age population, rapid population aging, and high public health spending efficiency. Staff estimated CA gap is around 4.1 percent of GDP, although this carries a high degree of uncertainty. The fiscal policy gap contributed about 1 percent of GDP to the overall model identified policy gaps. 3/ The latter is the result of considerably large gross inflows and outflows. 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 70 percent of GDP.

Appendix II. Staff Policy Advice from the 2017 and 2018 Article IV Consultations

Staff Advice	Policy Actions
Fiscal Policy	
As expenditures rise, consideration could be given to using a larger share of the government's investment returns for budget financing. (2018/17)	The Constitution allows the government to spend up to half of the expected long-term real returns from the net assets invested by MAS, GIC, and Temasek, known as the Net Investment Returns Contribution (NIRC). The NIRC is already the largest single contributor to revenues in the government budget, and its share has been growing in recent years. Singapore intends to meet the medium-term expenditure pressures via a differentiated fiscal strategy: to raise broad-based recurrent tax revenue for recurrent spending, and to use borrowing (backed by government's reserves) for critical major infrastructure that benefit multiple generations.
Long-term infrastructure investment that will benefit future generations calls for borrowing to spread the costs across current and future generations. (2018)	Budget 2019 reiterated the authorities' intention to study the option of using government debt as part of the financing mix for long-term infrastructure projects where benefits span several generations.
Consideration could be given to gearing the fiscal rule to the business cycle rather than the political cycle. (2017)	The Singapore Government operates on a balanced budget over each term of government and is not allowed to spend surpluses accumulated from previous terms of government. However, should the need arise for a more decisive countercyclical action, Singapore's fiscal rule allows the Government to seek the President's approval to draw on past reserves. So far, there has not been a situation where the fiscal rule has constrained policy response to a downturn.
Monetary, Exchange Rate, and Financial Policies	
Under the baseline, further normalization of monetary policy is likely in order. (2018)	MAS tightened monetary policy in 2018 in response to above-potential growth, a positive output gap, and rising inflation expectations.
Property market cooling measures should be maintained given the elevated financial risks. However, staff recommends eliminating ABSD residency-based differentiation once systemic risks from the housing market dissipate. (2018)	Given latent demand for housing, both from domestic and foreign sources, both structural macroprudential policies and the ABSD have been maintained
Staff encourages the authorities to continue to monitor the supply side to ensure that sufficient land is reserved and released in a timely manner through the government land sales program. In addition, other supply-side measures such as the process of building approval could be targeted to meet housing demand. (2018)	The concentration of responsibilities of macroprudential policy and of financial supervision in the MAS ensures it has access to relevant data, including housing supply and demand. An interagency taskforce on the property market serves as a platform for regular sharing of data and surveillance insights across the Ministry of Finance, the MAS, and the Ministry of National Development.
Domestic private sector balance sheets remain strong overall, but elevated levels of debt warrant continued monitoring of pockets of vulnerability. (2018)	MAS closely monitors household vulnerabilities through a sophisticated framework for systemic risk monitoring. The MAS has improved the oversight of credit risk at banks through multi-year on-site inspection initiatives, guidance on credit underwriting and credit review, and the roll out of analytical tools to compare and evaluate more granular data collected from banks.

Staff Advice	Policy Actions
Banking sector liquidity risks are contained, but U.S. dollar funding (US$) conditions need careful monitoring. (2018)	The MAS has introduced minimum Liquidity Coverage Ratio (LCR) and Net Stable Funding Requirements (NSFR) for D-SIBs in all currencies and in Singapore dollars. Other banks can choose to comply with the LCR or the minimum liquid asset requirement. MAS continues to closely monitor and review banks' liquidity risk management practices and assess the willingness and ability of foreign banks' head offices to provide liquidity support to their branches in Singapore.
Structural Policies	
Staff encourages the authorities to adopt broader social insurance arrangements, including unemployment insurance. (2017/18)	The authorities point out that Singapore has a range of social security arrangements. Active labor market policies—through various training programs and employment support—encourage continued employment as well as help unemployed workers get back into the workforce. The authorities also provide wage supplement to encourage low-wage Singaporean workers to stay employed and a means-tested retirement income supplement for elderly Singaporeans. To support health care costs, Singapore has introduced universal basic medical insurance coverage for large hospital bills (MediShield Life) and will roll out a national insurance scheme for long-term care costs in the event of severe disability from 2020 (CareShield Life). The FY 2019 budget included additional healthcare benefits for the elderly, enhancement of the income supplement program for low-wage Singaporean workers, and expansion of training programs.
Careful calibration and frequent review of training programs would ensure that they provide the intended sharp incentives for investments in skills useful to the future economy. (2017).	The authorities internally monitor the effectiveness of the programs and periodically make changes and enhancements.
Singapore can play an active role in diffusing innovation in ASEAN. (2017)	Singapore chaired ASEAN in 2018. During its tenure, Singapore launched initiatives to support economic integration and innovation across the region including the flagship ASEAN Smart Cities Network.

Appendix III. Risk Assessment Matrix[1/]

	Sources of Risk	Likelihood and Transmission	Expected Impact of Risk	Recommended Policy Response
External	**Sharp tightening of global financial conditions**	**Low/Medium** This causes higher debt service and refinancing risks; stress on leveraged firms, households, and vulnerable sovereigns; capital account pressures; and a broad-based downturn. The tightening could be a result of: (i) *Market expectation of tighter U.S. monetary policy* triggered by strong wage growth and higher than-expected inflation; (ii) *Sustained rise in risk premium* in reaction to concerns about debt levels in some euro area countries; a disorderly Brexit; or idiosyncratic policy missteps in large emerging markets.	**High**	Policy responses include maintaining prudent risk management practices and adequate liquidity and capital buffers, as recommended in the 2019 FSAP. Maintain close links with home country supervisors. Ease macro-prudential policies to mitigate financial sector stress. In an extreme event, the strong official reserve position could provide an additional cushion. Swap lines with other central banks could complement this.
External	**Rising protectionism and retreat from multilateralism**	**High** In the near term, escalating and sustained trade actions threaten the global trade system and regional integration. Additional barriers and the threat of new actions reduce growth both directly and through adverse confidence effects (increasing financial market volatility). In the medium term, geopolitical competition and fraying consensus on the benefits of globalization lead to economic fragmentation and undermine the global rules-based order, with adverse effects on growth and stability.	**High**	Continue to implement structural reforms to transform Singapore into a knowledge-based innovation-driven economy. Should domestic demand weaken substantially, use temporary and targeted fiscal stimulus, loosen monetary policy, including re-centering the NEER band if the shock is large, and ease macro-prudential policy as necessary, while maintaining financial stability.
External	**Weaker-than-expected global growth**	The global growth slowdown could be synchronized as weakening outlooks in the U.S., Europe and China feed off each other and impact on earnings, asset prices and credit performance. -**U.S.:** Confidence wanes against a backdrop of a long expansion with stretched asset valuations, rising leverage, and unwinding of the fiscal stimulus. **(Medium)** -**Europe**: In the near term, weak foreign demand makes euro area businesses delay investment, while faltering confidence reduces private consumption. Adverse financial market reaction to debt sustainability concerns further dampens growth. A disorderly Brexit could cause market disruption with negative spillovers. **(High)** -**China**: In the short term, intensification of trade tensions and/or a housing market downturn prompt a slowdown. Deleveraging is delayed, and financial stresses emerge. In the medium term, insufficient progress in deleveraging and rebalancing reduces growth and raises the probability of a larger disruptive adjustment. There would be negative spillovers on the global economy through trade volumes, commodity prices, and financial markets. **(Medium)**	**Medium to High**	Singapore's position as a financial center and a trading hub would imply large spillovers from global lower growth. Especially, a significant slowdown in China would have both direct effects on Singapore and indirect impacts via a sharp slowdown in the region and a severe decline in commodity prices. Financial stress in China would lead to rising NPLs and a decline in investor sentiment, pullback of funding from the region, deteriorating further the quality of regional exposures of banks in Singapore. High corporate and household leverage and property price corrections could exacerbate a slowdown in economic activity, leading to a deep recession with substantial credit risk. To address the global slowdown, the preferred policy response would be providing temporary and targeted fiscal support.
External	**Large swings in energy prices**	**Medium** Risks to prices are broadly balanced, reflecting offsetting—but large and uncertain—supply and demand shocks. In the near term, uncertainty surrounding the shocks translates to elevated price volatility, complicating economic management and adversely affecting investment in the energy sector. While, on aggregate, higher oil prices would harm global growth, they would benefit oil exporters.	**Medium**	As a trading hub and center for oil services, Singapore experienced higher NPLs in exposed sectors when oil prices declined in 2014-16. Policy responses include maintaining adequate capitalization, risk management and liquidity buffers.
External	**Cyber-attacks**	**Medium** Given Singapore's role as a financial sector, cyber-attacks on interconnected financial systems and broader private and public institutions that trigger systemic financial instability or widely disrupt socio-economic activities could significantly impact the financial sector – an important driver of growth.	**Medium to High**	Continue to assess the adequacy of IT risk management practices and prepare a contingency plan. Coordinate with global financial regulators. Should disruptions take place, provide temporary and targeted emergency liquidity support and/or fiscal support to ensure a functional banking system.
Domestic	**Disorderly correction in property prices**	**Low** Decline in collateral values and wealth effects could trigger a fall in economic activity and bank lending with adverse feedback effects on household indebtedness and property prices	**Medium**	Ease macro-prudential policies while safeguarding financial stability. Use targeted assistance measures to households whose debt servicing capacity is adversely affected.
Domestic	**Low growth in productivity and investment**	**Medium** Sharp increase in unit labor costs and loss of competitiveness. Tighter immigration policy may reduce competitiveness and profitability and provide disincentives to invest in some sectors. Higher than expected transitional costs such as high frictional unemployment can have long-term effects on growth.	**Medium**	Adjust foreign worker policies to relax tightness in labor markets. Provide targeted and temporary fiscal stimulus in areas of education and skills training to help reduce frictional unemployment.

1/ The Risk Assessment Matrix (RAM) shows events that could materially alter IMF staff's baseline path (the scenario most likely to materialize in the view of the staff). The relative likelihood is 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). The RAM reflects staff's views on the source of risks and overall level of concern as of the time of discussions with the authorities. Non-mutually exclusive risks may interact and materialize jointly.

Appendix IV. Public Debt Sustainability Analysis

1. Background. Singapore is a low scrutiny country in the debt sustainability analysis (DSA) framework for market access countries. Singapore government's gross debt stood at about 113.6 percent of GDP as of end of FY2018. All debt is held domestically and issued in local currency.

2. Debt accumulation in Singapore is unrelated to deficit financing. The Constitution mandates a balanced budget over the 5-year political cycle. Sustained over performance on the conservative fiscal rule has contributed to the buildup of large net assets.[1] The issuance of government debt securities is unrelated to the Government's fiscal needs. The Singapore Government issues domestic, local-currency debt securities to 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 are not used to fund government expenditures, therefore all the proceeds from the Government's borrowing are invested.

3. Macro-fiscal assumptions. Real GDP growth is projected at 2 percent in 2019 and would average at 2.4 percent over 2020–24. In staff's baseline projections, the central government net lending/borrowing decreases from an estimated 3.6 percent of GDP in calendar year 2018 to 3.3 percent of GDP in 2024. Staff's projected fiscal path reflects further increases in current spending linked to aging. Staff's baseline currently does not include the proposal of raising the Goods and Services Tax rate after 2020.

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 is projected to rise modestly, at a slower pace than in the recent years. Under the baseline, the debt-to-GDP ratio is projected to increase gradually to about 116.5 percent by 2024,

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[1] The Government's gross assets are mainly managed by GIC Private Limited (total amount is undisclosed, but well over US$100 billion or 29 percent of GDP). The government also places deposits with the MAS (8.5 percent of GDP as of March 31, 2019). In addition, the Government is the sole equity shareholder of Temasek Holdings. Temasek's portfolio was S$308 billion as of March 31, 2018 (66 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 (17 percent) and employees (20 percent). Over the last 5 years, contributions to CPF have amounted to 7.8 percent of GDP and withdrawals to 4.3 percent, on average. The CPF balance in 2018 was about 80 percent of GDP.

[3] The government issues three 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; (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.

an increase of 2.9 percentage points of GDP from end-2018 (increase over 2012–18: 6.9 percentage points of GDP). The increase in debt-to-GDP ratio reflects the modest rise in investment needs by the CPF as employment growth is projected to slow, reflecting population aging. Gross financing needs (GFN) are expected to average at about 10 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 increase in debt, issued to meet CPF's investment needs, is 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

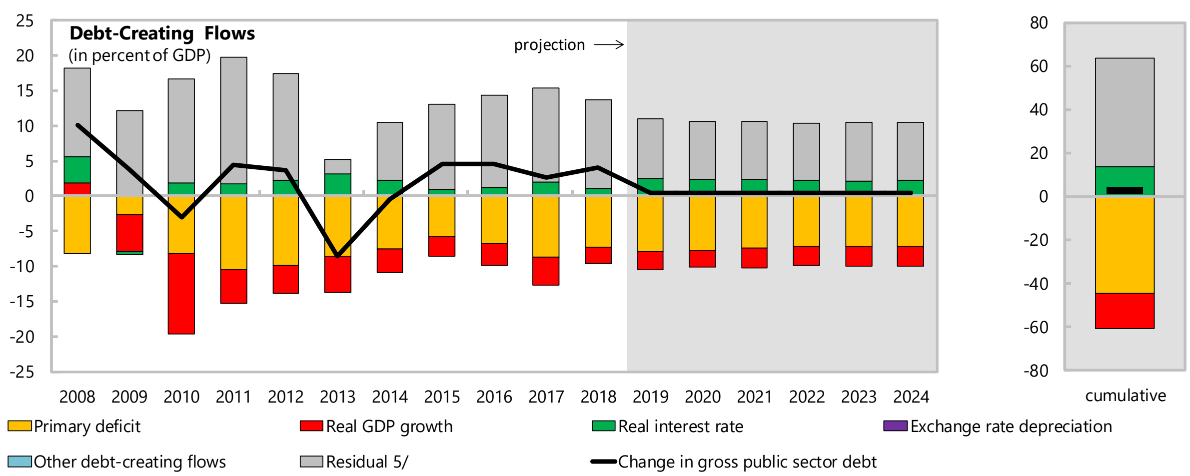
Debt, Economic and Market Indicators [1/]

