INTERNATIONAL MONETARY FUND

IMF Country Report No. 18/333

JAPAN

November 2018

2018 ARTICLE IV CONSULTATION—PRESS RELEASE; STAFF REPORT; AND STATEMENT BY THE EXECUTIVE DIRECTOR FOR JAPAN

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 2018 Article IV consultation with Japan, 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 November 21, 2018 consideration of the staff report that concluded the Article IV consultation with Japan.
- The **Staff Report** prepared by a staff team of the IMF for the Executive Board's consideration on November 21, 2018, following discussions that ended on October 4, 2018, with the officials of Japan on economic developments and policies. Based on information available at the time of these discussions, the staff report was completed on November 6, 2018.
- An **Informational Annex** prepared by the IMF staff.
- A **Staff Statement** updating information on recent developments.
- A **Statement by the Executive Director** for Japan.

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

Selected Issues

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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Press Release No. 18/442
FOR IMMEDIATE RELEASE
November 28, 2018

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

IMF Executive Board Concludes 2018 Article IV Consultation with Japan

On November 21, 2018, the Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation[1] with Japan.

The Japanese economy is growing above its estimated potential. After a temporary soft patch early in the year, domestic demand recovered in the second quarter. With external demand expected to remain supportive, and despite recent natural disasters, real GDP growth is projected to remain above trend in 2018 at 1.1 percent. Headline and core inflation have gained momentum in recent months on the back of higher energy prices but remain well below Bank of Japan's (BoJ) two percent inflation target.

The current account surplus increased marginally in 2017, due to a stronger income balance, but is expected to shrink by the end of 2018 due to smaller goods trade and income balances. The real effective exchange rate appreciated slightly in the first nine months of 2018 relative to end-2017. As with the 2017 external sector assessment, the projected 2018 current account balance is preliminarily assessed as in line with the current account level consistent with fundamentals and desirable policies.

Underlying growth is expected to remain solid, notwithstanding the scheduled increase in the consumption tax rate in October 2019. However, absent mitigating fiscal measures, the consumption tax increase could lead to volatility in private consumption and investment. Meanwhile, monetary policy is expected to remain accommodative and support favorable financial conditions. Over the medium term, growth is projected to moderate and the output gap close. Following a consumption tax-induced spike in 2020, inflation will rise over the medium term, but likely remain below the BoJ's target.

[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 welcomed Japan's remarkable economic growth performance, especially in per capita terms, and the prospect of continued above-potential growth in the near term. Directors nevertheless noted that inflation remains below target and that downside risks have risen, notably from the upcoming consumption tax rate increase and deteriorating global conditions. Moreover, intensifying demographic headwinds continue to pose challenges. Directors emphasized the need to reinvigorate the policies of "Abenomics" to achieve sustained high growth, durable reflation, and public debt sustainability.

Directors generally underscored the importance of maintaining a neutral fiscal stance to support near-term growth and reflation. They welcomed the authorities' plan to implement temporary measures to alleviate the adverse impact of the scheduled increase in the consumption tax rate, accompanied by clear communication to the public. For the medium term, Directors saw merit in developing a well-specified fiscal framework, based on realistic assumptions, to reduce policy uncertainty and anchor a gradual consolidation path toward debt sustainability while addressing demographic challenges. While an independent fiscal institution could be helpful in this regard, some Directors saw scope to achieve these objectives within the existing institutional arrangements.

Directors welcomed the authorities' ambitious structural reform agenda aimed at lifting potential growth. They stressed the importance of strong government commitment to mutually-supportive reforms, with priority given to labor market reforms to enhance labor supply including from female, older, and foreign workers. Directors recommended further efforts to eliminate tax and social security disincentives to full-time and regular work, reduce the gender wage gap, and increase the availability of childcare and nursing facilities. They also encouraged the authorities to further deregulate product and services markets, facilitate entry and exit of firms, promote small- and medium-sized enterprises, and deepen corporate governance reform.

Directors agreed that monetary policy should remain accommodative, possibly for an extended period to successfully reflate the economy, while carefully monitoring and mitigating side-effects. They stressed that effective communication and forward guidance would help reduce market volatility and guide inflation expectations.

Directors recognized the challenges facing the financial sector, especially from demographic pressures and low interest rates. They welcomed the progress made in implementing the 2017 FSAP recommendations, in particular, the new more forward-looking supervisory framework.

[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 highlighted the importance of enhancing risk management, financial oversight, and the macroprudential framework. They welcomed the authorities' close engagement with regional financial institutions to help adapt their business models to demographic trends. Directors also saw priority in facilitating financial institutions' use of Fintech and strengthening crypto-asset oversight.

Directors took note of the staff's assessment that Japan's 2018 external position and real exchange rate are projected to be broadly consistent with fundamentals and desirable policies. They agreed that a credible fiscal consolidation plan combined with bolder structural reforms are needed to maintain external balance over the medium term. Directors also noted that advancing multilateralism would help mitigate inward spillovers from heightened trade tensions, and appreciated Japan's leadership role on this front.

Directors commended the authorities for volunteering to participate in the Fund's initiative to assess efforts to address supply-side of corruption in Japan's Article IV consultation. They looked forward to continued progress in enforcing foreign bribery laws.

Table 1. Japan: Selected Economic Indicators, 2012–19

Nominal GDP: US$ 4,873 Billion (2017) — GDP per capita: US$ 38,444 (2017)
Population: 127 Million (2017) — Quota: SDR 30.8 billion (2017)

	2012	2013	2014	2015	2016	2017	2018	2019
							Proj.	
				(In percent change)				
Growth 1/								
Real GDP	1.5	2.0	0.4	1.4	1.0	1.7	1.1	0.9
Domestic demand	2.3	2.4	0.4	1.0	0.4	1.2	0.9	1.1
Private consumption	2.0	2.4	-0.9	0.0	0.1	1.0	0.6	0.8
Business investment	4.1	3.7	5.4	3.4	0.6	2.9	4.7	3.4
Residential investment	2.5	8.0	-4.3	-1.0	5.7	2.7	-6.7	0.9
Government consumption	1.7	1.5	0.5	1.5	1.3	0.4	0.5	1.1
Public investment	2.7	6.7	0.7	-1.7	-0.1	1.2	-1.8	-5.9
Stockbuilding 2/	0.0	-0.4	0.1	0.3	-0.2	-0.1	0.1	0.0
Net exports 2/	-0.8	-0.4	0.0	0.3	0.6	0.5	0.1	0.0
Exports of goods and services 3/	-0.1	0.8	9.3	2.9	1.7	6.7	3.9	2.1
Imports of goods and services 3/	5.4	3.3	8.3	0.8	-1.6	3.4	3.2	2.3
Output Gap	-3.7	-2.2	-2.6	-2.0	-1.8	-0.7	-0.3	0.1
				(In annual average)				
Inflation								
CPI 4/	-0.1	0.3	2.8	0.8	-0.1	0.5	1.2	1.3
CPI excluding VAT	-0.1	0.3	1.2	0.3	-0.1	0.5	1.2	1.1
Core Core CPI excluding VAT 5/	-0.4	-0.2	0.7	0.9	0.6	0.1	…	…
GDP deflator	-0.8	-0.3	1.7	2.1	0.3	-0.2	0.8	1.5
Unemployment rate	4.3	4.0	3.6	3.4	3.1	2.9	2.9	2.9
				(In percent of GDP)				
Government								
General government								
Revenue	30.8	31.6	33.3	34.2	34.1	33.2	33.2	33.3
Expenditure	39.4	39.5	38.9	38.0	37.8	37.5	36.9	36.0
Overall Balance	-8.6	-7.9	-5.6	-3.8	-3.7	-4.3	-3.7	-2.8
Primary balance	-7.5	-7.0	-4.9	-3.2	-2.9	-3.8	-3.3	-2.6
Structural primary balance	-6.3	-6.4	-4.6	-3.6	-3.4	-3.7	-3.3	-2.6
Public debt, gross	229.0	232.5	236.1	231.3	235.6	237.6	238.2	236.6
				(In percent change, end-period)				
Macro-financial								
Base money	10.7	45.8	36.7	29.1	22.8	9.7	10.6	9.3
Broad money	2.2	3.5	2.9	3.0	3.9	3.5	3.6	3.1
Credit to the private sector	2.2	4.1	2.0	1.9	2.4	4.4	3.5	3.0
Non-financial corporate debt in percent of GDP	143.1	142.0	143.0	137.9	136.9	139.7	146.7	147.0
Household debt in percent of disposable income	98.3	100.2	100.8	100.5	100.8	101.7	101.1	101.0
				(In percent)				
Interest rate								
Overnight call rate, uncollateralized (end-period)	0.1	0.1	0.1	0.0	-0.1	-0.1	…	…
Three-month CD rate (annual average)	0.3	0.2	0.2	0.2	0.1	0.0	…	…
Official discount rate (end-period)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
10-year JGB yield (e.o.p.)	0.9	0.7	0.6	0.4	0.0	0.1	0.1	0.2
				(In billions of USD)				
Balance of payments								
Current account balance	59.7	45.9	36.8	136.4	194.9	196.1	183.7	196.2
Percent of GDP	1.0	0.9	0.8	3.1	3.9	4.0	3.6	3.8
Trade balance	-53.9	-90.0	-99.9	-7.4	51.4	44.5	34.7	43.0
Percent of GDP	-0.9	-1.7	-2.1	-0.2	1.0	0.9	0.7	0.8
Exports of goods, f.o.b.	776.0	695.0	699.7	622.1	636.3	689.2	750.0	766.6
Imports of goods, f.o.b.	829.9	784.9	799.7	629.5	585.0	644.8	715.3	723.7
Energy imports	272.2	257.4	241.8	133.8	94.9	117.8	153.5	150.9
				(In percent of GDP)				
FDI, net	1.9	2.8	2.4	3.0	2.7	3.1	2.6	2.8
Portfolio Investment	0.5	-5.4	-0.9	3.0	5.6	-1.1	-0.9	-0.8
				(In billions of USD)				
Change in reserves	-37.9	38.7	8.5	5.1	-5.7	23.6	10.5	11.0
Total reserves minus gold (in billions of US$)	1227.2	1237.3	1231.0	1207.1	1188.4	1232.4	…	…
				(In annual average)				
Exchange rates								
Yen/dollar rate	79.8	97.6	105.9	121.0	108.8	112.2	109.8	109.3
Yen/euro rate	102.6	129.6	140.8	134.3	120.4	126.7	130.3	127.9
Real effective exchange rate (ULC-based, 2010=100)	106.5	86.3	78.2	75.3	85.1	78.3	…	…
Real effective exchange rate (CPI-based, 2010=100)	100.6	80.4	75.2	70.2	79.6	75.6	…	…
				(In percent)				
Demographic Indicators								
Population Growth	-0.2	-0.2	-0.2	-0.1	0.0	-0.2	-0.2	-0.3
Old-age dependency	37.8	39.8	41.8	43.5	44.8	46.0	46.9	47.8

Sources: IMF, Competitiveness Indicators System; OECD, and IMF staff estimates and projections as of October 2018 World Economic Outlook.