	Actual			Projections					
	2008-2016 [2/]	2017	2018	2019	2020	2021	2022	2023	2024
Nominal gross public debt	101.5	109.5	113.6	114.1	114.5	115.0	115.5	116.0	116.5
Public gross financing needs	12.7	3.4	5.9	9.4	9.6	10.0	10.3	10.4	10.5
Real GDP growth (in percent)	4.5	3.9	2.3	2.4	2.1	2.5	2.4	2.5	2.5
Inflation (GDP deflator, in percent)	1.0	1.3	2.4	1.1	1.3	1.3	1.3	1.4	1.4
Nominal GDP growth (in percent)	5.5	5.3	4.7	3.5	3.5	3.8	3.8	4.0	4.0
Effective interest rate (in percent) [4/]	3.0	3.3	3.5	3.5	3.4	3.4	3.4	3.4	3.4

As of March 18, 2019		
Sovereign Spreads		
EMBIG (bp) 3/		-41
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							
	2008-2016	2017	2018	2019	2020	2021	2022	2023	2024	cumulative	debt-stabilizing primary balance [11/]
Change in gross public sector debt	2.1	2.6	4.1	0.5	0.5	0.5	0.5	0.5	0.5	2.9	
Identified debt-creating flows	-9.9	-10.7	-8.6	-8.0	-7.8	-7.8	-7.6	-7.8	-7.7	-46.7	
Primary deficit [5/]	-7.6	-8.7	-7.2	-7.9	-7.7	-7.4	-7.2	-7.2	-7.1	-44.6	...
Revenue and grants	17.1	19.2	18.2	18.1	18.3	18.3	18.4	18.6	18.8	110.6	
Primary (noninterest) expenditure	9.6	10.5	11.0	10.2	10.5	10.9	11.2	11.5	11.7	66.0	
Automatic debt dynamics [6/]	-2.4	-2.0	-1.3	-0.1	0.0	-0.4	-0.4	-0.6	-0.6	-2.2	
Interest rate/growth differential [7/]	-2.4	-2.0	-1.3	-0.1	0.0	-0.4	-0.4	-0.6	-0.6	-2.2	
Of which: real interest rate	1.9	2.0	1.1	2.5	2.3	2.3	2.3	2.2	2.2	13.9	
Of which: real GDP growth	-4.2	-4.0	-2.4	-2.6	-2.4	-2.8	-2.7	-2.8	-2.8	-16.0	
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/]	12.0	13.4	12.7	8.5	8.2	8.3	8.1	8.3	8.2	49.6	



Source: IMF staff.

1/ Public sector is defined as central government. Data are reported on a fiscal year basis.

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.

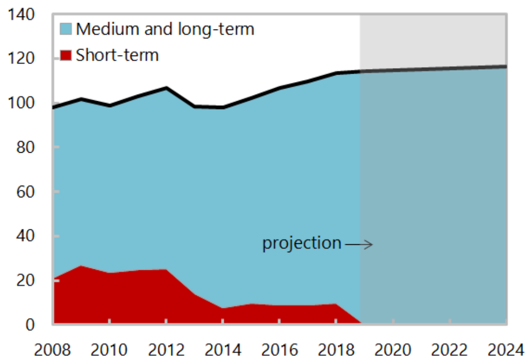
11/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

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

Composition of Public Debt

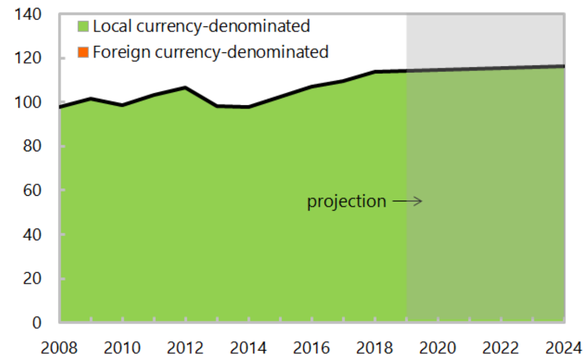
By Maturity

(in percent of GDP)



By Currency

(in percent of GDP)

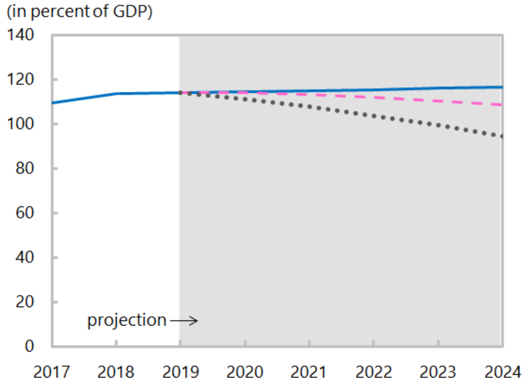


Alternative Scenarios

Baseline   Historical   Constant Primary Balance

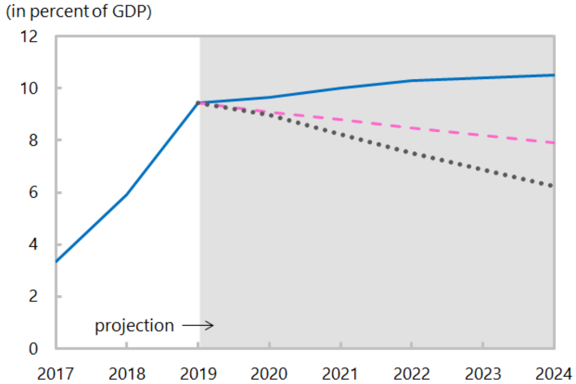
Gross Nominal Public Debt

(in percent of GDP)



Public Gross Financing Needs

(in percent of GDP)



Underlying Assumptions

(in percent)

Baseline Scenario	2019	2020	2021	2022	2023	2024
Real GDP growth	2.4	2.1	2.5	2.4	2.5	2.5
Inflation	1.1	1.3	1.3	1.3	1.4	1.4
Primary Balance	7.9	7.7	7.4	7.2	7.2	7.1
Effective interest rate	3.5	3.4	3.4	3.4	3.4	3.4
Constant Primary Balance Scenario						
Real GDP growth	2.4	2.1	2.5	2.4	2.5	2.5
Inflation	1.1	1.3	1.3	1.3	1.4	1.4
Primary Balance	7.9	7.9	7.9	7.9	7.9	7.9
Effective interest rate	3.5	3.4	3.4	3.5	3.5	3.5

Historical Scenario	2019	2020	2021	2022	2023	2024
Real GDP growth	2.4	4.9	4.9	4.9	4.9	4.9
Inflation	1.1	1.3	1.3	1.3	1.4	1.4
Primary Balance	7.9	7.6	7.6	7.6	7.6	7.6
Effective interest rate	3.5	3.4	3.4	3.3	3.3	3.3

Source: IMF staff.

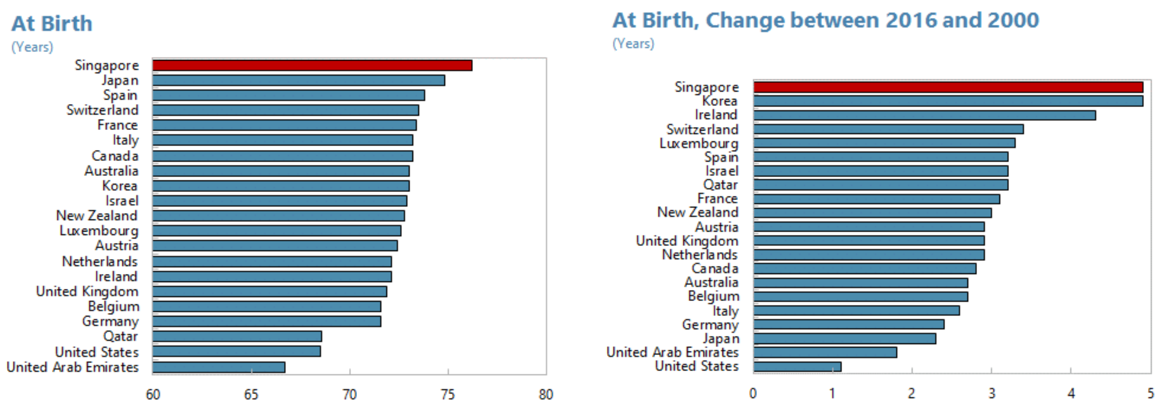
Appendix V. Aging and Healthcare Spending[1]

Singapore has achieved strong health outcomes at relatively low cost. Nonetheless, healthcare spending has risen sharply in recent years, driven by demographic and non-demographic cost pressures that will likely intensify going forward. The government is likely to face substantial pressure to take on a larger share of the healthcare cost burden to preserve affordability.

A. Health Outcomes and Expenditure: Comparison to Peers

1. Singapore health outcomes outperform those of peers and have shown considerable improvement in recent years. Singapore's Healthy Life Expectancy (HALE) at birth, as measured by the World Health Organization, was 76.3 years in 2016, the highest in the world (Figure 1).[2] HALE increased by 5 years since 2000, one of the largest improvements among advanced economies. Moreover, Singapore ranked first in the Institute for Health Metrics and Evaluation (IHME) measurement of health-related Sustainable Development Goals (IHME, 2017).

Figure 1. Health Life Expectancy, 2016 (Years)



Source: World Health Organization and IMF staff estimates.
Note: Healthy life expectancy is the average number of years that a person can expect to live in "full health" by taking into account years lived in less than full health due to disease and/or injury.

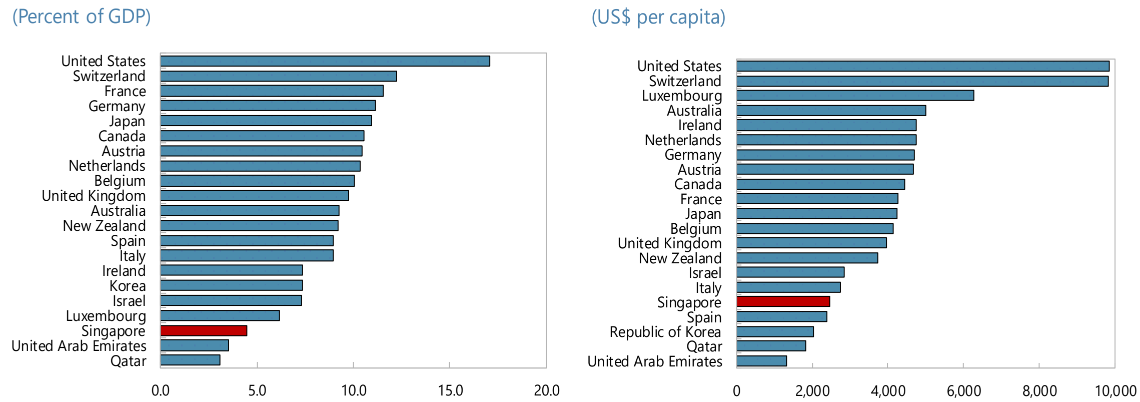
2. Singapore has been able to achieve these health outcomes at a fraction of the cost paid by peers, with a lower share of public spending. Total health expenditure in Singapore in 2016 was 4.5 percent of GDP, compared to more than 9 percent of GDP on average for advanced countries in Asia and among advanced OECD countries (Figure 2). Similarly, total health expenditure per capita at about US$2,500 is well below the average of peers. Moreover, public health expenditure is about half of total spending, compared to ¾ in the case of advanced countries in

[1] Prepared by Laura Jaramillo.

[2] Healthy life expectancy is the average number of years that a person can expect to live in "full health" by taking into account years lived in less than full health due to disease and/or injury.

Asia and among advanced OECD countries (Figure 3). The flip side is that household out-of-pocket payments are considerably higher than peers (Figure 4).

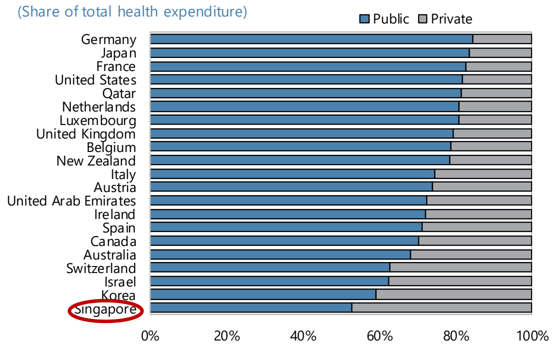
Figure 2. Total Health Expenditure, 2016



Source: World Health Organization.

Figure 3. Public and Private Health Expenditure, 2016

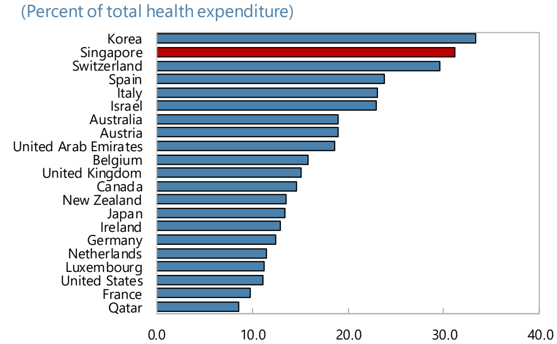
(Share of total health expenditure)



Source: World Health Organization and IMF staff estimates.

Figure 4. Household Out-of-Pocket Payment, 2016

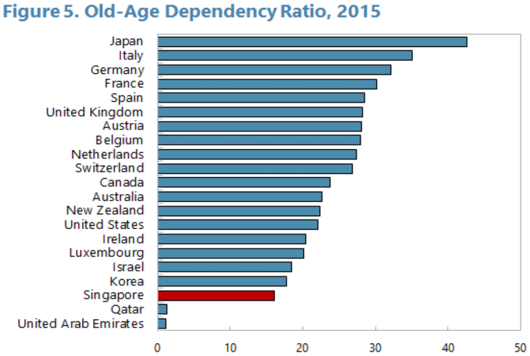
(Percent of total health expenditure)



Source: World Health Organization and IMF staff estimates.

3. Nonetheless, it is important to keep in mind that Singapore still benefits from a relatively low old age dependency ratio, an advantage that will erode with time. The old-age dependency ratio (population aged 65+/ (15 to 64) years of age) in Singapore in 2015 was 16 percent, compared to 29 percent in advanced countries in Asia and 26 percent on average for advanced OECD countries (Figure 5). This has so far helped contain healthcare costs.

Figure 5. Old-Age Dependency Ratio, 2015



Source: United Nations.

Note: Old-age dependency defined as population 65+/(15 to 64) years of age.

B. Singapore's Healthcare System

4. Singapore's model for the health sector has allowed it to achieve strong outcomes at relatively low costs.[3] The blueprint for Singapore's current healthcare system was published in 1993 as a White Paper (Ministry of Health, 1993). The government embarked on a series of reforms to restructure the healthcare delivery system, recognizing shared responsibility (Tan, 2015): (1) individuals and families responsible for healthy living and saving for healthcare expenses; (2) providers responsible for efficient delivery of cost-effective care; (3) insurers responsible for mitigating financial risk associated with illness; (4) government responsible for the safety net to channel subsidies to the poor and sick.

5. The system involves targeted government subsidies, mandated savings, and a national insurance scheme augmented by private medical insurance.[4] Figure 6 provides an overview and Table 1 provides greater details.

- *Means-tested subsidies:* The government uses patient self-selection and means testing to subsidize inpatient services, day surgery, and specialist outpatient treatments received in government hospitals. For instance, patients can choose different hospital wards depending on the level of service provided (from A to C).[5] Also, patients may choose to seek primary care at government polyclinics rather than from private practitioners.[6] In addition, MediFund provides a safety net for patients who face financial difficulties with their remaining bills after drawing on other means of payment, including family.

- *Mandated savings:* MediSave is a savings scheme in the Central Provident Fund (CPF). The CPF receives mandatory tax-deductible payroll contributions from both employers (up to 17 percent of wage) and employees (up to 20 percent of wage). Of these CPF contributions, 8 to 10.5 percentage points are allocated for MediSave. Withdrawal from MediSave is subject to limits and restricted to inpatient, day surgery, and selected outpatient services.

- *Government catastrophic insurance plans:* Compulsory government insurance plans (MediShield Life, CareShield Life) provide risk pooling, with deductibles and co-insurance to reduce moral

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[3] Other factors not directly linked to the healthcare system have played a crucial role in improving health outcomes for Singaporeans, including the provision of public housing, clean water, proper sanitation services, clean environment, good nutrition, and health education.

[4] Non-residents are not eligible for the same benefits (including subsidized access to the public health system beyond emergency services) that citizens or permanent residents are eligible for.

[5] There are 5 hospital ward classes: A, B1, B2, B2+, and C. A costs the patient most, and C the least. A-class patients have a private room with a bathroom, air conditioning, access to private doctors of their choice, and have no subsidy. C-class patients are in open wards, eight to nine in a room, sharing a bathroom, without air-conditioning, and have a subsidy of 65-80 percent. There is no difference in medical care, only in amenities.

[6] The government polyclinics provide outpatient medical care, health screening and pharmacy services, with some offering dental services as well. Subsidies in polyclinics range from 50 to 87.5 percent.

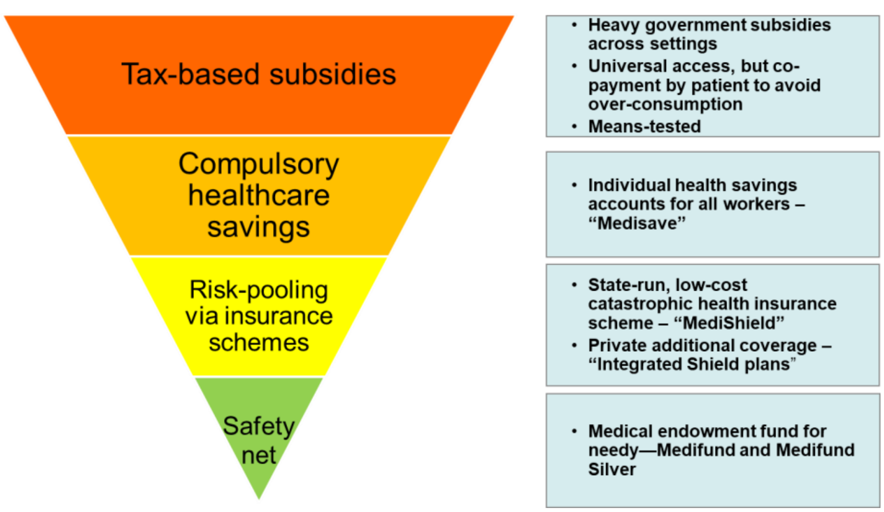
hazard. The plans are structured so that patients pay less MediSave/cash for large public hospital bills and long-term care.

- *Private medical insurance:* The Integrated Shield Plan (IP) is an insurance plan that adds private insurance coverage on top of MediShield Life. Private insurance provides additional benefits and coverage, for example to cover the costs of private hospitals. MediSave can be used to pay premiums, but with limits. Two-thirds of Singaporeans have bought private insurance.

6. **Singapore's delivery system includes both public and private providers** (see Carroll, 2019). Primary care, which is mostly at low cost, is provided mainly by the private sector. Private medical practitioners account for 80 percent of primary care services and 18 government polyclinics account for the remaining 20 percent. As care becomes more complicated—and therefore more expensive—more people turn to the polyclinics. About 45 percent of those who have chronic conditions use polyclinics. In contrast, 80 percent of people chose public hospitals. Most choose a "B" level hospital wards. Only 20 percent of people chose private hospitals for care. About half of all care provided in private hospitals is to noncitizens of Singapore.

7. **The government implements several other measures to control costs,** as described by Haseltine (2013). The private hospitals are kept in check as they compete with patient incentives and subsidies in public hospitals. The government fixes the proportion of different hospital ward classes, setting guidelines for care and for hospital ward charges in public hospitals. It is involved in bulk-buying of drugs and makes decisions about investment in new technology. The government also determines the number of medical students and licensed doctors.

Figure 6. Singapore Healthcare Financing System



Source: Tan (2015)

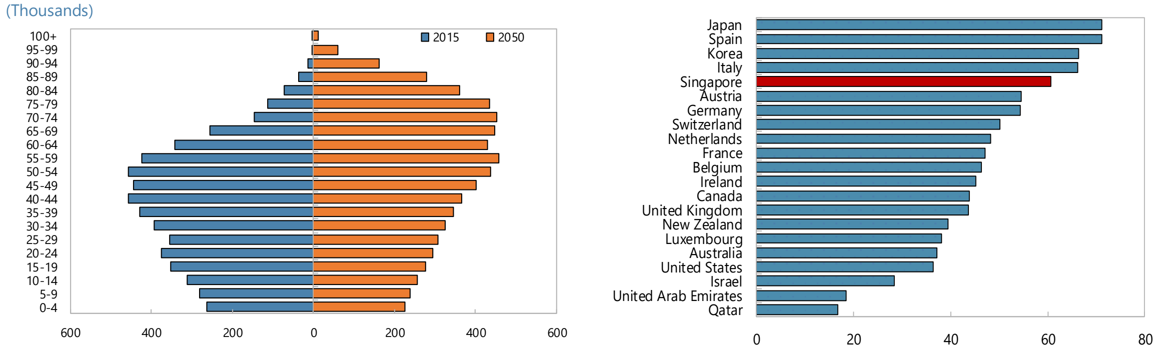
C. Challenges Ahead

8. **Singapore's old age dependency is expected to increase rapidly.** Population growth is expected to turn negative in 2030-35 (United Nations, 2017). According to UN projections, the old-age dependency ratio is expected to increase to 61 percent in 2050, relatively high among advanced economies, though below Japan and Korea (Figure 7).

Figure 7. Rapid Population Aging

Singapore: Total Population by Age Group
(Thousands)

Old-Age Dependency Ratio in 2050



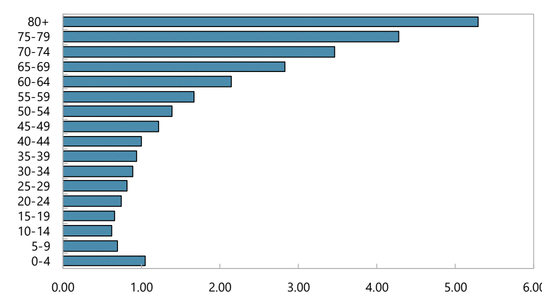
Source: United Nations.

Source: United Nations.

Note: Old-age dependency defined as population 65+ years of age/ population 15-64 years of age.

9. **The elderly consume disproportionately more healthcare services.** Healthcare costs escalate with age and tend to be concentrated in the elderly (Figure 8). In Singapore, persons aged 65 and over accounted for more than 50 percent of the total hospitalization days in 2017, despite being only 13 percent of the resident population. The average length of stay for this age group was also longer, at 9.3 days, compared to 4.8 days on average across all patients.

Figure 8. Age-Distribution of Spending, Average Across Advanced Economies
(Normalized, age 40-44=1)



Source: United Nations

10. Healthcare spending has been rising notably in recent years, due to aging and other factors. Total healthcare expenditure rose by 1.1 percent of GDP between 2000 and 2016 (Figure 9). While aging was an important contributing factor, excess cost growth—which arise from non-demographic factors—explains close to half of the increase.[7]

11. Government spending has taken up an increasing share of the burden. Government healthcare spending has doubled over the last 10 years, from 1 percent of GDP in 2008 to 2.2 percent of GDP in 2018 (Figure 10). Most of the increase is explained by rising operating expenditure, arising from the introduction of MediShield Life, enhanced subsidies in outpatient and long-term care settings, provision of means-tested government subsidies for premiums, and the introduction of cohort-based packages.[8] Development expenditure has increased modestly with the construction of new hospitals.

12. Estimates suggest that total healthcare spending in Singapore could double by 2050. Following the methodology of Soto, Shang, and Coady (2012), staff forecasts healthcare spending using 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 (which is broadly in line with the average for advanced countries). The estimates show that total healthcare spending in Singapore could rise to 8.6 percent of GDP in 2050, from 4.4 percent in 2015, driven roughly equally by population aging and by excess cost growth (Figure 11).[9] The net present value of such a health care spending change is close to 60 percent of GDP. These estimates are in the ballpark of those by Tan (2015), who estimates that per capita healthcare expenditure will double by 2060, and total health expenditure would reach 8.7 percent of GDP.

13. Nonetheless, there is considerable risk that costs are well above these estimates. Costs would be considerably higher if age-specific utilization rates continue rising. This would be the case if chronic disease becomes more prevalent amid a longer life expectancy (Yoong, Lim and Lin, 2017) or if rising affluence leads to greater healthcare consumption and expectations for higher quality healthcare (Lim, 2017). Supply-side costs could also be higher. For instance, wage inflation in the healthcare sector could surge as the labor force shrinks. Medical technology advancement and experimental treatments could also raise costs.

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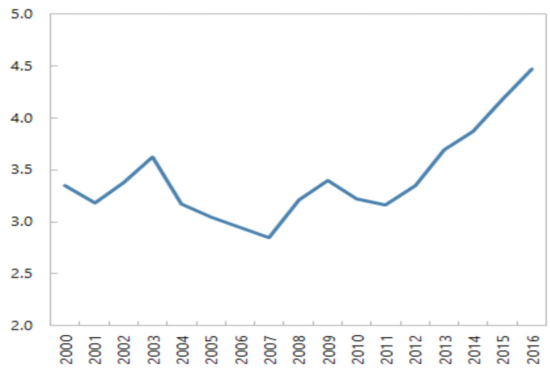
[7] Excess cost growth is defined as the growth in public health spending in excess of GDP growth after controlling for aging. Excess cost growth is attributable to the combined effect of non-demographic factors, including rising incomes, technological advances, the Baumol effect (when the prices of government services grow faster than the average price level in the economy), and health policies and institutions.

[8] Cohort packages include the Pioneer Generation Package (for those born on or before 31 Dec 1949), which was introduced in 2014. The Merdeka Generation Package (for those born between 1950 and 1959) was introduced in 2019.

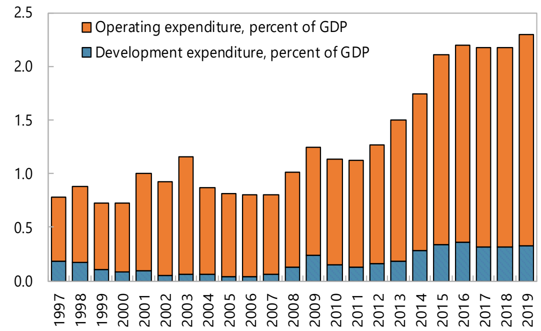
[9] Using Singapore Department of Statistics (DOS) forecasts for old-age dependency instead of UN projections gives similar results. The UN's population projections are based on the total population of Singapore, i.e. residents and non-residents, whereas DOS's population projections are based on the resident population, which comprises Singapore citizens and permanent residents. DOS projects that old-age dependency will reach 44 percent in 2040 (depending on the scenario) compared to a UN forecast of 51 percent. Estimates using the DOS population numbers suggest healthcare costs could rise to just above 8 percent by 2050.

Figure 9. Singapore: Total Health Expenditure
(Percent of GDP)



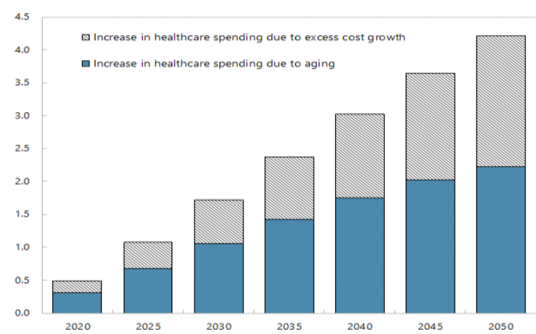
Source: World Health Organization and IMF staff estimates.

Figure 10. Singapore: Government Healthcare Spending
(Percent of GDP)



Source: Ministry of Finance Singapore.

Figure 11. Estimated Increase in Healthcare Spending, 2015 to 2050
(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

14. With these challenges in mind, the Ministry of Health has adopted a strategic vision based on three key shifts in the health-care sector:

- *Beyond healthcare to health.* Investing upstream in health promotion, disease prevention, and screening to promote good health (e.g. Screen for Life, National Steps Challenge).
- *Beyond hospital to community.* Transform care models and strengthen financing framework to right-site patients away from acute and intensive settings to more cost-effective care in the community (e.g. primary care networks and Telemedicine)
- *Beyond quality to value.* Focus on cost-effective treatments and value driven care. Improve productivity through innovation and working in collaboration with industry (e.g. supply chain management across public healthcare institutions to reap economies of scale).