1/ Annual growth rates and contributions are calculated from seasonally adjusted data.
2/ Contribution to GDP growth.
3/ 2014 export and import growth rates are inflated because of changes in the compilation of BoP statistics (BPM6) implying a break in the series relative to previous years.
4/ Including the effects of consumption tax increases in 2014, 2015, and 2019.
5/ Bank of Japan Measures of Underlying Inflation; excluding fresh food & energy.

INTERNATIONAL MONETARY FUND

JAPAN

STAFF REPORT FOR THE 2018 ARTICLE IV CONSULTATION

November 6, 2018

KEY ISSUES

Context: The rapid aging and shrinking of Japan's population will dominate economic policy making in coming decades—impelling a fresh look at the objectives and tools of Abenomics. Six years of Abenomics have yielded some important results, but achieving sustained high growth and durable reflation, while also tackling debt sustainability and a shifting global economic landscape, will require strengthened policies.

Outlook and risks: Underlying growth is expected to remain solid, notwithstanding the scheduled increase in the consumption tax rate, and growth will move closer to potential over the medium term. Inflation is likely to remain below the Bank of Japan's two-percent target under current policies. In line with the global outlook, the balance of risks has shifted to the downside. Japan's macro-financial vulnerabilities, fiscal consolidation needs, and limited monetary policy space make the economy vulnerable to adverse shocks—particularly over the medium term as demographic trends intensify.

Policies: The consultation centered on the macroeconomic effects of Japan's demographics—a rapidly-aging and shrinking population—which under current policies implies a commensurate drag on real output. Mutually-supportive, reinvigorated, and credible policies are needed to bring Abenomics to full strength, to boost productivity and raise potential growth. Budgetary and income policies anchored by a well-specified and gradual medium-term fiscal consolidation plan would help support the Bank of Japan's reflation efforts and ensure debt sustainability. Macro-structural reforms—with a level of government commitment and steady implementation that inspire public confidence—are imperative to unleash productivity gains, lift long-run growth, stabilize government debt, and counter deflationary effects. Monetary policy accommodation should be maintained, but more can be done to further strengthen the monetary policy framework and lift inflation expectations. Strengthened financial sector policies would lessen the financial risks from demographic headwinds, prolonged low interest rates, and low profitability.

Approved By
Odd Per Brekk and Sanjaya Panth

Discussions took place in Tokyo, Osaka, and Sendai between September 20 and October 4, 2018. The team comprised P. Cashin (head), M. Colacelli, G.H. Hong, K. Miyachi, T. Schneider, N. Westelius (all APD), and F. Han (MCM). The team was assisted by Office of Asia Pacific (OAP) staff, including K. Kashiwase and N. Miake. O.P. Brekk (APD) joined the concluding meetings. The Managing Director met with Prime Minister Abe, Finance Minister Aso, and Bank of Japan Governor Kuroda, and held a press conference at the end of the mission. M. Kaizuka and Y. Saito (both OED) joined the official meetings. S. Abebe and A. Le (both APD) assisted in the preparation of this report.

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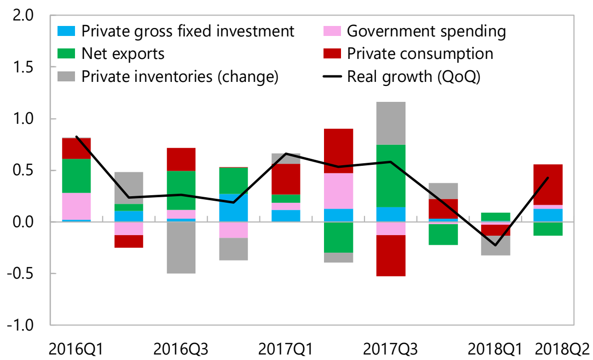
TABLES

ANNEXES

RECENT DEVELOPMENTS

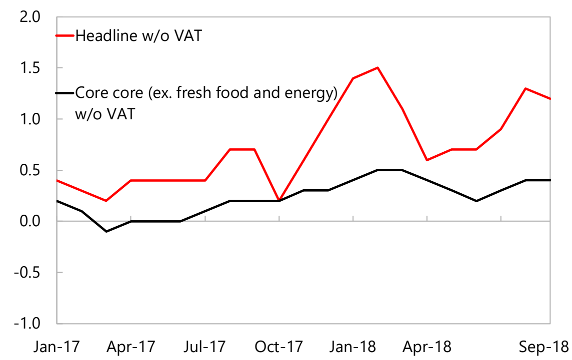
1. **In September, Prime Minister Abe was reelected as the President of the ruling Liberal Democratic Party.** This clears the way for PM Abe to remain in office into 2021, which would make him Japan's longest-serving prime minister. Abe's reelection also allows the policies of Abenomics to continue. However, the internal LDP leadership debate highlighted several economic concerns resonating with Japanese public opinion—including high public debt, stagnation of household incomes, and the unevenness of economic gains. Constitutional reform to formally recognize Japan's Self-Defense Force as a legitimate entity will also likely be a central administration objective in Abe's remaining term.

Contributions to Real GDP
(In percent QoQ, SA)



Source: Haver Analytics.

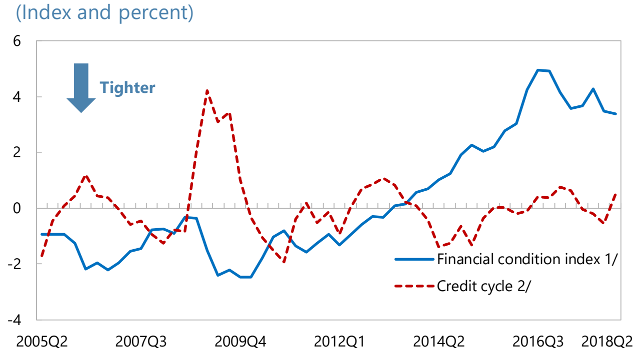
Inflation Indicators
(In percent YoY)



Sources: Haver Analytics; IMF staff estimates.

2. **Economic growth is above potential, but inflation remains low.** After a temporary soft patch early in the year, domestic demand recovered in the second quarter. With external demand expected to remain supportive, and despite recent natural disasters, real GDP growth is projected to stay above potential in 2018 at 1.1 percent. This will help narrow the output gap (staff estimate the output gap as small and negative, whereas the authorities estimate it as positive—the difference stems largely from diverging views on the impact of the Global Financial Crisis on potential growth, see Annex I). Headline and core inflation have gained momentum in recent months on the back of higher energy prices, but remain well below Bank of Japan's (BoJ's) two-percent target (Box 1). Wage growth remains weak despite tight labor market conditions.

Japan: Financial Conditions Index and Credit Cycle
(Index and percent)



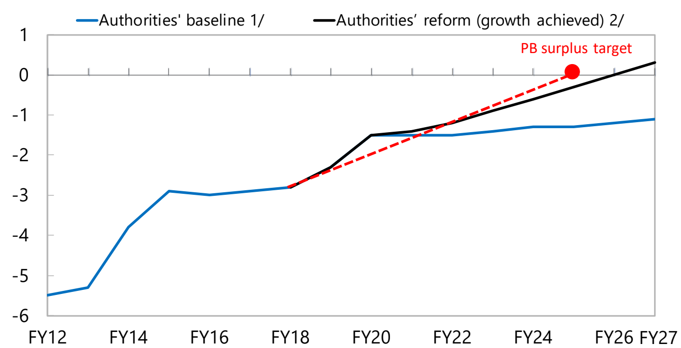
Sources: Bank of Japan; Ministry of Finance; Haver Analytics; and IMF staff estimates.
1/ Estimated as the first principal component of (standardized) JGB yield spreads, money market spreads, credit spreads of corporate bonds with different ratings, the first difference of logarithms of stock prices and nominal effective exchange rate, and credit to the corporate and household sectors. See Annex II for the detailed calculations.
2/ Estimated as the first principal component of the HP-filtered credit-to-GDP ratio and year-on-year real credit growth (deflated by CPI).

3. Financial conditions have tightened slightly, but remain accommodative (Annex II). Domestic credit growth weakened over the past year, super-long yields drifted up, and dollar funding costs rose significantly. Heightened global uncertainty contributed to a slight appreciation in the yen and weaker equity prices. However, lending by regional banks to small enterprises continued to grow rapidly and indirect overseas investments via investment trusts remained strong (Box 2). Also, insurance companies and pension funds shifted from U.S. Treasuries to more risky U.S. securities with higher yields.

4. Fiscal consolidation was delayed and progress on structural reforms remained slow.

- *Fiscal policy*. The authorities announced the "New Plan to Advance Economic and Fiscal Revitalization" in June, based on the interim fiscal review. The plan postponed the primary surplus target from FY2020 to a more realistic FY2025, but made limited progress in strengthening the fiscal framework by continuing to rely on relatively optimistic growth assumptions. While the plan set up a review of the social security system by FY2020, the current framework lacks a long-term plan to address the increases in social security expenditures and ensure debt sustainability. The government has reaffirmed its commitment to the October 2019 two-percentage point consumption tax rate increase, but associated mitigating measures are yet to be fully specified.[1]

Primary Balance Projections
(In percent of GDP. Central and local government basis)



Sources: Japan Cabinet Office.
1/ Assumes 1.3 percent real and 1.8 nominal GDP growth (FY2018-FY2027 average).
2/ Assumes 1.8 percent real and 3.1 nominal GDP growth (FY2018-FY2027 average).