15. The government will likely face pressure to take on a larger share of the cost burden to preserve affordability. The balance between private and public healthcare spending going forward will depend on social and political preferences. However, given the magnitude of the expected cost increase and the need to maintain adequate access, the government will need to identify additional sources of funding. The authorities have already announced their intention to raise the Goods and Services Tax from 7 to 9 percent sometime between 2021-25, which would raise revenue by 0.7 percent of GDP per year. Staff is of the view that greater use of the net returns on government assets could also be explored.

Table 1. Healthcare Schemes and Subsidies

Scheme	Financing	Benefits	Eligibility
Mandated Savings			
MediSave	Funded from Central Provident Fund (CPF).	MediSave can be used to pay for an individual's own/ immediate family members' health insurance premiums, hospitalization expenses, certain outpatient expenses, and long-term care. Withdrawals are subject to limits to ensure that sufficient savings remain in the MediSave Account for basic healthcare needs in old age.	Any CPF member who contributes to MediSave and has a positive MediSave balance
Government Insurance Plans			
MediShield Life	MediSave Means-tested premium subsidies of up to 50 percent.	MediShield Life is a catastrophic insurance plan, administered by the CPF Board, which helps to pay for large hospital bills and selected costly outpatient treatments. MediShield Life is sized for subsidized treatment in public hospitals and pegged at B2/C-type wards.1/	Singaporean citizens (SC) and Permanent Residents (PR)
CareShield Life New in 2020	MediSave Means-tested premium subsidies of up to 30 percent.	CareShield Life is a basic long-term care insurance scheme in the event of severe disability that features higher payouts that increase over time with no cap on payout duration.	SC and PR born 1980 or later Cohorts born in 1979 or earlier may join the scheme from 2021 onwards if they are not severely disabled.
ElderShield	Medisave	ElderShield is a severe disability insurance scheme for long-term care. Monthly cash benefits of $400 for 72 months or $300 for 60 months, depending on the ElderShield scheme the policyholder is enrolled in	CPF members automatically enrolled at age 40, unless they opt out
Interim disability assistance program for the elderly		Provides financial help to disabled elderly Singaporeans who were not eligible to join ElderShield when it was launched in 2002 because they had exceeded the maximum entry age or had pre-existing disabilities.	SC
Government Subsidies			
MediFund	Government endowment fund	MediFund provides a safety net for patients who face financial difficulties with their remaining bills after receiving Government subsidies and drawing on other means of payment including MediShield Life, MediSave and cash. The actual amount of assistance depends on financial, health and social circumstances, as well as the size of the medical bill incurred.	SC
Community Health Assist Scheme (CHAS)		The scheme enables lower- to-middle income households, as well as all Pioneers and Merdeka Generation seniors, to receive subsidies for medical and dental care.	SC and household monthly income per person is $1,800 or below
ElderFund New in 2020		Scheme targeted to assisting severely disabled lower-income Singaporeans aged 30 and above who are not able to join CareShield Life, or have low MediSave balances and inadequate personal savings to meeting their long-term care needs. Cash benefits up to $250 per month	SC
Drug Subsidies and Schemes	Ministry of Health	Means-tested subsidies for drugs	SC and PR
Enhanced Screen for Life		Subsidized screenings, recommended based on age and gender.	SC and PR
Subsidies for Government-Funded Intermediate and Long-term Care Services.		For persons who need further care and treatment after being discharged form an acute hospital as well as community-dwelling elderly who may need supervision or assistance with their activities of daily living.2/	SC and PR
Foreign Domestic Worker (FDW) Levy Concession for Persons with Disabilities		To support households who need to hire FDW to care for seniors and disabled persons by paying a lower monthly concessionary FDW levy. A concessionary FDW levy rate of $60.	SC and PR
Seniors' mobility and Enabling Fund		Provides subsidies to offset the costs of assistive devises and home healthcare items.	SC and PR
Foreign Domestic Worker Grant		Monthly grant of $120 for families who hire FDWs to care for persons with moderate to severe disabilities.	SC and PR
Private Medical Insurance			
Integrated Shield Plan	MediSave, but only up to Additional Withdrawal Limits.	Comprises MediShield Life and private insurance coverage providing additional benefits and coverage (e.g. to cover the costs of private hospitals or A/B1-type wards in the public hospitals).1/	SC and PR

Source: Ministry of Health.
1/ There are 5 hospital ward classes: A, B1, B2, B2+, and C. A costs the patient most, and C the least. A-class patients have a private room with a bathroom, air conditioning, and access to private doctors of their choice. C-class patients are in open wards, eight to nine in a room, sharing a bathroom, and without air-conditioning.
2/ The six Activities of Daily Living (ADL) are eating, washing, dressing, transferring, toileting and walking or moving around.

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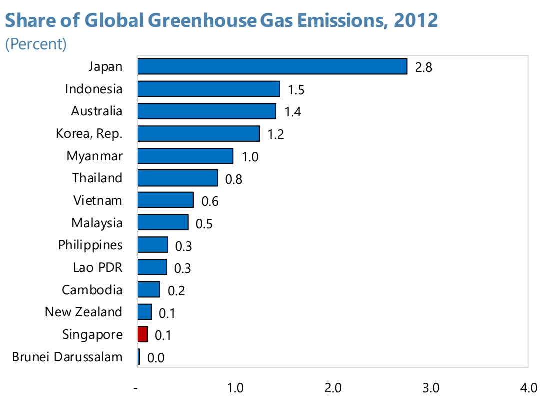
Appendix VI. Global Greenhouse Gas Emissions and Carbon Taxation[1/]

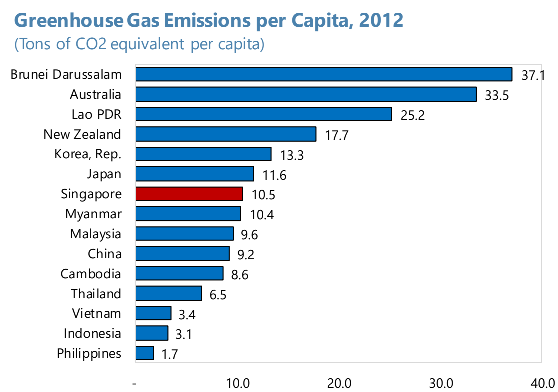
While Singapore has a moderate contribution to global greenhouse gas (GHG) emissions, it has taken early actions to reduce its GHG footprint. Most recently, Singapore adopted a carbon tax that came into effect in January 2019. Together with other mitigation efforts, Singapore is on track to meet its commitments under the Paris Climate Agreement.

1. Singapore has a moderate contribution to global greenhouse gas (GHG) emissions. Singapore accounted for about 0.1 percent of global emissions in 2012. GHG emissions per capita in Singapore, at 10.5 tons of CO2 equivalent, are lower than in other advanced countries in Asia (Figure 1).

Figure 1. Selected Asian Countries: Global Greenhouse Gas Emissions, 2012



Source: World Development Indicators, and IMF staff estimates.



Source: World Development Indicators, and IMF staff estimates.

2. Power generation and industry account for most GHG emissions. Power generation, which relies almost fully on natural gas, accounts for 39 percent of emissions. Industry accounted for 46 percent of emissions, followed by transport at 14 percent (Table 1). Fuel sources are mainly oil and natural gas, with coal only having a minimal contribution (Figure 2).

3. Singapore has limited access to renewable energy. Singapore has one of the highest population densities in the world (7,804 people per km^2). The island's urban density and limited land area, relatively flat land, low wind speeds and lack of geothermal resources present serious difficulties in pursuing alternative energy options such as nuclear, hydro-electric, wind or geothermal power (UNFCCC, 2018). Harnessing solar energy in a significant way is a challenge due to competing uses for limited land.

[1] Prepared by Laura Jaramillo.

4. Singapore was among the first wave of countries to ratify the Paris Climate Agreement.[2] Singapore's Nationally Determined Contribution (NDC) to the 2015 Paris Agreement on climate change is to reduce emissions intensity (GHG emissions per unit of GDP at 2010 prices) by 36 percent from 2005 levels by 2030 and to stabilize total GHG emissions with the aim of peaking around 2030.[3]

5. Early actions have helped Singapore reduce its GHG footprint. The National Environment Agency reports that Singapore's emissions intensity decreased by 37 per cent from 2000 to 2014, while energy intensity decreased by 33 per cent. A key measure was the switch in electricity generation from fuel oil to natural gas, the cleanest form of fossil fuel. In 2017, natural gas represented 95 percent of the energy mix. Moreover, Singapore prices energy at market cost, without any subsidy. At the same time, Singapore has expanded its solar energy capacity, going from less than 5 MWp of installed Solar- Photovoltaic capacity in 2010 to more than 200 MWp in 2018. In addition, various schemes were introduced to promote energy efficiency, such as the Green Mark Scheme for buildings, and the Resource Efficiency Grant for Energy (REG(E)) and Genco Energy Efficiency Grant Call for the industry and power sectors respectively.

6. As part of its efforts to meet the Paris Pledge, Singapore adopted a carbon tax in 2019.[4] The carbon tax came into effect in January, targeting direct emissions from large emitters to balance between maximizing emissions coverage while keeping the compliance burden manageable. It will start at S$5 per ton of GHG emissions from 2019 to 2023 and will be reviewed by 2023 with the intention of increasing it to between S$10 and S$15 per ton of GHG emissions by 2030. The tax covers about 40 companies that contribute to some 80 percent of total emissions, including companies in the refining, petrochemicals, and power sectors. The tax is applied uniformly without exemptions to provide a transparent, fair, and consistent carbon price signal across the economy.

7. The carbon tax is likely to have a modest impact on businesses and households, except for the largest emitters. Sub-sectors that are more carbon-intensive (e.g. refining, petrochemical, electronics, power) will face a higher impact. For most sub-sectors, including SMEs, the impact is likely to be through increases in electricity prices. The National Climate Change Secretariat (NCCS) estimates electricity tariffs to increase by about 1 percent. Similarly, the impact on households is expected to be relatively small. For households living in public housing, the carbon tax is estimated to result in a S$3.60 to S$13.20 per year increase in average total electricity and gas bill. Households

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[2] Singapore is also working with other emitters around the world on efforts to reduce carbon emissions from the aviation and maritime industries.

[3] NDCs are not legally binding, and there are no penalties for non-compliance. However, all countries are required to report (every two years starting in 2020) progress on NDCs, subject to a common external verification procedure. Countries are also required to submit updated NDCs every five years, which are expected to be progressively more stringent.

[4] IMF (2019) suggests that Singapore is on track to meet its pledge.

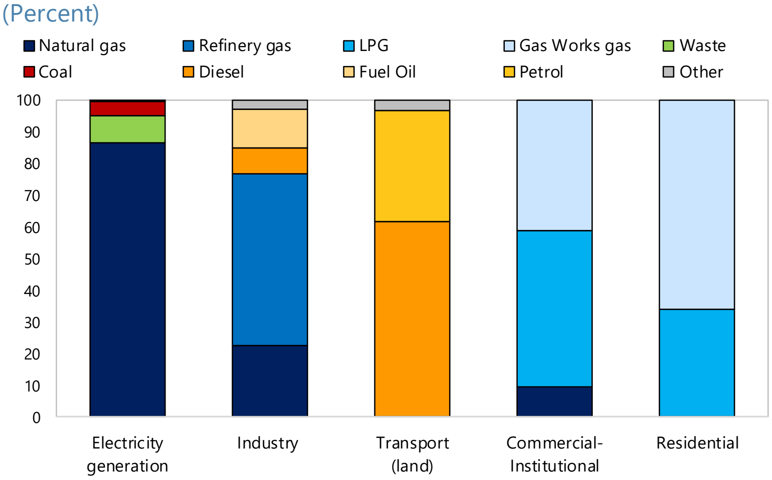
living in public housing will receive transitional assistance for S$20 per year from 2019 to 2021 to offset part of their utilities bill.[5]

Table 1. Singapore: Breakdown of Emissions by Sector, 2014

Sector	Share of total emissions (percent)
Power	38.49
Industry	45.95
Transport	13.56
Commercial-institutional	0.96
Residential	0.41
Waste	0.63
Electricity End-Use Sector	**Share of total electricity consumption (percent)**
Industry	42.57
Commerce & Service	36.74
Household	14.92
Transport	5.26
Others	0.51

Source: Singapore's Fourth National Communication and Third Biennial Update Report, December 2018
Note: Share is based on total GHG emissions for 2014 that totaled 50.9 gigagram CO_2-equivalent, 95.5 percent of which is from CO_2.

Figure 2. Share of Total Emissions by Fuel Type Across Sectors
(Percent)



Source: Singapore's Fourth National Communication and Third Biennial Update Report, December 2018.

8. **Carbon tax revenue will help to fund emissions mitigation measures**. Revenues from the carbon tax are estimated at about S$1 billion over 5 years (0.2 percent of GDP cumulatively). The government has enhanced support for energy efficiency through existing grants and is prepared to

[5] National Climate Change Secretariat (NCCS).

spend more than the carbon tax revenue collected over the first five years to support worthwhile projects.

9. Singapore imposes excise duties on diesel, petrol and compressed natural gas to manage car usage and its associated health and environmental impact.[6] The excise duty on diesel was doubled from $0.1 per liter to $0.2 per liter as of February 2019. In 2018, the government announced that an additional carbon tax would not be levied on diesel, petrol or CNG as existing excise duties already discourage the use of these fuels. The government also committed to reviewing and adjusting the excise duties periodically.

10. Additional mitigation efforts will further help Singapore achieve its Paris Pledge. Singapore is aiming to increase solar deployment from 200 MWp in 2018 to 350 MWP by 2020, and 1000 MWp beyond 2020. By 2030, it is estimated that renewable energy could potentially contribute up to 8 percent of Singapore's peak electricity demand. The public transportation network will be expanded with the goal that, by 2040, during peak times 9 out of 10 trips will be on public transportation. Better connectivity will be achieved by doubling the rail network by 2030, increasing cycling paths, and expanding the sheltered walkway network. Other measures include doubling water supply without using more energy, increasing the overall recycling rate of water, mandatory energy labelling scheme, minimum energy performance standards for household products, and Green Mark Certification for buildings.

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[6] Parry and others (2014) describe three negative externalities arising from petroleum consumption. First, carbon emissions from petroleum usage accelerate global warming. Second, fossil fuels cause local air pollution, which can lead to health problems and premature deaths. Third, there should be heavier taxation of gasoline and diesel to lower congestion (which lowers productivity) and reduce traffic accidents (which cause injuries and deaths).

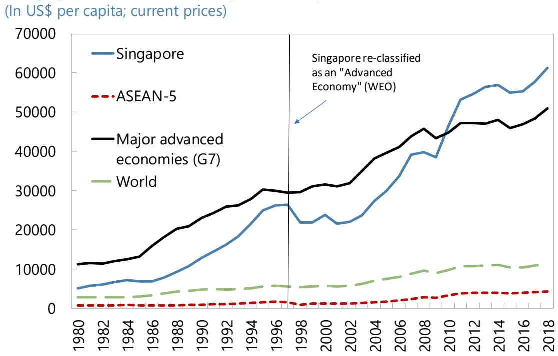
Appendix VII. A Long-Term Perspective on the Monetary Policy Framework and Business and Financial Cycles in Singapore[1]

Singapore has rapidly converged to advanced economy income levels and the monetary policy framework has worked well to deliver low and stable inflation. In recent years, the framework has been augmented with increased use of macroprudential policies to ensure financial stability objectives. Singapore has proactively used macroprudential policy against the background of low global interest rates and this may have contributed to a relatively low synchronization of the financial cycle with its global counterpart. Interestingly, however, the real business cycle shows more synchronization with proxies for the global cycle but with higher volatility. This underscores the importance of maintaining strong precautionary buffers to complement existing policy frameworks.

A. Monetary Policy Framework that Delivered Price Stability in the Context of Rapid Convergence…

1. Singapore has rapidly converged to Advanced Economy (AE) per capita GDP levels. Since 1981, the operating instrument of the monetary policy framework has been the nominal effective exchange rate. During this time, real growth of GDP averaged 6.3 percent and this has led to a rapid closing of the gap compared to advanced economy levels. On a trend basis, the per capita GDP growth rate has shown a secular decline as the gap compared to advanced economies was closed (Text Table). Against this background, Singapore was reclassified as an advanced economy by major international institutions in the mid-1990s. The growth differential with the regional comparators has also widened during the past four decades.

Singapore - GDP Per Capita Comparison
(In US$ per capita; current prices)



Sources: IMF, WEO Database

[1] Prepared by Dan Nyberg and Han Teng Chua.

Table 1. Singapore – Real GDP Growth
(In percent, average)

	1980-89	1990-99	2000-09	2010-18
Singapore	7.8	7.3	5.3	5.3
Real GDP growth per capita (HP trend)	6.9	4.2	3.0	2.4
ASEAN-5	5.7	5.2	5.0	5.3
Major advanced economies (G7)	3.3	2.5	1.5	1.9
World	3.2	3.1	3.9	3.8

Source: IMF, WEO.

2. **Despite the rapid convergence in incomes, monetary policy has achieved low and stable inflation outcomes over time.** MAS' primary objective is to promote medium-term price stability as a basis for sustainable economic growth. Indeed, since 1980, the headline inflation rate has averaged 2 percent, somewhat lower than major AE average of 2.9 percent (see text table), including high inflation periods in AEs such as the early-1980s.

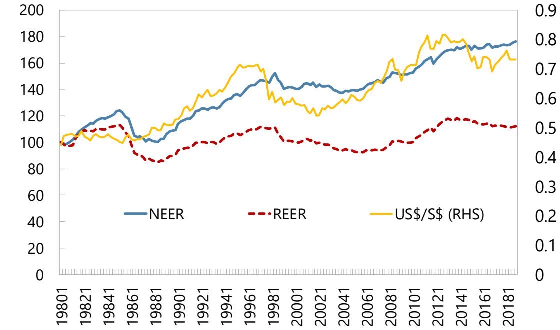
Table 2. Singapore – A Long-Term Perspective on Inflation
(Headline inflation; In percent)

	1980-89	1990-99	2000-09	2010-18
Singapore	2.8	1.9	1.5	1.8
ASEAN-5	13.9	10.3	5.8	3.9
Major advanced economies (G7)	5.6	2.6	1.9	1.5
US	5.5	3.0	2.6	1.8
World	16.8	20.2	4.3	3.9
Hong Kong SAR	7.4	6.9	-0.2	3.3

Source: IMF, WEO.

3. The exchange rate regime is characterized by a "basket, band and crawl" framework. There are three main features of the exchange rate system in Singapore: (i) the Singapore dollar is managed against a basket of currencies of major trading partners; (ii) MAS operates a managed float regime for the Singapore dollar with the trade-weighted exchange rate allowed to fluctuate within an undisclosed policy band; and (iii) The exchange rate policy band is periodically reviewed to ensure that it remains consistent with the underlying fundamentals of the economy. Given Singapore's open current and capital accounts, the exchange rate-based system implies that domestic interest rates and monetary aggregates are endogenously determined.

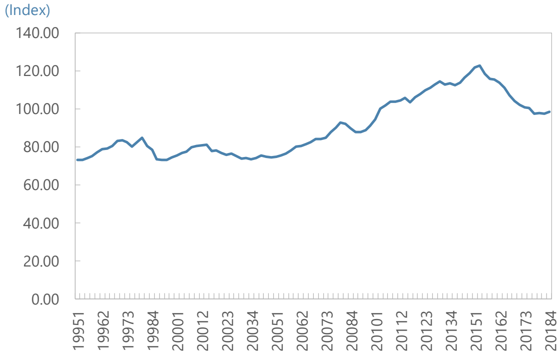
Singapore - Exchange Rates
(Index, 1980Q1=100)



Sources: Haver Analytics, and Fund Staff calculations

4. The policy framework has also delivered long-term trend appreciation of the exchange rate. With the rapid productivity growth and negative inflation differential, the NEER has trend appreciated. On average, the NEER has appreciated by around 140 basis points per year. The REER has been broadly stable over the past 40 years.

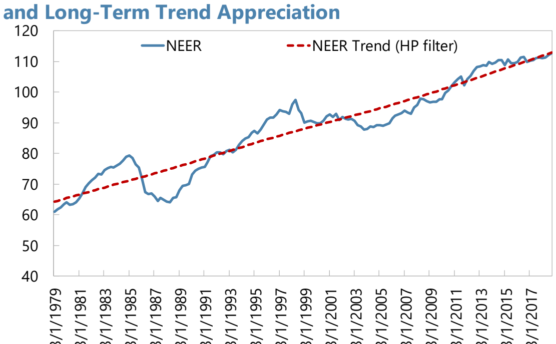
Singapore - REER based on Unit Labor Costs
(Index)



Sources: IMF, IFS

B. ... augmented with increased use of macroprudential policies in recent years.

Singapore - Nominal Effective Exchange Rate and Long-Term Trend Appreciation



Sources: Haver Analytics and Fund staff calculations

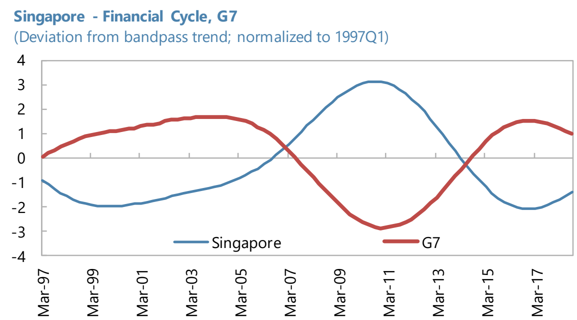
5. In recent years, MAS has actively used macroprudential policies to target financial stability risks, particularly in the real estate sector. [2] MAS is both the micro- and macroprudential supervisor of the financial sector in Singapore. In this context, MAS formulates macroprudential policy as complement to monetary policy in order to mitigate systemic risks. MAS together with other government agencies have been active in managing property market developments through prudential measures such as limits on total debt servicing ratios and loan-to-value (LTV) ratios, as well as stamp duties and supply-side measures. Other financial stability risks

[2] See "MAS' Approach to Macroprudential Policy", Monetary Authority of Singapore, January 2019.

addressed through macroprudential policy include designating domestic systemically important banks, limits to property exposures and a counter-cyclical capital buffer framework.

C. …which may explain the low synchronization of domestic and global financial cycles

6. Increased reliance on macroprudential policy may have led to the observed asynchronous movement of the domestic and global financial cycles. To construct an estimate of the financial cycle from 1997-2018, we use an average of (1) credit-to-GDP ratio; (2) total credit to private non-financial sector; and (3) residential property prices, filtered by the Christiano-Fitzgerald (2003) bandpass filter. The concordance statistic with the estimated G7 financial cycle is around 0.2 (see Box 1 for methodology and data transformations). This relatively low financial cycle synchronization likely reflects the rapid growth convergence (and financial deepening) of Singapore, as well as idiosyncratic shocks such as the impact of the Asian financial crisis, and policy responses including macroprudential policies.

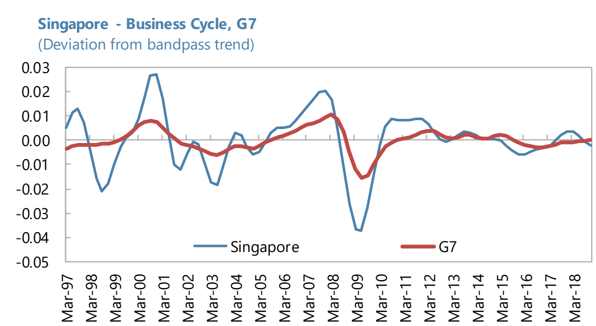


Source: Haver, OECD and Fund Staff Calculations

D. Domestic and Global Business Cycle Have Been More Synchronized Than Financial Cycles

7. Singapore's business cycle shows high concordance with the global cycle, but also more volatility. Using a bandpass filter (Box 1), the business cycle in Singapore appears to have a higher amplitude than the global cycle (proxied by United States and G7). Indeed, the standard deviation is roughly twice as high as for the US. The higher volatility of Singapore's business cycle likely reflects the smaller economic size and high trade dependence. Concordance, which measures the degree of co-movement over the cycle, is around 0.7 with the US over the entire sample period (see Figure 1 for selected charts).

8. Business and financial cycle analysis suggests an important role for buffers and macroprudential policies in helping with stabilization. Analysis of business cycle synchronization indicates high cyclical concordance between Singapore's cycle and proxies for the global business cycle. However, as a small and very open economy, Singapore's cycle depicts higher volatility, suggesting the importance of maintaining strong precautionary buffers in both the corporate and household sectors to manage short-term swings in the global economic cycle, while maintaining the medium-term focus on price stability. The financial cycle in Singapore shows less synchronization



Source: Haver and Fund Staff Calculations with its global counterpart, especially in the post-GFC period where global interest rates have been low, which could result from Singapore's proactive use of macroprudential measures as part of the macroeconomic policy framework to limit excessive credit and house price growth.

Box 1. Business and Financial Cycle Estimation

There are many ways to estimate the business and financial cycles. This approach uses a bandpass filter to separate short-term and medium-term cyclical characteristics.

Business cycle. Following the approach in Franks et al (2018), the bandpass filter developed by Christiano and Fitzgerald (2003) is used to measure the business cycle, defined as the short-term cyclical component of real, seasonally-adjusted GDP, with the duration of short-term cycles is set at 5 to 32 quarters.

Financial cycle. The financial cycle is estimated as in Drehmann et al. (2012) using the year-on-year percentage change in the credit-to-GDP ratio, credit to the non-financial private sector, and residential property prices. The credit data are from come from the BIS. Credit and residential property prices are in real terms (deflated by CPI in annual growth rates, from the OECD) and in year-on-year percentage change. To separate time series into a trend and a cyclical component at specific frequency intervals, the bandpass filter developed by Christiano and Fitzgerald (2003) is used. The financial cycle is then defined by the average of the medium-term cyclical component of the three time-series, with their duration is set at 5 to 32 quarters and 32 to 120 quarters, respectively.

Cyclical synchronization measurement

To estimate the degree of synchronization of business cycles and financial cycles, the concordance statistic is used. It measures the degree of co-movement between cycles. Following Harding and Pagan (2002), the concordance statistic, Cxy, for variables x and y is defined as:

$CIxy = \Sigma[Ctx \cdot Cty + (1 - Ctx) \cdot (1 - Cty)]$

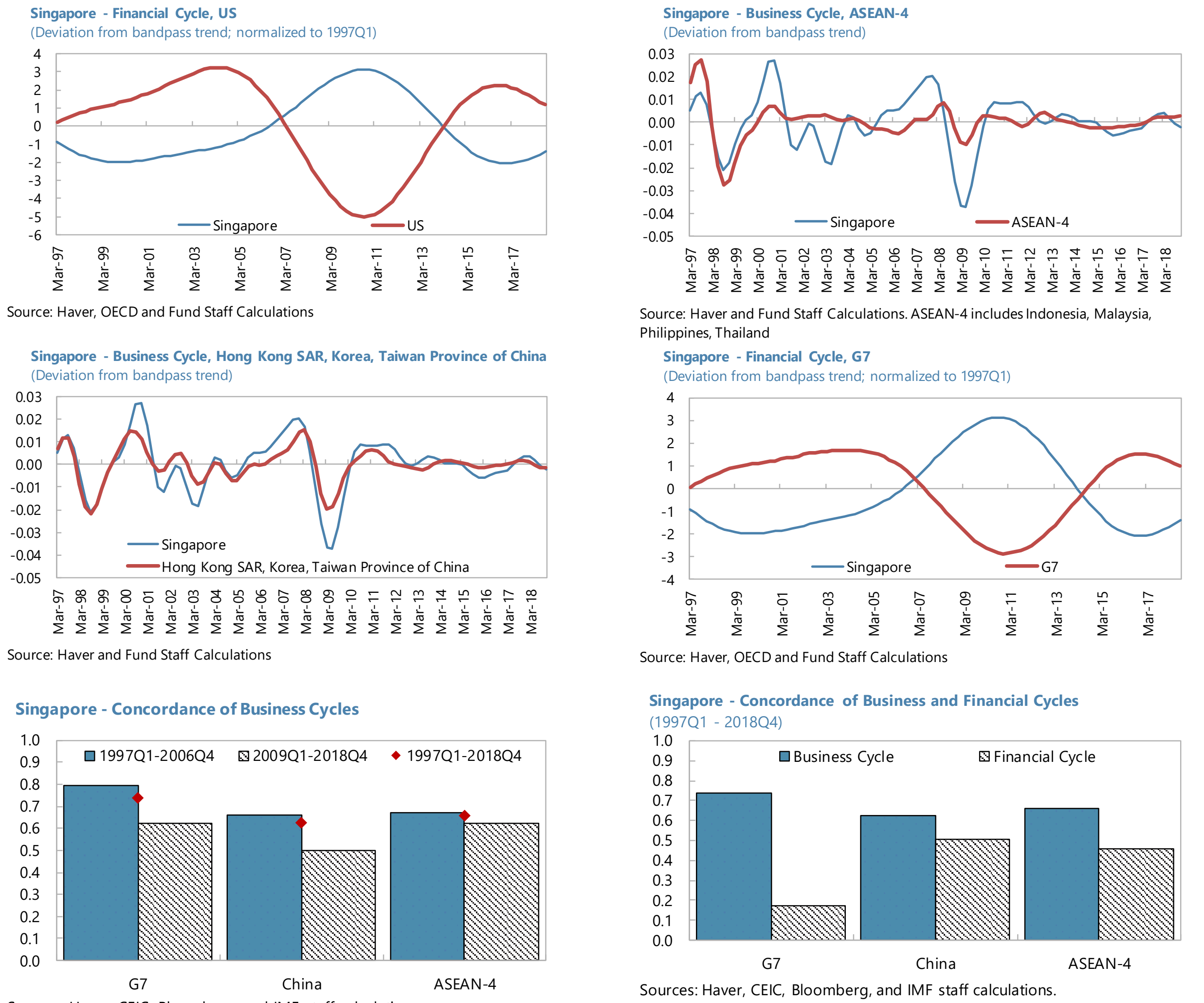
where

Ct = {0,if x is in recession phase at time t; 1,if x is in expansion phase at time t}x

Ct = {0,if y is in recession phase at time t; 1,if y is in expansion phase at time t}

The concordance static is between 0 and 1, where the series are completely pro-cyclical (countercyclical) if the concordance statistic is equal to one (zero). A number between 0 and 1 corresponds to the fraction of time that two series are in the same phase of their respective cycles.