- *Structural policies.* Labor market legislation (staff's top reform priority) was passed by the Diet in June. Its effectiveness in boosting productivity and wages will depend on implementation, including the equal-pay for equal-work guidelines on acceptable reasons for worker wage differentials. Progress was made on enhancing labor supply—women and older workers' participation rates are on a rising trend, and foreign labor is increasing. However, efforts to further eliminate disincentives to regular work stemming from the tax and social security system have been left out of the policy debate over the past year, and progress remains slow regarding deregulation. In contrast, revisions and guidelines for the corporate governance code (staff's second-tier priority) were completed recently. Trade reforms (staff's third-tier priority) have also

[1] At the Cabinet meeting on October 15 2018, PM Abe stated that the government will take all possible measures to mitigate the impact of the planned consumption tax increase. On top of already announced policy measures such as a reduced tax rate for food and non-alcoholic beverages, the government will formulate additional measures to address demand fluctuations. This will likely include support for small and medium-size retailers through a consumer reward points scheme, and fiscal measures to support durable consumption including automobiles and housing.

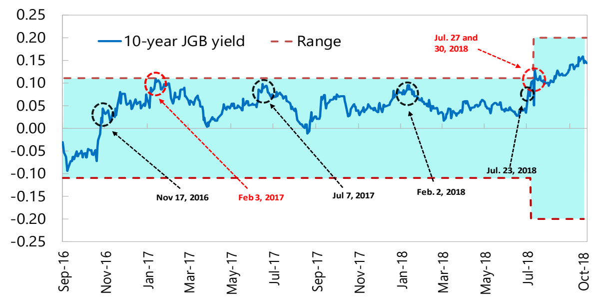
accelerated, with the Japan-EU trade agreement and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

5. The monetary framework was made more sustainable and the supervisory framework more forward-looking.

- *Monetary policy*. Facing rising concerns about side-effects from prolonged monetary easing, the BoJ decided in July to widen the range for the 10-year yield, in effect allowing yields to drift upward. BoJ also announced that future Exchange-Traded-Funds (ETF) purchases would depend on market conditions. To address recurrent speculation of a premature policy normalization, the BoJ explicitly committed to keep short and long-term policy rates low for an extended period of time.

JGB 10-year Yield and Range[1/]

(In percent)



1/ Red circles represent episodes when the unlimited fixed rate facility was accessed by financial institutions. Black circles represent episodes when the facility was made available but not accesed.
Source: Haver Analytics.

- *Financial policies.* The Japanese Financial Services Agency (JFSA) is moving towards a new forward-looking and dynamic supervisory framework. JFSA is also assessing the sustainability of regional banks' business models, given demographic and low profitability challenges. Implementation of other main FSAP recommendations—particularly on macroprudential policies, and crisis management and resolution—is incomplete.

Authorities' Views

6. The authorities noted that the economy is expanding moderately in a well-balanced manner, but that inflation developments remain weak. The authorities highlighted that growth is supported by both domestic demand and external demand where corporate profits and fixed business investment remain favorable, even after accounting for recent natural disasters. However, the authorities also noted that inflation has been sluggish despite a steadily improving labor market and a positive output gap. They argued that this partly reflects firms' preference to invest in labor-saving technology rather than raise prices and wages. The authorities explained that the new fiscal plan is a step toward making the fiscal consolidation path more realistic, and noted that structural reforms are progressing, including the preparation of the Work Style Reform implementation guidelines. They clarified that the adjustments to the monetary policy framework do not constitute a change in policy stance, but instead improve the sustainability of the framework. The JFSA highlighted that the organizational changes to the JFSA included in the revisions to the supervisory framework should help bring a macro perspective into supervision.

OUTLOOK AND RISKS

7. **Underlying growth is expected to remain solid, notwithstanding the scheduled increase in the consumption tax rate.** Real GDP growth is projected to stay above potential in 2018 at 1.1 percent, assuming that external demand remains supportive and the economy bounces back from recent natural disasters. Without effective mitigating measures, the implementation of the consumption tax increase is likely to lead to volatility in private consumption and investment. The effect of the tax increase is expected to carry past 2019 and adversely affect domestic demand and overall growth in 2020. Over the medium term, growth is expected to moderate and the output gap to close. Following a consumption tax-induced spike in 2020, inflation will rise over the medium term, but likely remain below target (see Annex III).

8. **Downside risks have increased.** In line with the global outlook, the balance of risks has shifted to the downside. Japan's macro-financial vulnerabilities, fiscal consolidation needs, and limited monetary policy space make the economy vulnerable to adverse shocks (see Annex IV).

- *Near-term risks*. Sharper-than-expected volatility in private consumption and investment due to the planned consumption tax increase in 2019 could undermine near-term growth momentum. Weaker global growth and heightened uncertainty—from trade or geopolitical tensions—could undermine growth, trigger yen appreciation and equity market shocks, and renew deflationary risks. Moreover, a disorderly tightening of global financial conditions could increase macro-financial risks, with financial institutions particularly sensitive to a sharp fall in equity prices or a spike in JGB yields. Rising FX funding cost may increase the FX funding liquidity risk in some internationally active banks, and, together with a flattening trend in the U.S. yield curve, further squeeze bank profitability and lead to excessive risk taking.

- *Medium-term risks.* Continued monetary accommodation amidst tightening by other advanced economies could encourage financial institutions, particularly regional ones, to engage in excessive risk taking. If regional banks and life insurance companies do not adapt business models to the low interest rate environment and adverse demographics, their viability could be threatened in the medium term. Fiscal sustainability concerns and associated bond market stress could have adverse feedback effects on the financial system and the real economy.

Authorities' Views

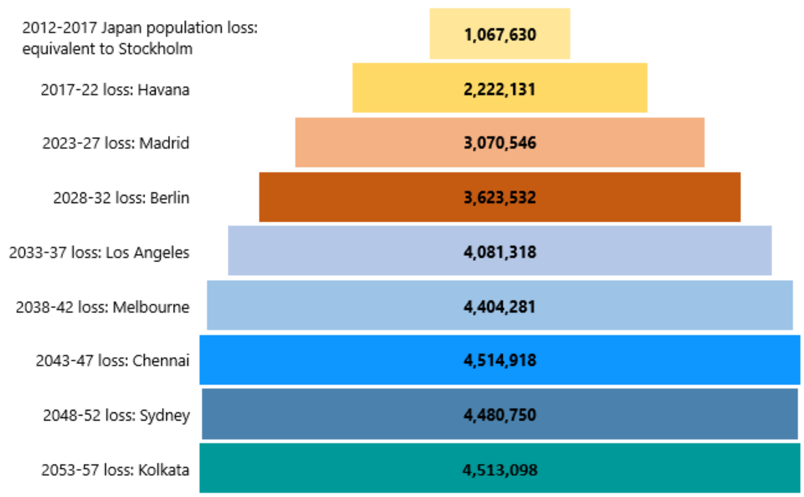
9. **The authorities partly agreed with staff's risk assessment but were more upbeat on the macro-financial situation and policy space.** While agreeing that global uncertainty could weigh on near-term growth prospects, the authorities were confident that the economy will continue its moderate expansion as a main scenario. However, they also highlighted that the pace of expansion will likely moderate over the medium-term due to a modest slowdown in business fixed investment reflecting cyclical adjustments as well as Olympic Games-related demand winding down. While acknowledging that the reflation process will take time as both firms and households remain cautious about wage and price increases, the authorities emphasized that inflationary pressures are slowly building up. The authorities understand that the 2019 consumption tax increase could cause an economic fluctuation, and they

consider it important to control its impact on the economy by mitigating measures planned by the government. The authorities broadly agreed with staff on financial risks. They did not view risks associated with higher FX funding cost or liquidity as significant at this time while recognizing that such risks warrant close monitoring.

POLICIES: NAVIGATING DEMOGRAPHIC HEADWINDS

10. Japan's macroeconomic challenges will grow as demographic headwinds intensify. Japan's population fell by about one million between 2012 and 2017—roughly the population of Stockholm. Official projections anticipate the population will rapidly age and shrink by over 25 percent in the next 40 years.[2] This will depress growth and productivity due to a shrinking and aging labor force and a shift toward consumption, while fiscal challenges will magnify with rising age-related government spending and a shrinking tax base. Additionally, labor market rigidities limit productivity growth and hamper the pass-through of demand stimulus to real wages and prices—effectively undercutting monetary transmission and blunting the impact of fiscal support.

Japan: Population Decline 2012–57; Estimated City Size Loss



Source: Japan National Institute of Population and Social Security Research; United Nations Statistics Division, *Demographic*.

11. Abenomics—now in year six—has eased financial conditions, reduced the fiscal deficit, and raised employment and female labor force participation.[3] However, inflation remains well below BoJ's two-percent target and fiscal policies have yet to put public debt on a sustainable path. The 'third arrow' of Abenomics (structural reforms) has made some headway but has fallen short overall. Bottlenecks remain in labor and product markets, and in the corporate sector.

[2] According to projections by the National Institute of Population and Social Security Research, over the next 40 years the fraction of the population aged 65 years and older will increase from 28 to 38 percent, and the total population will shrink by over 25 percent (from 127 million at present to only 95 million by 2058).

[3] The economic plan of Abenomics is anchored on "three arrows"—bold monetary easing, flexible fiscal policy and structural reforms. For previous IMF work, see Botman et al. (2015), *Can Abenomics Succeed? Overcoming the Legacy of Japan's Lost Decades*.

12. The strategy of Abenomics remains appropriate, but reinvigorated and credible policies are needed. Bringing Abenomics to full strength requires that the three arrows are reinforced and are mutually supportive.[4] Specifically:

- *Fiscal policy*: Near-term fiscal and income policies should support BoJ's reflation efforts and implementation of structural reforms. A well-specified and gradual medium-term consolidation plan, based on realistic growth assumptions, would help enhance near-term fiscal space, help ensure debt sustainability, and bolster public confidence in the government's capacity to manage the financial costs of the demographic transition.

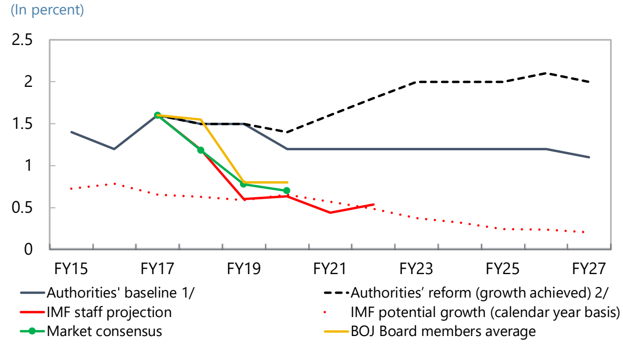
- *Structural reforms*: Credible macro-structural reforms are imperative to lift long-run growth and stabilize government debt. Confidence and anticipation effects—associated with a credible reform program—will be key to avoid any deflationary impact. Structural reforms would help boost inflation through more effective monetary policy transmission, resulting from a higher natural interest rate and reinvigorated wage-price dynamics.[5]

- *Monetary and financial policies*: The accommodative monetary policy stance should be maintained, but clear forward guidance and further strengthening of the monetary policy framework could help lift inflation expectations. Moreover, strengthened financial sector policies could mitigate the financial risks from demographic headwinds and prolonged low interest rates. This would improve BoJ's ability to maintain its accommodative stance for longer.