Figure 1. Business and Financial Cycles



Source: Haver, OECD and Fund Staff Calculations

Source: Haver and Fund Staff Calculations. ASEAN-4 includes Indonesia, Malaysia, Philippines, Thailand

Source: Haver and Fund Staff Calculations

Source: Haver, OECD and Fund Staff Calculations

Sources: Haver, CEIC, Bloomberg, and IMF staff calculations.

Sources: Haver, CEIC, Bloomberg, and IMF staff calculations.
Note: Data for ASEAN-4 financial cycle begin from 2003Q1.

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Drehmann, M., C. Borio, and K. Tsatsaronis (2012), “Characterising the financial cycle: Don’t lose sight of the medium term!”, *BIS Working Papers*, no. 380.

Franks et al, (2018), “Economic Convergence in the Euro Area”, IMF WP 18/10.

Harding, D., and A. Pagan (2002), “A Comparison of two Business Cycle Dating Methods,” *Journal of Economic Dynamics and Control*, Vol. 27, pp. 1681-690.

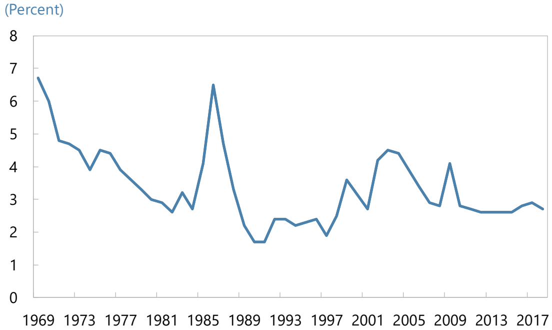
Appendix VIII. Labor Market Policies[1/]

Labor market resilience in Singapore is underpinned by policies that boost labor productivity. Enhanced support targets specific vulnerabilities facing different segments of the workforce. Active labor market policies are in place to help workers reskill and adapt to changing job market needs. Income support is available for employed lower-wage workers to incentivize them to remain employed. A key challenge is for programs to continuously adapt to the rapidly changing nature of work.

A. Creating Jobs for the Workforce

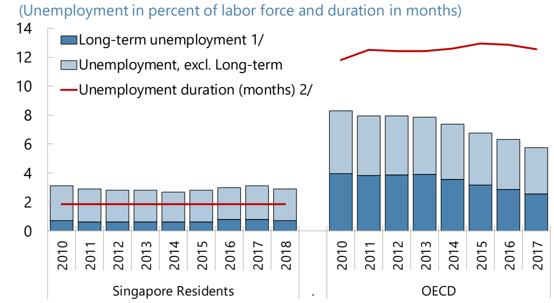
1. **Labor market outcomes have been strong in Singapore.** The unemployment rate has been stable and low for many years, a little above 2 percent among the total labor force including nonresidents and about 3 percent among residents alone. The median unemployment duration among residents has been steady at 8 weeks, significantly shorter than in most countries. The resident long-term unemployment rate (at least 25 weeks) is very low, at 0.7 percent in 2018. These indicators signal the resilience of the labor market in Singapore.

Singapore: Resident Unemployment Rate
(Percent)



Sources: Haver Analytics.
Note: The comparability of the data before and after 1992 may be limited due to a revision in the underlying survey coverage and methodology.

Resident Unemployment: Rate and Duration
(Unemployment in percent of labor force and duration in months)



Sources: Singapore Ministry of Manpower, OECD, and IMF staff calculations.
Note: 1/ Singapore defines long-term unemployment as unemployment for at least 25 weeks; OECD rates are re-calcluated accordingly to be consistent. 2/ For Singapore, it shows the median unemployment duration among unemployed residents. The OECD average unemployment duration is an unweighted average among the countries whose data are available (11).

2. **These labor market outcomes are underpinned by policies that focus on supporting competitiveness and increasing labor productivity.** In the 1970s and 80s, the government actively promoted export-led industrialization by attracting foreign direct investment and multinationals. The government put in place infrastructure, invested in education and training, and conducted sound policies to ensure macroeconomic stability. Growth was strong, and the economy achieved full employment. To maintain competitiveness, concerted efforts across unions, employers, and the government have been made to align real wage and productivity growth and to promote a flexible wage system (Inagami, 1988).[2] In 1979, the government set up a system where all employers pay a levy for all their employees which is then channeled through the Skills Development Fund to finance skills upgrading of the workforce, such as today's SkillsFuture. Increasing productivity through skills building has become even more important as Singapore moves toward skills- and technology-

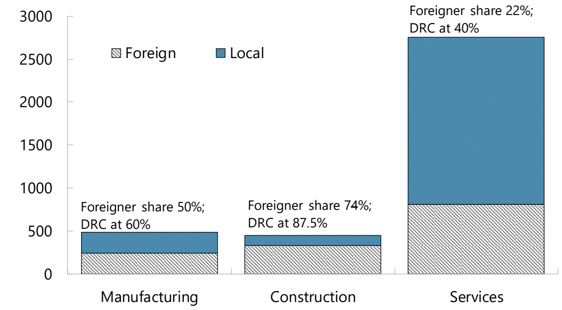
[1] Prepared by Jiae Yoo.

[2] The National Wage Council is a tripartite body comprising the union, employers, and the government established in 1972. One of its main tasks is to make recommendations on wage structure and management in line with the long-term development.

intensive industries, while facing demographic headwinds. These have laid a firm ground for a resilient labor market and strong employment outcomes.

3. **Managing the flow of foreign labor has been an important part of labor policy.** Foreign labor and skills help Singapore's growth to be unconstrained by the small population, fill the skills gap, and maintain competitiveness by relieving wage pressures. They also help manage cyclical labor demand in the market (Yap, 2014). To keep the reliance on foreign workers in check, however, the government sets industry-specific ceilings on the foreign worker dependency ratio and imposes a foreign worker levy. As the share of foreign labor rose to about 1/3 of the total workforce by 2010, the government started to tighten the measures to gradually curb the growth of lower-skilled foreign labor. In 2019, the government announced a plan to reduce the service sector's dependency ratio ceiling (DRC) for mid- and semi-skilled foreign workers from 40 percent to 35 percent and to reduce the sub-DRC quota for mid-skilled foreign workers from 15 to 10 percent by January 1, 2021. This aims to support local workers' employment outcomes and encourage the sector to raise productivity.

Singapore: Employment by Residential Status as of end-2018
(Thousands of people; DRC = Dependency Ratio Ceiling)

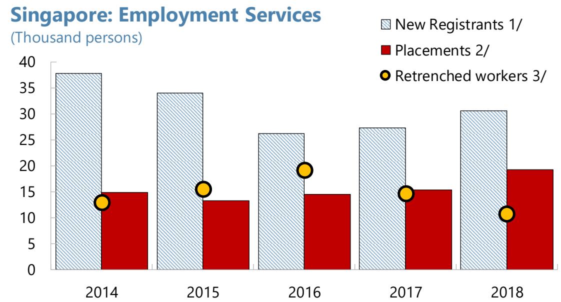


Sources: Ministry of Manpower.
Note: Foreign share of employment includes Employment Pass holders, while DRC does not apply to Employment Pass holders.

B. Active Labor Market Policies and Enhanced Support to Address Specific Vulnerabilities

4. **Public employment services play an important role in Singapore.** Public employment services (PES) aim to make job matching more efficient and potentially improve the match quality by reducing informational frictions. In Singapore, a network of five career centers (each a one-stop shop for PES), offer job search assistance, career guidance and counselling, as well as career events and workshops for all skill levels. These centers play a significant role in the job market: the number of placements through the PES was more than 19,000 in 2018. This, put in perspective, is beyond the number of workers who are retrenched during the same year (11,000) and about 30 percent of the annual average number of unemployed residents (67,000) in 2018.

Singapore: Employment Services
(Thousand persons)



Sources: Workforce Singapore, Singapore Ministry of Manpower
Note: 1/ The unique count of people registered for employment and/or training assistance at WSG's physical points and NTUC's e2i centers in the reference period. 2/ The unique count of jobseekers who were placed into employment by WSG's physical touchpoint and NTUC's e2i centers or found their own jobs after receiving the services. 3/ Retrenchment refers to the termination of permanent employees and early termination of term contract employees due to redundancy.

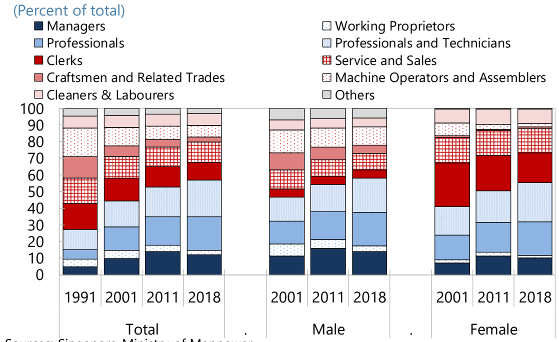
5. **Trade unions also play an active role.** Employment and Employability Institute (e2i), an initiative of the National Trade Unions Congress (NTUC) runs career centers providing career advisory and job matching services. While collaborating with the government-led initiatives, NTUC aims to react promptly to early signs of changes in the industry, leveraging on its strong connections to the unionized companies. Working with the government and employers through the Tripartite partnership, NTUC represents the unions in setting up guidelines on issues including

employment support for older workers, formulating wage guidelines, and enhancing support for low-wage workers.

6. Enhanced support is available targeting specific vulnerabilities facing different segments of the workforce. As the economy shifted toward skills- and technology-intensive industries, the composition of the workforce has also shifted toward higher-skilled occupations such as professionals, managers, executives, and technicians (PMET). PMETs account for just under 60 percent of employment in 2018. (text chart). The workers in PMET and non-PMET occupations in Singapore tend to face different challenges.

Singapore: Employed Residents by Occupation

(Percent of total)

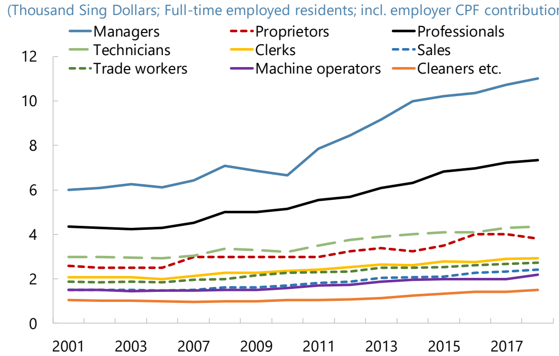


Sources: Singapore Ministry of Manpower

Note: Occupation data in 1991 is based on Singapore Standard Occupational Classification 2000 and is not strictly comparable with later years.

Singapore: Median Gross Monthly Work Income

(Thousand Sing Dollars; Full-time employed residents; incl. employer CPF contributions)

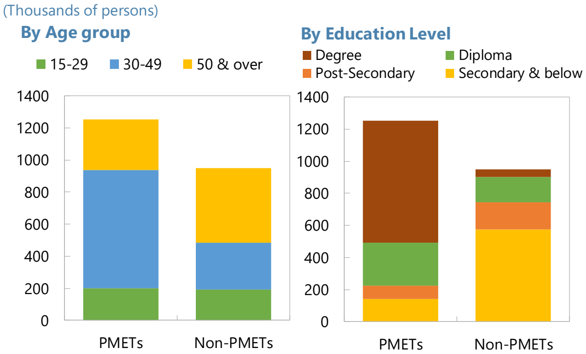


Sources: Singapore Ministry of Manpower.

7. For skilled PMET workers, vulnerabilities are likely to be in skills mismatch. PMETs tend to be younger and with higher education level (text chart). They also earn significantly higher income: the PMET median gross monthly income for full-time employed residents, excluding employers' CPF contributions, is in the range of S$4,000 – 10,000 depending on the specific occupation, compared to a median gross monthly income of S$1,500 – 2,500 among non-PMETs (clerical support workers, service & sales workers, trades, machine operators, and laborers). In recent years, however, data show that PMETs tend to be more vulnerable to retrenchment and take longer to find a job compared to non-PMETs (text chart).[3] This may indicate that skills mismatch currently is a more pronounced risk among PMETs in Singapore. Skills requirements in PMET jobs tend to be more specialized and fast-changing as automation, digitalization, and AI adoption pick up the pace. Further, it could be more challenging for older PMETs to switch jobs. For instance, they would need a bigger wage adjustment, if they had accumulated a wage premium from their past job experience which may be hard to be matched in a new job with different skills requirements.