A. Fiscal Policy—Near-Term Support and Long-Term Sustainability

13. The credibility of the FY2025 primary surplus target would be enhanced by the adoption of more realistic macroeconomic projections and specification of consolidation measures. Despite a small downward revision in this year's update, the authorities' macroeconomic projections still rely on relatively optimistic assumptions on TFP growth, which are based on Japan's experience of the 1980s. At the same time, the optimistic growth projections for FY2019 and FY2020 do not provide guidance on the size of the mitigating measures needed to offset the adverse impact of the October 2019 consumption tax increase. The absence of concrete revenue and expenditure

Real GDP Growth Projections for Fiscal Consolidation Plan
(In percent)



Sources: Japan Cabinet Office, BOJ, JCER ESP forecast and staff projection.
1/ Assumes 1.3 percent real and 1.8 nominal GDP growth (FY2018-FY2027 average).
2/ Assumes 1.8 percent real and 3.1 nominal GDP growth (FY2018-FY2027 average).

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[4] For additional details and clarification on Japanese institutions, recommended policies and macroeconomic outturn, see IMF (2017) *Japan: Article IV Consultation—Staff Report*, IMF Country Report 17/242; IMF (2017) *Japan: Selected Issues*, IMF Country Report 17/243; IMF (2016) *Japan: Article IV Consultation—Staff Report*, IMF Country Report 16/267; and IMF (2016) *Japan: Selected Issues*, IMF Country Report 16/268.

[5] See 2018 Japan Selected Issues Paper "Understanding Wage Growth in Japan."

measures does not build confidence in the authorities' new fiscal plan. In the near-term, Japan continues to have some fiscal space, helped by limited funding risks and low borrowing costs. However, this is conditional on the adoption of a credible medium-term fiscal consolidation plan to anchor the debt trajectory. Japan's demographics, combined with a generous social security system, will further increase age-related costs. This will constrain fiscal space over the medium and long-term and call for a credible strategy that reaches well beyond FY2025.

14. Near-term fiscal tightening should be avoided—maintaining instead a neutral fiscal stance in 2019 and 2020 to make the planned consumption tax hike successful. The government has reaffirmed its commitment to the consumption tax hike in October 2019, which will bring in much needed revenue. But without mitigating measures to attenuate the adverse impacts, staff estimates that the 2019 and 2020 fiscal stance would be contractionary by 0.7 and 0.6 percent of GDP, respectively, as the effects of the 2018 supplementary budget fade and the October 2019 consumption tax increase comes into play. Therefore, measures should be implemented to support near-term reflation and growth momentum while helping advance accelerated structural reforms.

- *Mitigating the impact of the 2019 consumption tax rate increase*. Temporary mitigating measures should be carefully designed to alleviate the adverse impacts from the October 2019 tax increase. In particular, mitigating measures should address concerns over durable consumption including automobiles and housing. For example, abolishing the automobile acquisition tax could help partly offset the impact of consumption tax rate increase. The authorities could also consider a time-bound and well-targeted tax rebate or transfer program to reduce the tax burden on households at the lower end of the income distribution. Importantly, clear communication to the public on the timing and content of the measures will help alleviate adverse effects due to uncertainty.[6]

- *Strengthening income policies and raising administered prices.* Corporate tax incentives for wage increases should be strengthened, minimum wages raised further, and administratively-controlled wages and social transfers increased—including to reflect the impact of the consumption tax increase on prices. In addition, to support reflation efforts, reforming the price setting mechanism of administered prices should be considered to better reflect costs, with safeguards introduced for low-income households.

[6] See 2018 Japan Selected Issues Paper "The Impact of Consumption Tax Increases and Their Policy Implications for Japan." For policy uncertainty, see Arbatli et al (2017) "Policy Uncertainty in Japan" IMF WP 17/128.

15. A well-specified fiscal framework for the medium and long-term is needed to reduce policy uncertainty, address demographic challenges, and mitigate debt sustainability risks. The fiscal framework needs to rely on more independent and realistic assessments of the economic outlook and budget projections, specify fiscal consolidation measures, and limit the use of supplementary budgets. An independent fiscal institution (IFI) could play an important role in this regard. To protect growth while putting debt on a stable path, medium-term fiscal consolidation should embed a gradual approach with annual consolidation of about 0.5 percent of GDP in the structural primary balance, starting from 2021 (see text chart and Annex V). Essential steps include:

Options for Fiscal Policy Adjustment by 2030 (in percentage point of GDP) 1/

Adjustment needs by 2030	**7**
Improve structural primary balance by 0.5 percent of GDP to stabilize debt	5
Increase in health and long-term care spending	2
Options for adjustment	
Increase consumption tax rate from 8 to 15 percent	**3.5**
Health and long-term care reform (potential gains by 2030)	**Up to 2**
Curb growth rate of health spending	
Increase the share of out-of-pocket spending	
Other potential options	**Up to 2.5**
Personal income tax reform	
i) Broaden personal income tax base	0.5 - 1
ii) Eliminate preferential tax treatment for pension benefit income	0.25
iii) Targeted tax credits 2/	–
Increase property tax	+
Raise pension eligiblity age to 67 or higher	0.25
Containing non-social security expenditure in percent of GDP	Up to 1

1/ These estimates build on findings in McGrattan and others (2018), Nozaki and others (2017), Kashiwase and others (2012), and 2018 Japan Selected Issues Paper "Japan - Options for Healthcare Reform".
2/ Credits will reduce personal income tax revenue gains.

- *Gradual and steady increases in the consumption tax rate, beyond 10 percent*. To finance growing social security costs and reduce debt sustainability risks, consolidation should center on gradual increases in the consumption tax rate—the preferred financing option due to its relatively small negative effect on GDP and welfare including of future generations—until the rate reaches at least 15 percent. As far as possible, the unitary rate structure should be maintained as the tax rate moves beyond 10 percent, to enhance efficiency, reduce compliance and administrative costs, and support the revenue-raising capacity of the consumption tax. The cost of postponing adjustment is substantial as it benefits current elderly population to the detriment of future generations.[7]

- *Reforming healthcare*. Measures to contain total healthcare spending should balance the objectives of delivering meaningful fiscal savings and preserving public welfare, focusing primarily on improving efficiency. Increasing the share of out-of-pocket spending can help contain the fiscal burden of future generations, but safeguards for low-income households should be included. Staff analysis suggests that a combination of reforms could generate fiscal savings of up to 2 percent of GDP by 2030.[8]

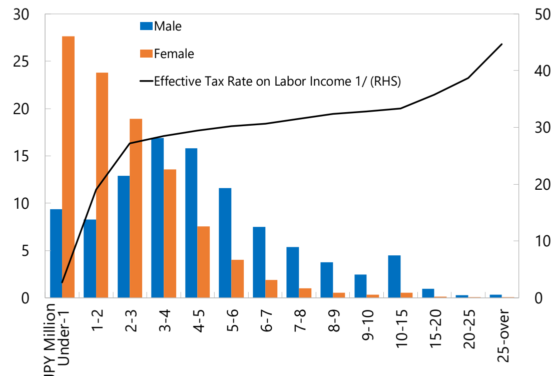
- *Addressing income inequality*. Reforms to curb social security outlays should protect the most disadvantaged groups among the elderly, while addressing intergenerational and regional

[7] See 2018 Japan Selected Issues Paper "Financing the Cost of Japan's Demographic Transition."

[8] See 2018 Japan Selected Issues Paper "Japan—Options for Healthcare Reform."

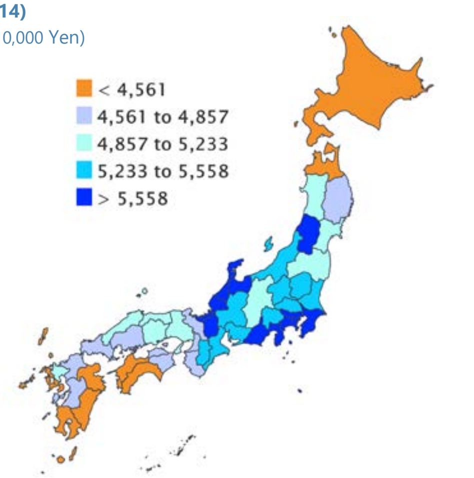
inequality. In addition, to reduce gender inequality, fiscal policy should support opportunities for women in the labor force, including by increasing the availability of childcare and nursing-care facilities, and eliminating disincentives to full-time and regular work embedded in the tax and social security systems.[9]

Japan: Distribution of Labor Earnings by Income Groups (2015)
(In percent)



Sources: National Tax Agency, IMF staff estimates.
1/ Estimate of effective labor income tax includes national and local personal income tax, and social security premiums.

Japan: Annual Real Income per Household by Prefecture (2014)
(In 10,000 Yen)



Source: National Survey of Family Income and Expenditure (2014).

Authorities' Views

16. **The authorities noted that the impact from the 2019 planned consumption tax rate increase will be smaller than the one from 2014.** In addition to a smaller rate increase (2 percentage points in 2019 versus 3 percentage points in 2014), a reduced tax rate for food and non-alcoholic beverages and additional spending for the Human Resource Development Revolution[10]—mainly funded by part of the revenue raised by the consumption tax rate increase—will ease households' net tax burden. The authorities also stressed that they will formulate additional mitigating measures by December, such as addressing demand fluctuations. They agreed with the importance of clear communication regarding the consumption tax increase and related mitigating measures.

17. **The authorities broadly agreed with the need for a stronger fiscal framework, but stressed that this can be accomplished through strengthening the existing framework and institutions.** The authorities recognized the importance of realistic macro-fiscal projections and expenditure reforms, through not only initial budgets but also supplementary budgets. While the authorities recognized the objectives of an independent fiscal institution (IFI), they stressed that the current framework can deliver on them via two councils providing advice on fiscal policy: the Council on Economic and Fiscal Policy (CEFP) (an advisory board to the Prime

[9] See 2018 Japan Selected Issues Paper "Inequality in Japan: Generational, Gender, and Regional Considerations."