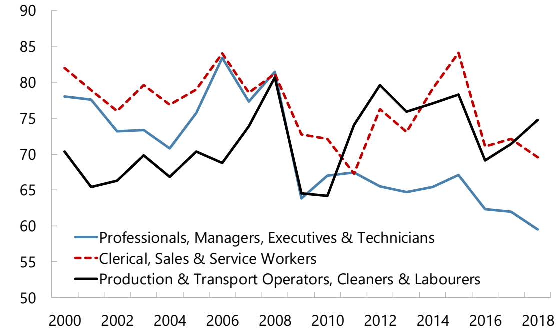
[3] Retrenchment refers to the termination of permanent employees due to redundancy and early termination of term contract employees due to redundancy. In 2018, the PMET share in total retrenchment reached 65 percent.

Singapore: Employed Residents by Selected Characteristics in 2018
(Thousands of persons)



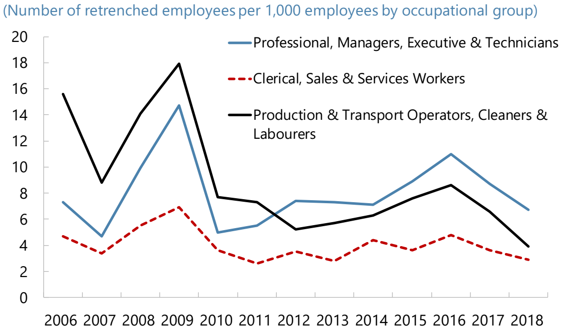
Sources: Singapore Ministry of Manpower.

Singapore: Re-entry into Employment
(Percent of retrenched residents who re-entered employment within 6 month)



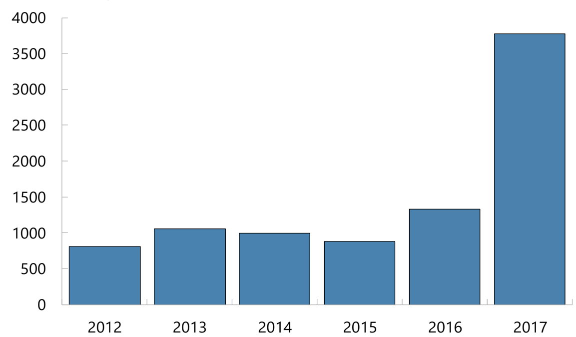
Source: Singapore Ministry of Manpower.

Singapore: Incidence of Retrenchment
(Number of retrenched employees per 1,000 employees by occupational group)



Sources: Singapore Ministry of Manpower.
Note: Retrenchment refers to the termination of permanent employees due to redundancy and early termination of term contract employees due to redundancy.

Professional Conversion Program, PMET Placements
(Number of placements)

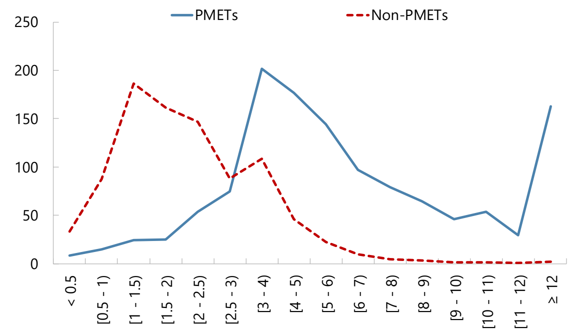


Sources: Ministry of Manpower (Workforce Singapore)

8. **Active labor market policies are in place to help workers reskill and adapt to changing job demand.** Table 1 summarizes key programs that provide on-the-job training and employment subsidies. Many programs are geared toward helping PMETs. The Career Support Programme provides wage subsidies to help with wage adjustment especially for more experienced PMETs. The largest program, Professional Conversion Programme (PCP), helps PMETs reskill for a new career by providing the subsidies for training and salary support. In both programs, subsidies are higher for more vulnerable workers such as those of age 40 and above or who have been looking for a job for 6 months or more. The subsidies have been periodically increased, and participating employers have been expanding. The recent PCP placement numbers suggest an increasing reach of the program. About 3,800 PMETs were placed through PCP in 2017, tripled from the year before (text chart). However, given that the programs are continuously evolving, and that data availability is limited, it is premature to gauge how impactful these programs are. Finally, for some non-PMET workers, Place and Train programs provide training and salary support to help reskill and take new jobs in different sectors.

9. For low-skilled workers, vulnerabilities stem from low wages, rather than lack of employment opportunities. Workers in non-PMET occupations (clerical, sales & service workers, production & transport operators, and cleaners & laborers) tend to be older and with a lower education level. In 2018, 50 percent of resident non-PMET workers were above 50 years old, and only 5 percent held a degree. They tended to find jobs more quickly than high-skilled workers, with 70-75 percent of the resident non-PMETs finding a job within 6 months compared to 60 percent among the resident PMETs. However, they earn a significantly lower income (text chart): about 70 percent of non-PMETs earn less than 2/3 of the median income of full-time employed residents in 2018. The more relevant issue for low-skilled workers thus would be to prevent poverty and to ensure continued incentives to work despite low wages.

Singapore: Income Distribution by Occupation in 2018
(Number of residents in thousands with gross monthly income in each range in S$1,000)



Source: Singapore Ministry of Manpower.
Note: Gross monthly income excludes employers' CPF contributions.

10. Policies are in place to incentivize low-skilled workers to remain employed. For some narrowly defined sectors (cleaning, security, and landscape), Progressive Wage Models provide a schedule of wage floors that increases with job functions for employees who are Singapore citizens or permanent residents.[4] More generally, for employed low-wage Singaporean workers of age 35 or above, the government provides Workfare Income Supplement (WIS). The WIS benefit is paid in combination of cash grants to supplement disposable income and top-ups to the CPF retirement savings. The WIS targets the bottom 20-30 income percentile. The monthly benefit can be up to S$300 depending on the worker's age and income level: a larger amount is paid to older workers. In 2017, about S$656 millions were paid out to total 411,000 citizens. In-work benefits such as the WIS are more effective when combined with ALMP measures promoting job search and enhancing skills. In that regard, the WIS and the strong PES in Singapore together appear to be an effective combination to encourage labor force participation, especially for older workers. However, the literature points to a potential risk that employers may take advantage of the financial gains introduced by in-work benefit and set lower wages (OECD, 2005). It is thus important to pay close attention to wage developments especially for low-wage workers.

C. Challenges Ahead

11. The current framework seems appropriately targeted. Singapore does not have unemployment insurance. Rather, it aims to support workers to maintain employment through ALMP programs. The programs appear to be appropriately targeted to address different

[4] For Singapore citizens and permanent residents in the cleaning, security, and landscape sector, based on the tripartite agreement across unions, employers, and the government, employers are obligated to pay minimum basic wages corresponding to the job functions of their workers. Progressive Wage Models provide a sector-specific schedule of wage floors that increase with the job functions and required level of skills, rather than a single wage floor. The wage levels are reviewed to include yearly wage increases over time. For the cleaning industry, for instance, based on the latest review in 2016, employers are asked to increase the monthly wage by S$200 over the period of 2017- 2019, then to increase by 3 percent each year in 2020-2022.

vulnerabilities facing different segments of the workforce. This underpins Singapore's strong labor market outcomes: high labor market participation and a low unemployment rate.

12. With the technological and demographic changes underway, it is important to ensure that labor policies continuously adapt to the changing environment. Given the presence of several programs that have similar objectives, a periodic assessment of the effectiveness of different programs (including their administrative burden, public awareness, as well as outcomes) would be useful to further improve program design. Such assessment should also help ensure that the workers whose jobs are most at risk actively participate in available programs. Singapore's effort to cultivate a strong partnership with the industry and training providers should become increasingly important to identify shifts in technology and industry needs, thus to effectively adapt the policies to the rapidly changing nature of work.

Table 1. Singapore: Key Training and Employment Incentive Programs

Target jobs	Target groups	Duration	Descriptions	Funding support
Professional Conversion Programme				
PMET jobs in growth area 1/	SC PMETs looking for jobs. More support for SC Mid-career PMETs, looking for jobs ≥ 6 mon. or of age 40 and above	3 to 24 months	**Place and Train**: PMET is hired and undergoes training with training & wage subsidies	Up to 70% of course fee and salaries with cap at $ 6000 / mon; 90% for PMETs who are of age 40 and above or have been unemployed over 6 months
			Attach and Train: PMET reskill with work attachment, before placement, with training subsidies and allowance	Up to 70% of course fees (90% for trainee aged ≥40) and training allowance of 50-70% of prevailing salary funded by WSG and ≥ 10% co-funded by hosting employer
Career Support Programme				
PMET jobs paying ≥ $ 4000/mon.	SC PMETs who have been looking for jobs ≥ 6 mon.	Up to 18 months	Salary subsidies	For PMET aged ≥ 40 looking for jobs over an year, 50% for 6 months, 30% for the subsequent 6 months, and 20% for the last 6 months; For PMETs aged ≥ 40 looking for jobs for ≥ 6 months and < 1 year, 40% for the first 6 months, 20% for the subsequent 6 months; For PMETs aged < 40 looking for jobs ≥ 6 months, 20% for the first 6 months and 10% for the subsequent 6 month
Career Trial				
Jobs paying ≥ $ 1500/mon.	SC looking for jobs. More support for SC looking for jobs ≥ 6 mon. or with disabilities	3 months	Work train with training allowance and retention incentive & salary support	Training allowance of $7.5-15 / hr. for up to 3 months; One-off retention (≥ 6 month) incentive for long-term unemployed SC 30% of salary subsidies for up to 6 months (capped at $ 5400) per hire who are long-term unemployed
Place and Train Program				
Jobs paying ≥ $ 1500/mon.	SC looking for jobs. More support for SC looking for jobs ≥ 6 mon.		Training and salary support	Up to 90% of course fees and up to 90% of salary support with cap at $3,000/ mon.

Sources: http://www.wsg.gov.sg/
Note: PMETs represent Professionals, Managers, Executives and Technicians. The table shows a key programs and is not exhaustive.
SC means Singapore citizens.
1/ The six clusters include manufacturing (energy & chemicals, precision engineering, marine & offshore, aerospace, and electronics), built environment (construction, real estate, cleaning and security), trade and connectivity (logistics, air transport, sea transport, land transport, and wholesale trade), essential domestic services (healthcare and education), modern services (professional services, ICT and media, and financial services), and lifestyle (food services, retail, hotels, and food manufacturing). Most support is available for SCs, but some course fee subsidies are available also for permanent residents.

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Organization for Economic Co-operation and Development, "Employment Outlook, Chapter 3. Increasing Financial Incentives to Work: The Role of In-work Benefits," 2005.

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INTERNATIONAL MONETARY FUND

SINGAPORE

June 19, 2019

STAFF REPORT FOR THE 2019 ARTICLE IV CONSULTATION—INFORMATIONAL ANNEX

Prepared By	Asia and Pacific Department

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FUND RELATIONS

(As of May 31, 2019)

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)	3,108.09	79.86
Reserve tranche position	785.87	20.19
Lending to the Fund:		
New Arrangements to Borrow	49.55	

SDR Department

	SDR Millions	Percent of Allocation
Net cumulative allocation	744.21	100.00
Holdings	760.90	61.07

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 Singapore dollar has been appreciating and, since February 2018, meets the criteria of a crawl-like exchange rate arrangement. Therefore, the de facto exchange rate arrangement was reclassified to "crawl-like" from "stabilized", effective February 9, 2018. The Monetary Authority of Singapore (MAS) monitors its value 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 of Article VIII, Sections 2, 3, and 4 and maintains an exchange rate system free of 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 2018 Article IV consultation discussions were held during May 3–May 15, 2018 in Singapore and the Executive Board concluded the consultation on July 20, 2018 (IMF Country Report No. 18/245).

FSAP Participation

The FSAP Update involved two missions: October 29-November 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: Mr. Jochen Schmittmann has been posted in Singapore since August 2017.

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, dissemination of more disaggregated data would enhance the basis for macroeconomic policy analysis, particularly in the external, monetary, and fiscal areas.	
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**: DOS has completed the rebasing of the Consumer Price Index (CPI) to base year 2014. The CPI is rebased once every five years to reflect the latest consumption pattern and composition of goods and services consumed by resident households.	
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 has not submitted the standardized report forms (SRFs) for monetary statistics introduced in October 2004. The SRFs provide for accounting data to be broken down by instrument, sector, and currency.	
Balance of payments: In February 2012, the DOS concluded the migration of the balance of payments accounts to the 6th edition of the *Balance of Payments and International Investment Position Manual (BPM6*). The main changes relative to the 5th edition include: reclassification of repairs on goods and processing fees to services (from goods); reclassification of merchanting to goods (from services); and treating banks' Asian Currency Units (ACUs) as residents (previously they were regarded as nonresidents, and hence their transactions were excluded from the balance of payments). Data on Singapore's international investment position (IIP) is not provided on a disaggregated sectoral basis as suggested by the BPM6.	
II. Data Standards and Quality	
Singapore provides data on a timely basis and meets all the SDDS specifications. These include the coverage, periodicity, and timeliness of the data; and the dissemination of advance release calendars; quarterly certification of the metadata posted on the Fund's Dissemination Standards Bulletin Board; and provision of information to allow users to assess data quality.	No data ROSC is available.

Singapore—Table of Common Indicators Required for Surveillance (As of June 6, 2019)					
	Date of Latest Observation	Date Received	Frequency of Data[1]	Frequency of Reporting[1]	Frequency of Publication[1]
Exchange rates	6/6/19	6/6/19	D	D	D
International reserve assets and reserve liabilities of the Monetary Authorities[2]	5/2019	6/2019	M	M	M
Reserve/base money	4/2019	5/2019	M	M	M
Broad money	4/2019	5/2019	M	M	M
Central bank balance sheet	4/2019	5/2019	M	M	M
Consolidated balance sheet of the banking system	4/2019	5/2019	M	M	M
Interest rates[3]	6/6/19	6/6/19	D	D	D
Consumer price index	4/2019	5/2019	M	M	M
Revenue, expenditure, balance and composition of financing[4]—general government[5]	3/2018	9/2018	A	A	A
Revenue, expenditure, balance and composition of financing[4]—central government	4/2019	5/2019	M	M	M
Stocks of central government and central government-guaranteed debt[6]	2019:Q1	5/2019	Q	Q	Q
External current account balance	2019:Q1	5/2019	Q	Q	Q
Exports and imports of goods and services	2019:Q1	5/2019	Q	Q	Q
GDP/GNP	2019:Q1	5/2019	Q	Q	Q
Gross external debt[7]	2018:Q4	3/2019	Q	Q	Q
Net international investment position	2018:Q4	3/2019	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 Keng Heng Tan, Alternate Executive Director for Singapore, and Selene Yoe, Advisor to the Executive Director
July 10, 2019

1 Introduction

1.1 The Singapore authorities would like to thank the Article IV team for a constructive 2019 Consultation. The authorities would also like to express their appreciation to the FSAP team for a rigorous and comprehensive assessment of Singapore's financial system.