[10] The policy package is mainly for improvement of the environment for raising children as a supply-side reform measure.

Minister) and the Fiscal System Council (FSC) (an advisory board to the Finance Minister). In this respect, the authorities noted that the CEFP has four outside members from academia and the private sector, and that the revision in medium and long-term growth projections in January 2018 was done in response to CEFP input. They noted that they will start to implement specific consolidation measures in social security, including a method for appropriately balancing benefits and burdens, within FY2019–FY2021 while conducting a comprehensive review of the social security system by FY2020. The authorities argued that the 2017 revision of the spousal tax deduction is expected to contribute to resolving the tax disincentive to full-time and regular work.

B. Macro-Structural Agenda—Reinvigorated Reforms

18. Structural reforms are essential to navigate Japan's demographic headwinds. Aging and depopulation will depress productivity and growth—shrinking real GDP. Weak growth and inflation prospects, together with rising age-related spending, pose serious fiscal challenges. Further, structural rigidities in the labor market dampen productivity growth and hamper the pass-through of demand stimulus to real wages and prices. A credible and well-coordinated reform package is paramount to achieving faster short- and long-term growth, higher inflation, and stabilization of government debt.

19. A reinvigorated structural reform agenda should boost productivity, labor supply, and investment, while strengthening the credibility of the reforms would support reflation.[11] The government has properly identified areas for reform, but gaps remain and implementation has been slow. Staff analysis finds that under current policies real GDP will decline by over 25 percent in 40 years due to demographics (Box 3). *Credible* implementation of all structural reforms (as outlined below), accompanied by a continued accommodative monetary stance and public debt stabilization, could significantly boost real GDP. Additionally, a credible reform program would help reflation as the demand boost due to anticipation effects (as firms and households increase investment and consumption due to higher expected capital returns and permanent income) exceeds the contemporaneous supply boost from the reform plan. While there is a range of uncertainties around such long-run model simulations, the simulations suggest that real GDP could be higher by as much as 15 percent in 40 years due to credible reforms, relative to the current-policies scenario. By contrast, a *not-fully-believed* path of reforms would deliver significantly lower effects on near-term real GDP (8 percent boost in 10 years), would not help inflation reach BoJ's two-percent target, and would lead to a smaller decline in the government long-run debt-to-GDP ratio.

20. The proposed reinvigorated reform agenda ranks reforms in terms of their output and inflation impact (see text chart including indicative reform estimates and ranges for the output and inflation impact).

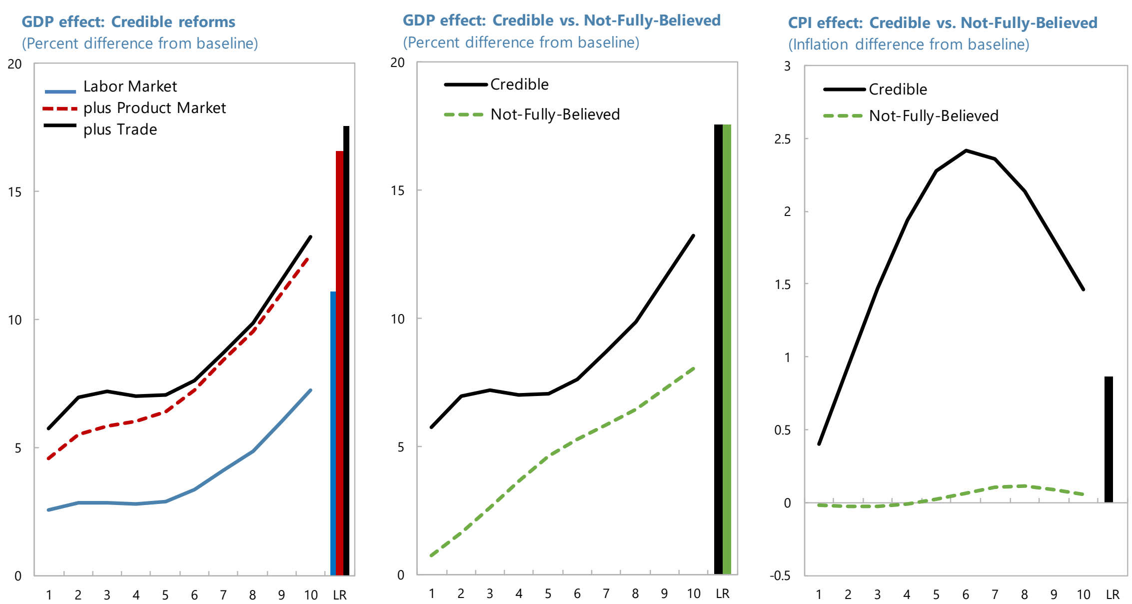
[11] Reform details can be found in Colacelli and Fernandez-Corugedo (2018), "Macroeconomic Effects of Japan's Demographics: Can Structural Reforms Reverse Them?", IMF Working Paper 18/248.

- ***Top-tier reform: Labor market reforms that increase productivity and labor supply.***

  The Diet passed Work Style Reform legislation in June, but the effects may be limited without supporting measures. Providing training and career opportunities to non-regular workers, including via contract reform, will help increase their productivity and real wages. Complementing "equal-pay for equal-work" legislation with job descriptions and a stronger reporting framework will increase its effectiveness.

  Increasing labor supply. Greater labor participation by women, older workers, and foreign workers could partly offset Japan's demographics. Eliminating disincentives in the tax and social security system to full-time and regular work, increasing availability of childcare and nursing facilities, and reducing the gender wage gap could increase female labor supply. Reducing excessive overtime and encouraging managerial practices rewarding productivity could further boost productivity and labor force participation, as could abolishing firms' right to set a mandatory retirement age.

Japan: Effects from Structural Reforms



Source: GIMF simulations from Colacelli and Fernandez Corugedo (2018).
Notes: Horizontal axis in years; LR denotes long-run/steady-state (40+ years). Lines are stacked on left chart so that black shows overall impact of credible reforms. Not-Fully-Believed scenario includes a delay in firms' uptake of labor market duality reform. Baseline refers to the simulation under current policies and demographic headwinds.

- ***Second-tier reform: Product market and corporate reforms to lift productivity and investment.***

  Facilitating exit of non-viable small- and medium-sized enterprises (SMEs) and entry of firms with stronger potential would increase productivity, along with reduced coverage of the credit guarantee system, incentivizing alternative sources of SME financing, supporting SME

R&D investment, and supporting business succession of firms with high growth potential.[12] Continued deregulation will help increase productivity and investment, including by lowering barriers to entry, removing incumbents' protections in some industries (telecom and gas), deregulating professional services,[13] and expediting deregulation in Special Economic Zones. Deeper corporate governance reform could help deploy cash reserves, and boost investment and productivity, including via more ambitious requirements for outside directors, explicit limits on cross-shareholdings, and enhanced transparency of beneficial ownership. Broader adoption of automation and AI could also boost productivity, but distributional concerns should be considered to ensure gains are spread evenly across occupations and regions.[14]

- ***Third-tier reform: Trade liberalization and FDI promotion to strengthen investment and growth.***

  Japan remains a global leader in supporting a multilateral free and open trading system. The Japanese government has recently made good progress by advancing the Japan-EU Trade Agreement and the CPTPP. It has also announced the intention to enter into negotiations with the United States. Further removal of tariff and non-tariff barriers in the context of high-standard multilateral trade agreements would boost Japanese investment and growth.

Authorities' Views

21. The authorities remain committed to an ambitious structural reform agenda and noted their continued progress. While acknowledging the challenges posed by the dual labor market, seniority system, and long-working-hours culture, the authorities assess that new regulations on wage gaps, working hours and overtime (coming into effect in April 2020) will boost productivity. They noted their continued efforts toward further boosting labor supply in order to compensate for demographic headwinds, including from female, older and foreign workers. The authorities noted that overall SME lending had decreased since the coverage reduction in the SME credit guarantee system in April (from 100 to 80 percent) but emphasized that banks' SME risk assessments had improved. They highlighted continued deregulation efforts in gas and electricity markets. The authorities pointed to the new guidelines and revisions to the corporate governance code, and noted that they expect to see an increase in board diversity and a reduction in firms' cross-shareholdings going forward. The authorities acknowledged their global leadership role in advancing multilateral trade agreements. Overall, they agreed with the importance of a credible and reinvigorated reform program to maximize its economic impact including by supporting reflation efforts.

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[12] See Colacelli and Hong (2018) "Productivity Drag from Small and Medium-Sized Enterprises in Japan?", forthcoming IMF Working Paper.

[13] See Colacelli (2017), "Why Isn't Private Investment Higher in Japan?", *Japan: 2017 Selected Issues Paper*.

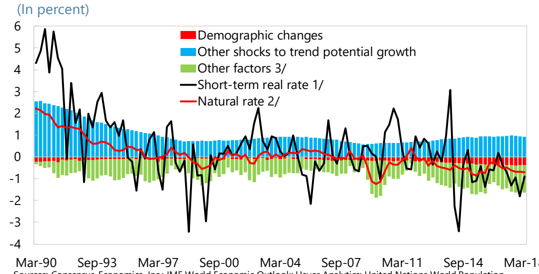
[14] See 2018 Japan Selected Issues Paper "Japan—Macroeconomic Implications of Automation."

C. Monetary Policy—In for the Long Haul

22. Monetary policy should remain accommodative while putting a premium on policy sustainability. Backward-looking inflation expectations (Box 1), structural rigidities, and adverse demographic trends are clogging the monetary transmission mechanism and reducing the effectiveness of monetary stimulus. These factors have manifested themselves in a narrow gap between the short-term actual and natural real interest rates (Box 4). Given the limited progress of monetary policy to generate inflationary pressures since the introduction of Abenomics, the BoJ must maintain the accommodative stance for a prolonged period. Continued efforts to make the accommodative stance more sustainable— including by mitigating side-effects from prolonged monetary easing—are crucial and consistent with a more patient approach to reaching the inflation target.

Japan: Natural Rate of Interest and Determinants

(In percent)

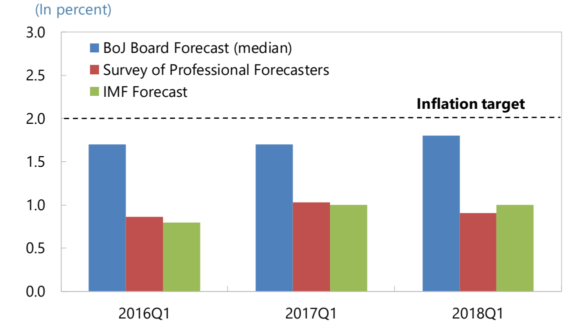


Sources: Consensus Economics, Inc.; IMF World Economic Outlook; Haver Analytics; United Nations World Population Prospects; and IMF staff estimates.
1/ *Ex ante* short-term real interest rate (= uncollateralized overnight call rate - inflation expectations).
2/ Bayesian medians estimated from a semi-structural model (using priors from regressions and literature) and sampled using two chains of 250,000 draws generated with an MCMC algorithm. See the forthcoming WP "Demogrpahics and the Natural Rate in Japan" for details.
3/ Other factors include excess global savings, as well as equity risk premium and economic policy uncertainty in Japan.

23. More can be done to improve market communication and further strengthen the monetary policy framework. Policy normalization by other major central banks and concerns about financial sector side-effects have complicated BoJ's reflation efforts and market communication. While the recent commitment to keep interest rates low for an extended period should help stem market speculation over an earlier-than-expected normalization, further improvements to the communication framework are imperative to enhance policy predictability and generate public support for achieving the inflation target. Specifically, the relationship between forward guidance on the long-term interest rate target and the inflation target could be clarified and the quantitative guidance on JGB purchases could be removed.[15] To strengthen the policy framework and help lift inflation expectations, the BoJ should consider moving closer to full-fledged inflation targeting by publishing BoJ's staff baseline forecast together with underlying policy assumptions. This should help reduce the discrepancy between market and the BoJ Board's inflation forecasts by enhancing the public's understanding of monetary policy as well as reducing the likelihood of overly optimistic inflation forecasts by BoJ Board members (see text figure).

Two-Year Inflation Forecast, 2016-18[1/]

(In percent)



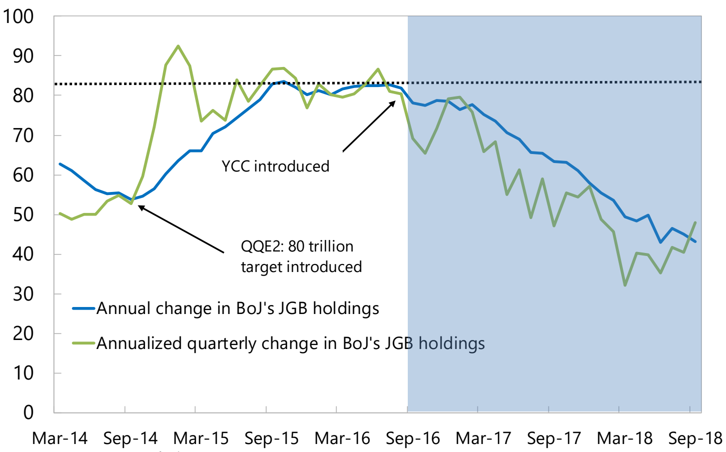
Sources: Bank of Japan, JCER, and IMF staff estimates.
1/ Dates refer to the time at which the forecast was made. Inflation forecasts exclude fresh food items and VAT impact.

[15] See also IMF (2016) *Japan: Article IV Consultation—Staff Report*, IMF Country Report 16/267 (Box 3) and IMF (2017) *Japan: Article IV Consultation—Staff Report*, IMF Country Report 17/242.

24. Financial sector side-effects, including JGB market functioning and potential distortions from ETF purchases warrant close monitoring.

- *JGB market.* Some liquidity indicators have improved amid reduced JGB purchases under Yield Curve Control (YCC). However, the number of market transactions has declined sharply since the beginning of 2018, raising concerns about market functioning. The July increase in the range for 10-year JGB yields could help improve market conditions. Moreover, better coordination between BoJ, Ministry of Finance (MoF) and market participants could make MoF's Liquidity Enhancement Auctions and re-opening issuances more flexible in reacting to changes in market conditions and investors' need for particular JGB issues. This could help prevent liquidity stress in the JGB market.

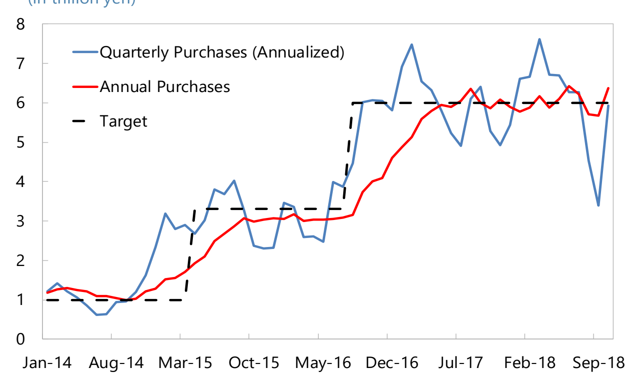
Annual Change in Outstanding JGBs and BoJ Holdings, 2014–18
(Trillion Yen)



Source: Haver Analytics.

- *ETF purchases.* BoJ's ETF purchases have increased substantially over the past few years, making BoJ one of the largest shareholders of listed companies. Concerns have been raised that ETF purchases are distorting equity prices, particularly of small-cap firms, and adversely affecting corporate governance (due to the ETF's passive voting power). Recent actions by the BoJ to further shift ETF purchases to the broader, market cap weighted Topix index, as well as conditioning future ETF purchase on market condtions could help allieviate some side-effects.

Annual ETF Purchases by Bank of Japan, 2014-18
(In trillion yen)



Source: Bank of Japan.

Authorities' Views

25. The BoJ acknowledged that reaching the inflation target will likely take more time than previously expected. The BoJ noted that because inflation expectations mostly respond to increases in actual inflation, efforts to maintain the output gap within positive territory will lead to achieving the price stability target of 2 percent at the earliest possible time. The authorities also argued that the current forward guidance on policy rates is appropriate as it strikes the right balance between the effectiveness of the commitment and the need to maintain future policy flexibility. Furthermore, the BoJ maintained that its quantitative guidance on JGB purchases indicates continuing the accommodative stance of monetary policy, and that publishing staff's forecasts would be confusing for market participants given that current forecasts by board members are already published to a sufficient extent.

26. The BoJ emphasized that it is carefully monitoring financial sector side-effects. The authorities agreed that interest rate formation in the JGB market has been somewhat rigid, and that there has been a notable decline in transactions, but that measures taken in July are expected to contribute to maintaining and improving market functioning. The BoJ also emphasized that while ETF purchases may vary depending on market conditions, the guideline for the annual pace of increase of about ¥6 trillion will be maintained. Overall, the BoJ agreed that examining side-effects from prolonged monetary easing will be important to maintain the sustainability of the accommodative stance of monetary policy.

D. Financial Sector Policies—Containing Risks

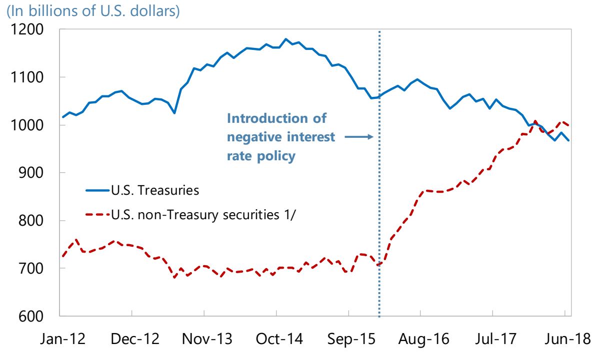
27. Japan's financial sector remains stable, but low interest rates and demographic headwinds are undercutting profitability and encouraging risk taking. The overall banking sector remains well capitalized and liquid. Nonetheless, the amount of risks taken by some financial institutions have exceeded their capital levels. Market risks from a large decline in equity prices or a sharp rise in JGB yields could lead to substantial losses for major banks and life insurers, while solvency concerns and higher risk taking due to demographic challenges and low interest rates are more severe for regional banks. In particular, the riskiness of credit allocation has increased significantly in recent years on the back of strong growth in lending to small enterprises, and exceeded the levels seen during the global financial crisis.[16] Meanwhile, the ratio of real estate loans-to-GDP has reached an historic high. Moreover, banks have increased substantially their holdings of investment trusts while long-term investors have stepped up their risk taking in foreign securities.[17] Risks associated with these activities should be carefully monitored and assessed against financial institutions' risk management capacity. Recent stress testing conducted by the BoJ highlighted authorities' concerns over the impact of low profitability on capital levels, and increased lending to financially vulnerable firms.

[16] An increase in the riskiness of credit allocation signals heightened downside risks to GDP growth and a higher probability of banking crises and banking sector stress. Most of the small-enterprise lending is extended by regional banks to the real estate sector, and hence may be at higher risk given that the rising condominium prices are assessed to be moderately overvalued and that demographic changes are expected to put significant downward pressures on equilibrium prices in the medium- to long-term.

[17] Banks' holdings of investment trusts increased from about ¥6 trillion in 2013 to over ¥18 trillion in August 2017—over 80 percent of the increase was contributed by regional financial institutions.

Japan: Investments in Long-Term U.S. Securities

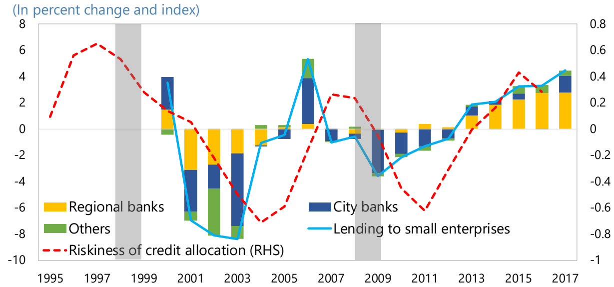
(In billions of U.S. dollars)



Sources: U.S. Department of Treasury; and IMF staff calculations.
1/ Including U.S. agency bonds, corporate and other bonds, and corporate stocks.

Lending to Small Enterprises and Riskiness of Credit Allocation[1/]

(In percent change and index)



Source: IMF, April 2018 Global Financial Stability Report (GFSR).
[1/] The riskiness of credit allocation is an index constructed using firm-level data that measures the extent to which riskier firms receive credit relative to less risky ones (IMF, April 2018 GFSR). The index can be calculated based on different measures of firms' riskiness, including leverage, interest coverage ratio, debt overhang, and expected default frequency. The index presented in this chart is a simple average of all these indices after taking two-year moving averages. Shaded areas indicate periods of negative annual real GDP growth for two consecutive years.