2 Recent Economic Developments and Outlook

2.1 Against a backdrop of a slowing global economy and simmering trade tensions, the Singapore economy experienced a step down in growth in Q4 2018 and Q1 2019, following several quarters of above-potential growth. The moderation was driven by weakness in the trade-related cluster, alongside the downswing of the global electronics cycle. Meanwhile, the modern services cluster has emerged as the main support to growth, reflecting healthy demand for IT and platform services. At the same time, some indicators point to a nascent recovery in the domestic-oriented cluster, led by the construction sector.

2.2 Since the Article IV mission in May, prospects for the global economy have become even more uncertain. Notably, the ongoing trade conflicts remain unresolved. Should they intensify, global growth would be further impacted through lower business and consumer confidence, alongside more severe disruptions to supply chains. The broadening of the dispute to include cross-border market access for technology firms threatens to damage global growth prospects over the longer term by impeding the diffusion of technology and innovation, which is important for productivity growth.

2.3 The Singapore authorities firmly support an open, rules-based and inclusive international trading system which has underpinned not just Singapore's but also much of the world's growth and prosperity. Singapore continues to work closely with like-minded partners to promote and uphold a rules-based international trading system, in support of a predictable trading environment, with both multilateral and plurilateral initiatives playing important roles in this respect.

2.4 Against the present challenging external environment, growth of the Singapore economy is currently projected to come in at 1.5–2.5% in 2019, down from 3.1% last year. The trade-related cluster is likely to face persistent external headwinds, reflecting slower economic growth in Singapore's key trading partners, the ongoing downturn in the global electronics cycle and greater uncertainties arising from trade tensions. The modern services sector is expected to be the key driver of growth, as digitalisation needs continue to support the demand for information & communications and professional services. In the domestic- oriented sectors, the construction-led recovery should extend into H2 2019.

2.5 Underlying inflation has moderated in recent months. MAS Core Inflation averaged 1.5% y-o-y over the first five months of 2019, compared to the 1.8% recorded in the latter half of 2018. This mainly reflected the reduced contribution of energy-related components to core inflation as the sharp decline in oil prices in Q4 2018 filtered through to electricity and gas tariffs, while consumers have also progressively adopted cheaper electricity plans following the liberalisation of the retail electricity market in November last year.

2.6 Global oil prices have corrected recently amid concerns about slowing global demand and are projected to average lower in 2019 than in the previous year, while other sources of external inflation are also likely to remain benign. On the domestic front, moderate wage gains supported by firm labour market conditions and the cyclical moderation in productivity growth are expected to contribute to further increases in unit labour costs. However, an acceleration in inflation in the quarters ahead is unlikely against the backdrop of slower GDP growth and uncertainties in the global economy. The authorities expect core inflation to average within the 1–2% range for 2019.

3 Macroeconomic Policies

3.1 Singapore's current macroeconomic policy mix has been formulated to take into account the ongoing uncertainties in the international economic environment, so as to secure price stability and sustainable growth in the medium term. We note that staff are in broad concurrence with our policy stance.

Monetary Policy

3.2 MAS kept the rate of appreciation of the Singapore Dollar Nominal Effective Exchange Rate (S$NEER) policy band unchanged in April 2019, after two rounds of measured adjustments in 2018 which had set the policy band on an appreciation path, from a 0% slope previously. The unchanged policy decision was predicated on MAS' assessment that inflationary pressures would be contained, reflecting the expected easing of Singapore's GDP growth below its potential rate, a benign outlook for imported inflation, as well as the continuing restraining effects from the monetary policy tightening measures undertaken in 2018. The authorities note staff's assessment that the monetary policy stance is appropriately supportive of price stability.

3.3 The recent escalation in trade frictions has added to uncertainty and risks to growth. In the short term, the policy band provides sufficient room for fluctuations in the S$NEER to accommodate volatility arising from these trade issues. MAS will continue to closely monitor economic developments including global risk factors. Any adjustments to policy will depend on how the economy evolves, and the latest assessment of inflation and GDP growth prospects.

Fiscal Policy

3.4 The fiscal policy stance is estimated to be mildly expansionary this year (calendar year basis), with several measures targeted at supporting households. While fiscal policy is focused on medium- to long-term restructuring, the authorities stand ready to provide fiscal stimulus should economic conditions take a significant turn for the worse.

3.5 Budget 2019 reinforced past initiatives with a focus on strengthening Singapore's long-term sustainable growth prospects. The budget measures can be contextualised within a productivity growth framework, in which firms' decisions to invest, adopt technology and innovate—factors which ultimately drive long-term GDP growth—depend on the conditions and incentives facing them. An important implication of this framework is that there may be scope for government intervention when positive externalities and knowledge spillovers exist, or where there are barriers to technology adoption and innovation. Accordingly, the Budget introduced measures to facilitate efficient resource allocation (e.g. reduction in Dependency Ratio Ceilings (DRCs) for the services sector), and to raise productivity levels within firms by incentivising and facilitating capital deepening and technology adoption, including among SMEs (e.g. expansion of Productivity Solutions Grant, SMEs Go Digital programme).

3.6 Overall, the Budget continued to ensure that the operating environment, such as the policy and regulatory framework, availability of skilled labour and market size, are conducive for businesses to grow and invest (e.g. one-stop portal for firms to transact with the government, new Professional Conversion Programmes to support the entry of mid-career workers into new growth areas, Enterprise Financing Scheme for SMEs). It is important to note that the government's role in providing a favourable environment for businesses to enhance productivity is carefully designed from a supply-side perspective, and not limited to boosting spending *per se*. The fiscal resources that have been deployed to promote inclusive growth amid globalisation and technology change have also been considerably increased over recent years. (Please see Section 6 below.)

4 Financial Sector Assessment Programme

4.1 The authorities welcome staff's acknowledgement of Singapore's high financial regulatory and supervisory standards, and the further enhancements to the strong framework for financial oversight in recent years. MAS has implemented important reforms which include the Basel III capital and liquidity requirements and enhancements to the framework for crisis resolution and safety nets. MAS is also at the forefront of international efforts to reinforce cyber resiliency, and has taken steps to promote cyber security in Singapore's banking sector. Mitigating and staying ahead of the risks in this rapidly evolving area will remain a key priority for the authorities.

4.2 The authorities also appreciate staff's acknowledgement of Singapore's developmental efforts at the forefront of financial technology (FinTech) while balancing regulations to ensure that financial stability, investor protection and financial integrity considerations are not compromised.

Financial System

4.3 Stress tests performed by both MAS and the FSAP team reaffirm that banks in Singapore would remain resilient under adverse macroeconomic conditions. In particular, the sizeable capital buffers and strong profitability of major Singaporean banks allow them to absorb the sharp increase in credit losses under FSAP's severe solvency stress test scenarios. This is underscored by staff's acknowledgment of Singaporean banks' higher leverage ratios compared to that for global systemically important banks (G-SIBs), as well as their conservative approach to risk-weighted asset calculation. Further, domestic credit growth has moderated, with household and corporate debt remaining stable and balance sheets resilient with sizeable financial buffers.

4.4 Banks in Singapore have adequate liquidity overall, with domestic systemically important banks (D-SIBs) maintaining healthy buffers over minimum regulatory Liquidity Coverage Ratio (LCR) requirements in all currencies including Singapore dollars. Under a scenario of severe macro conditions as well as a significant deterioration in liquidity conditions in foreign currency markets, the stress tests show that banks could face U.S. dollar shortfalls. The authorities have been actively supervising banks on their foreign currency liquidity profiles over the past few years, and the local banking groups have diversified their sources of U.S. dollar funding. The authorities will continue to engage banks through the supervisory process.

4.5 Similarly, insurance companies have strong capital positions, though stress tests point to vulnerabilities of the sector to market risks such as credit spread widening and fall in equity prices. Nevertheless, the insurers were able to recover their capital positions through various plans and the authorities have assessed these plans to be adequate.

4.6 The authorities strengthened the resolution framework in 2017 through MAS Act amendments to enhance resolution tools and powers used to manage the failure of large, complex financial institutions. Staff have acknowledged that the authorities' resolution framework is broadly consistent with international best practices, as laid out in the FSB Key Attributes for Effective Resolution of Financial Institutions. In June 2019, the authorities published a monograph on Emergency Liquidity Assistance (ELA) in Singapore, to inform on financial institutions' planning for liquidity stress and crisis management, particularly relating to the extent of central bank liquidity support. The authorities also note the FSAP team's assessment that policy effectiveness and governance will be strengthened by its disclosure of the ELA framework.

4.7 The authorities have and will continue to ensure that risks posed by financial innovation are appropriately addressed through heightened supervisory intensity. The potential disruptive business impact of FinTech on the financial services sector has largely been internalised by financial institutions (FIs), and most FIs are collaborating with FinTech firms to provide better financial services. Nevertheless, rapid adoption of technology could lead to greater operational, technology-related, and money laundering and terrorism financing risks, and the authorities have taken steps to address these risks. For instance, MAS has made several revisions to its regulations to encourage better IT risk management and resilience, while the enactment of the new Payment Services Act will enhance MAS' powers and regulatory oversight (including its AML/CFT purview) over payment service providers. The authorities will continue to watch this space closely and make ongoing refinements to regulations and supervision to strike an appropriate balance between risks and opportunities.

5 Macroprudential Policy

5.1 The authorities welcome staff's acknowledgement that Singapore has a strong institutional framework for macroprudential policy which underpins the willingness and ability to act promptly, and the effective cooperation and coordination with other institutions. MAS relies on comprehensive quantitative information for its surveillance and risk assessment, and continuously enhances its systemic risk monitoring framework. The authorities have been proactive in using property-related macroprudential tools, and the analysis by the FSAP team has found that the property market measures have increased the resilience of households and financial institutions against shocks by moderating the pro- cyclicality of credit and residential price developments.

5.2 Most recently, on 5 Jul 2018, the authorities raised the Additional Buyer's Stamp Duty (ABSD) rates and tightened Loan-to-Value (LTV) limits on private residential property purchases, to cool the property market and keep price increases in line with economic fundamentals. The measures were carefully calibrated against the backdrop of the strong and broad-based upswing of the property price cycle between Q3 2017 and Q2 2018, and addressed the risks of a destabilising correction. As the strength in demand was evident across all buyer types, a comprehensive package of both tax and credit-based measures was implemented. The authorities gave due consideration to the strong pipeline of private housing supply which will progressively come on-stream over the medium term. The measures, alongside the government's medium-term land supply policies, were assessed to be appropriate to promote sustainable conditions in the private residential property market. There are signs that the implemented measures have helped to moderate the property market cycle but continued vigilance is called for, as macro conditions and market dynamics evolve.

6 Medium-term Issues

6.1 Beyond cyclical issues, the authorities continue to take steps to confront and address various structural issues facing Singapore, including the opportunities and challenges posed by technological advancements, population ageing and climate change. Building on the recommendations by the Committee on the Future Economy (CFE), the authorities have undertaken efforts to promote an innovation-based growth model that seeks to establish Singapore as a global innovation hub, supported by a labour force with deep skills. On the climate change front, Singapore is taking concerted action to reduce carbon emissions in line with the 2015 Paris Agreement through high excise duties on petrol, diesel and compressed natural gas as well as the recently-implemented carbon tax.

6.2 As technological advances result in changes in the economic structure and shorter skills-upgrading cycles, Singapore has taken a proactive approach in helping workers and firms remain employable and resilient, respectively. In light of the uncertainties over the pace and impact of technological disruption, it is critical for the labour force to be agile and adaptable. This is facilitated through initiatives such as SkillsFuture which promote life-long learning, and the various measures under the Adapt and Grow scheme that help retrain workers whose jobs are at risk and support their transition to new careers. For businesses, recent policy measures have been aimed at incentivising firms, especially SMEs, to scale up and internationalise, leveraging on private sector partnerships and expertise. Complementary labour policy measures such as the reduction of the foreign worker DRCs for the services sector should encourage greater automation and thus lift productivity.

6.3 At the same time, measures are in place to ensure social mobility and inclusivity during this period of transformation. Additional assistance is provided to low-income workers in the form of direct wage support via the Workfare Income Supplement scheme, with higher payouts for older workers. Wage security is ensured in specific sectors through the Progressive Wage Model, which also provides career ladders for job progression and higher wages. Furthermore, social support measures such as the Bicentennial Bonus, Merdeka Generation Package and enhancement of the Community Health Assist Scheme provide additional financial support to those in greater need.

6.4 Looking ahead, the authorities expect significant increases in broad-based, recurrent expenditure, such as in healthcare and education, as well as in refreshing and building rail and housing infrastructure. This will accelerate the projected decline in Singapore's public sector net savings as a share of GDP, while households are also expected to draw down on their accumulated savings as the population ages. Both these trends indicate that the current account surplus will be gradually reduced in the next decade.

7 Final Remarks

7.1 Amid elevated uncertainties, the Singapore authorities will carefully monitor global developments and assess how these could impinge on internal balance, encompassing both macroeconomic and financial stability. We stand ready to undertake appropriate policy responses should cyclical developments deteriorate more sharply than anticipated. While external headwinds will slow Singapore's pace of growth in the short term, the authorities remain committed to domestic restructuring, which will enable us to embrace new economic opportunities in the medium term. At the same time, we will ensure that growth remains inclusive for all Singaporeans amid rapid technological change.

7.2 Finally, the authorities are pleased to inform the Executive Board that they agree to the publication of the full suite of reports, covering the 2019 Singapore Article IV Consultation Report, Financial System Stability Assessment Report, Detailed Assessment Report on MEPS+ and Technical Notes on Macroprudential Policy, Crisis Management, Resolution & Safety Nets, Financial Stability Analysis & Stress Testing and FinTech Regulation & Supervision.