28. **Financial sector policies should be enhanced to contain the build-up of systemic risks in line with the 2017 FSAP recommendations** (see Annex VI).[18]

- *Enhance risk management and strengthen financial oversight.* Financial institutions (particularly regional), should improve the effectiveness of credit risk management by, for example, making loan-loss provisioning more forward-looking. The JFSA's new supervisory framework is a step in the right direction to help keep pace with more sophisticated activities among financial institutions. However, a more rigorous risk assessment process and a risk tolerance framework should be introduced to support the transition to a full risk-based approach. Capital requirements should be better tailored to individual bank's risk profiles, corporate governance could be further strengthened across the banking and insurance sectors, and an economic-value-based solvency regulation for the insurance sector should be introduced. The JFSA's recent move to include four more banks in its stress testing framework is welcome, while the macroprudential framework should be further strengthened in line with FSAP recommendations.

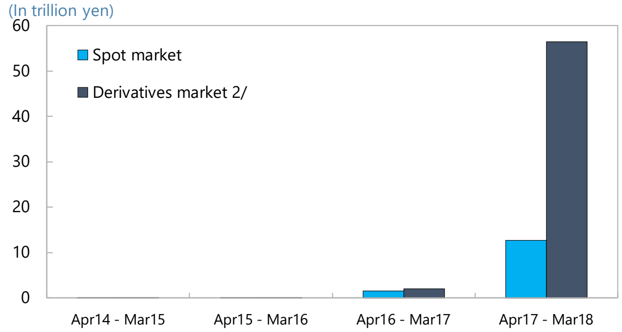
- *Adjust business models and strengthen crisis management and resolution.* The JFSA should encourage regional financial institutions to adapt their business models to prevailing demographic trends, including through revenue diversification, utilization of IT and Fintech, and consolidation. The JFSA recently expanded the total loss absorbing capacity (TLAC) requirement to one domestic systemically-important bank (D-SIB), and should further strengthen the crisis management and resolution framework to avoid expectations of public support.

[18] For details of the recent Japan FSAP, see IMF (2017) *Japan : Financial System Stability Assessment*, IMF Country Report 17/244.

29. The JFSA could further facilitate Fintech adoption and should continue to strengthen crypto-asset oversight. Japan remains a heavily cash-based society with relatively low Fintech penetration—particularly in regional economies, despite the government's efforts to increase cashless payments.[19] The adoption of Fintech by regional banks has been largely discouraged by an aged customer base, limited resources, the lack of experience in managing cyber risk, and the lack of clear Fintech regulations. Measures could be taken to increase cyber resilience in regional financial institutions and Fintech firms. The JFSA should continue to promote RegTech to reduce regulatory costs and incentivize Fintech firms to participate in the regulatory sandbox (by, for example, reducing the regulatory reporting costs inside the sandbox for small start-ups). On crypto-asset oversight, more emphasis should be put on cybersecurity in crypto-asset exchanges, which requires adequate human and IT resources at the JFSA (Box 5). The JFSA should also clarify with the public its role in the exchange registration process to reduce reputational risk. Enhanced cross-border supervisory collaboration could help prevent regulatory arbitrage and avoidance.

Rapid Increase in Crypto-Asset Trading in Japan 1/

(In trillion yen)



Source: JFSA.

1/ Total transactions of top 5 crypto-assets (Bitcoin, Ethereum, XRP, Bitcoin Cash, and Litecoin) based on information provided by 18 crypto-asset exchanges operating in Japan. Prices at end-March of each fiscal year is used to calculate the transaction amount.

2/ Derivatives include contract for difference, margin, and futures.

Authorities' Views

30. The JFSA stressed its close monitoring of financial risks and argued that significant progress was made in implementing the 2017 FSAP recommendations. The JFSA is examining whether regional banks have adequate risk management capacity for emerging risks, but does not see excessive risk taking at this moment. On insurance oversight, the JFSA plans to incorporate the idea of economic-value-based solvency assessments in its supervision and inspection, while working towards the introduction of economic-value-based solvency regulation in line with the development of the Insurance Capital Standard by the IAIS. The JFSA reiterated its preference to implement measures to contain potential systemic risks through microprudential approach, while introducing some macroprudential policies such as countercyclical buffer. The JFSA also emphasized efforts made to limit the need for temporary public funding, such as various works to improve financial institutions' resolvability and the expansion of the scope of the requirements on Total Loss Absorbing Capacity.

31. The JFSA agreed that more could be done to facilitate the use of Fintech. The JFSA has emphasized that it is important for regional banks to build a sustainable business model, and stressed the need for regional banks to further streamline management, increase the use of IT, develop areas of expertise, and improve corporate governance. The JFSA highlighted cyber risk as a

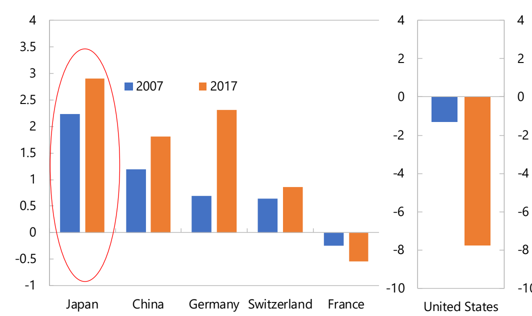
[19] The JFSA has amended regulations to facilitate banks' investments in Fintech firms and to encourage open innovation between financial institutions and Fintech firms by utilizing the open API (application programming interface) architecture.

key (although not systemic) risk, and agreed that measures could be taken to increase cyber resilience in regional financial institutions and crypto-asset exchanges. The JFSA does not see significant reputational risks from registered exchanges, but echoed the need for enhanced cross-border collaboration in crypto-asset oversight.

E. External Position and Spillovers

32. The external current account (CA) surplus increased by 0.1 percent to 4.0 percent of GDP in 2017, due to a stronger income balance. Japan's positive CA is due mostly to corporate saving in excess of domestic investment. The sizable income surplus, arising from Japan's large NFA position and high net returns, accounts for most of the CA surplus (about 90 percent in 2017). The CA surplus is expected to shrink in 2018 to 3.6 percent of GDP, reflecting smaller goods trade and income balances. The yen has appreciated slightly in the first nine months of 2018 (in real effective terms) relative to end-2017.

Net International Investment Position
(In trillions USD)



Source: IMF, *World Economic Outlook October 2018.*

33. The 2018 external position is projected to be broadly consistent with fundamentals and desirable policies, while bold structural reforms are required to maintain external balance going forward. As with the 2017 external sector assessment, the projected 2018 CA balance is preliminarily assessed as in line with the CA level consistent with fundamentals and desirable policies. Based on this CA assessment, the 2018 real exchange rate is also preliminarily assessed as in line with the real exchange rate level consistent with fundamentals and desirable policies (see Annex VII). Looking ahead, a well-specified medium-term fiscal consolidation plan and bolder and credible structural reforms that support growth and domestic demand are needed to maintain external balance. Staff estimate that the credible implementation of all structural reforms outlined will reduce the external current account surplus by over 1 percent of GDP in the medium term (see Box 3).

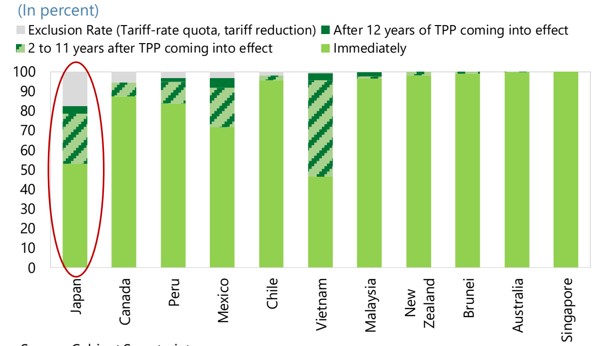
34. Rising global interest rates amid Japan's continued accommodative monetary policy could amplify outward spillovers. Monetary easing in Japan and 'search-for-yield' by Japanese investors continue to support FDI outflows and overseas diversification by institutional investors. This should help offset tighter global financial conditions and potentially mitigate disruptive capital flows, particularly for emerging market and developing countries in the region. On the other hand, speculation over earlier-than-expected policy normalization in Japan could cause a significant shift in global market perceptions and accelerate global financial tightening. Moreover, growing differentials between global and domestic interest rates could encourage investors to take unhedged yen carry trade positions. A sharp reversal of these positions, due to heightened global uncertainty from trade or geopolitical tensions, could lead to a large and sudden appreciation of the yen. While a yen appreciation could help boost foreign investors' asset returns, it could also adversely affect BoJ's efforts to reflate the economy (see Box 6).[20]

[20] See 2018 Japan Selected Issues Paper "What Drives Rapid Yen Appreciations?"

35. Continued advancement of multilateralism can help mitigate inward spillovers, including from potential trade-war escalation. Japan's trade and FDI regimes show relative openness, with agricultural support being the only area ranking as relatively restrictive vis-à-vis other G20 countries. A global retreat from cross-border integration would likely reduce Japan's net exports, investment and growth, including from direct and indirect effects via global value chains and adverse spillovers to the financial sector. For example, the October 2018 *World Economic Outlook* estimates that if the U.S. imposes the threatened 25 percent tariff on imported cars and car parts in 2019 (with trading partners responding with tariffs on an equivalent amount of U.S. goods exports), Japan will have a notable decline in output (i.e. long-run decline of almost 0.2 percent). Japan's recent leadership in advancing multilateralism can help mitigate inward spillovers from a rise in protectionism.

Tariff Elimination Schedule in Agriculture, Fishing, and Livestock Goods under CPTPP Agreement

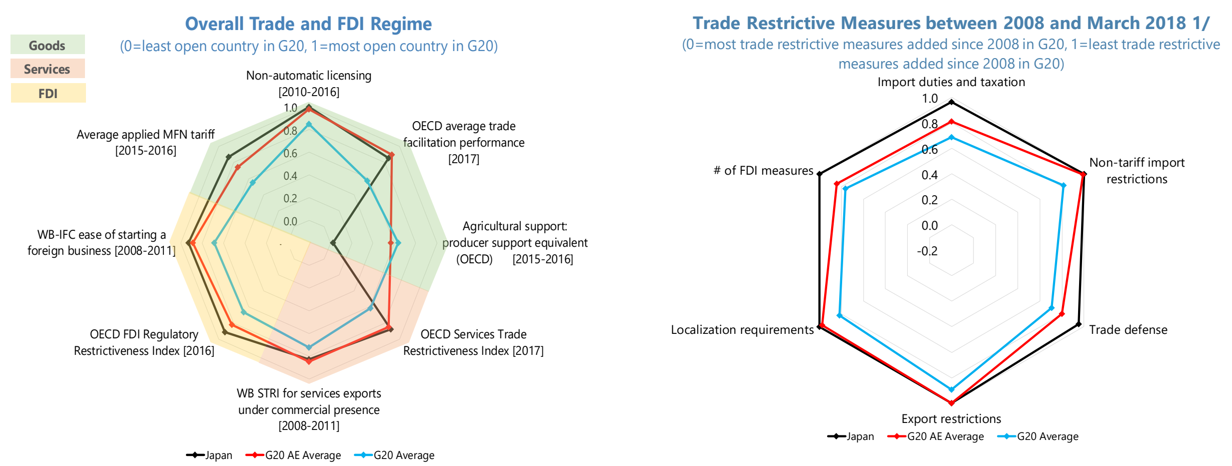
(In percent)



Source: Cabinet Secretariat.

Note: Elimination schedule shown as percent of tariff categories.

Japan: Selected Trade Policy and FDI Indicators



Notes: The indicators reflect no judgment as to WTO compliance of underlying measures, nor whether certain measures (such as trade defense) are an appropriate response to the actions of other countries. The "ease of starting a business" indicator is based on perceptions as part of an established IFC survey process.

Source: Cerdeiro and Nam IMF WP, 2018. Tariff data are from the WTO, World Tariff Profiles; the import licensing measure is based on UNCTAD TRAINS and COMTRADE data; the average trade facilitation performance, agricultural support measure, Services Trade Restrictiveness Index (STRI), and FDI Restrictiveness Index are from the OECD; WB STRI is from the World Bank; the post-GFC indicators are from Global Trade Alert.

1/ Import (export) coverage ratio, except for the case of FDI (number of measures).

Authorities' Views

36. The authorities agreed with the preliminary 2018 external assessment and related policy recommendations but expressed concerns regarding the methodology. The authorities agree that bolder and credible structural reforms and medium-term fiscal consolidation plans are needed to maintain external balance by supporting growth and domestic demand. However, the authorities continue to have concerns over the REER assessment and the EBA methodology. On the

REER assessment, the authorities emphasized the weak relationship for Japan between the exchange rate and the trade balance, and they stressed that the exchange rate has little relationship with the income balance. Due to the prominent role of the income balance in Japan's CA, the authorities disagreed with the assumed link between the CA and the REER used for the REER assessment. Moreover, the authorities questioned potential policy recommendations that may advocate for exchange rate adjustment to reduce excess imbalances, particularly for cases where the CA is dominated by the income balance. On the EBA methodology, the authorities were appreciative of the recent refinements of the EBA CA model, but asked that the IMF should pursue providing further policy recommendations on structural reforms to address the imbalances identified by the EBA CA model, rather than focusing on the REER assessment.

37. The authorities highlighted the benefits of multilateralism and did not see, at the moment, significant spillovers from divergent advanced economy monetary policies. The authorities saw potentially large dampening effects from a rise in protectionism and plan to continue moving ahead with multilateral efforts to advance a free, fair and rules-based trading system. While recognizing the potentially large impact of carry trade on the exchange rate, the authorities did not observe, at the time of the meeting, a significant build-up of carry trade positions due to the widening differential between global and domestic interest rates.

F. Efforts in Tackling the Supply-Side of Corruption

38. While Japan has a low level of corruption in IMF staff's view, recent efforts in implementing the OECD Anti-Bribery Convention have the potential to facilitate a more pro-active detection, investigation and prosecution of foreign bribery cases. The report by the OECD Working Group on Bribery in International Business Transactions, which for Japan is the basis of IMF staff's assessment, noted positive aspects of Japan's implementation of the Convention. [21,22] These include raising awareness of Japan's foreign bribery offence among the legal profession and businesses. It was also noted that the police and prosecutors, and other agencies such as the National Tax Agency, Financial Service Agency's Securities and Exchange Surveillance Commission, had started to coordinate and share information more closely.

39. The report of the OECD Working Group on Bribery raised serious concerns over Japan's enforcement of foreign bribery laws. Efforts should focus on: (i) stepping up efforts to detect, investigate and prosecute foreign bribery cases; (ii) urgently establishing a legal basis for confiscating the proceeds of bribing foreign public officials and criminalizing the laundering of the proceeds of foreign bribery; (iii) ensuring that the Ministry of Economy,

[21] The information contained herein does not prejudice the Working Group's monitoring of the implementation of the OECD Anti-Bribery Convention. The assessment is based on the Phase 3 report adopted by the OECD Working Group on Bribery in International Business Transaction in December 2011 and published by Japan in January 2012, the February 2014 follow-up report, and a factual update provided by the authorities.

[22] OECD Phase 4 report will be adopted in June 2019. The discussion on whether Japan has an effective AML/CFT system designed to prevent foreign officials from concealing the proceeds of corruption will be included in a future Article IV consultation staff report when the FATF fourth round report for Japan is completed. Japan's last FATF report was adopted in November 2008.

Trade and Industry—which is the main government body with responsibility for Japan's implementation of the Anti-Bribery Convention—takes a stronger role in ensuring the effective implementation of the Convention; and (iv) reviewing its whistleblower protection legislation. Due to concerns about the low level of enforcement of Japan's offence of bribing foreign public officials—just four prosecutions since 1999—a June 2016 high-level OECD mission urged the authority to implement the Phase 3 recommendations, in particular to establish the legal basis for confiscating the proceeds of foreign bribery and to criminalize the laundering of such proceeds. Japan is urged to continue to move forward to implement these recommendations.

40. The authorities have also provided Fund staff with an update on recent developments in response to the Phase 3 recommendations. Those are mostly related to organizing police and prosecution resources to detect and enforce against cases of foreign bribery (e.g., appointment of chief prosecutors and police officers to handle foreign bribery cases in the capital and some districts), upgrading some aspects of the legal framework (e.g., the Act on Punishment of Organized Crimes and Control of Crime Proceeds amended to confiscate the proceeds of foreign bribery and criminalize the laundering of such proceeds), introducing the "Agreement[23]" and providing further guidance and training to relevant stakeholders (e.g., 225 overseas diplomatic missions).

Authorities' Views

41. The authorities acknowledge the relevance of the IMF initiative to assess efforts to address issues related to the supply side of corruption, and noted that they had volunteered to be part of this assessment. They stated that they are implementing the OECD Phase 3 recommendations. The authorities noted that they have developed an action plan based on the OECD's follow-up report on Phase 3 of the Anti-Bribery Convention. As part of that action plan, the legal framework has been strengthened, in part by amending (in June 2017) the Act on Punishment of Organized Crime and Control of Crime Proceeds to include foreign bribery, including revising the associated guidelines. In addition, the Code of Criminal Procedure was amended in 2016 and came into effect in 2018, resulting in increased indictments for foreign bribery. The Ministry of Foreign Affairs (MOFA) has, in line with OECD recommendations, requested overseas diplomatic missions to designate officials as contact points in order to receive inquiries and notifications about foreign bribery cases and gathering of related information. To prevent corruption related to Official Development Assistance (ODA), MOFA also provides consultation services to Japan's ODA projects. The authorities also noted that they had been strengthening efforts to raise the awareness of the offence of foreign bribery among the Japanese legal profession, businesses, and the general public.

[23] Under the Agreement proceeding, a public prosecutor agrees with the suspect/defendant in cases of certain crimes to provide favorable treatment for the criminal case against the suspect/defendant in return for cooperation with regard to the criminal case against a third person.

STAFF APPRAISAL

42. The Japanese economy continues to grow above potential, but inflation remains low and downside risks have increased. Underlying growth is expected to remain solid, notwithstanding the scheduled increase in the consumption tax rate in October 2019, with near-term inflation reaching slightly above one percent in light of a still-negative output gap. Over the medium term, growth is projected to moderate and the output gap to close. Following a consumption tax-induced spike in 2020, inflation will rise over the medium term, but will likely remain below the Bank of Japan's target. Downside risks to the outlook have risen, in line with the cooling global outlook and adverse demographic pressures.

43. Bringing Abenomics to full strength requires reinvigorated policies that are mutually supportive. Near-term fiscal and income policies underpinned by a well-specified medium-term consolidation plan would help support BoJ's inflation efforts and ensure debt sustainability. Credible macro-structural reforms are imperative to lift long-run growth and stabilize government debt. The confidence and anticipation effects from these reforms should help to avoid deflationary effects. The accommodative stance of monetary policy should be maintained, but measures to clarify forward guidance and strengthen the monetary policy framework should help lift inflation expectations. Finally, strengthened financial sector policies would mitigate the financial risks from demographic headwinds and prolonged low interest rates.

44. Near-term fiscal tightening should be avoided to support reflation and growth momentum. Fiscal measures and stronger income policies should be implemented to support near-term reflation and growth momentum while helping advance accelerated structural reforms. To alleviate the adverse macroeconomic impact from the planned October 2019 consumption tax rate increase, temporary mitigating measures should be carefully designed.

45. For the medium and long-term, a well-specified fiscal framework is needed to reduce policy uncertainty, address demographic challenges, and mitigate debt sustainability risks. The fiscal framework needs to rely on independent and realistic assessments of the economic outlook and budget projections, set out fiscal consolidation measures, and limit the use of supplementary budgets. To protect growth while putting debt on a stable path, medium-term fiscal consolidation should embed a gradual approach with annual consolidation of about 0.5 percent of GDP in the structural primary balance, starting from 2021. Essential steps include gradual and steady increases in the consumption tax rate beyond 10 percent and containment of healthcare spending.

46. An ambitious effort toward labor, product market, and corporate reforms is needed. A high degree of government commitment will strengthen the credibility of the reform program and help counter deflationary effects. Labor market reforms should be prioritized as they would have the largest growth and inflation impact. Training and career opportunities for non-regular workers should be fostered, including via contract reform. Labor supply should be enhanced, including from women, older workers, and foreign workers. Disincentives in the tax and social security system to full-time and regular work should be eliminated, the gender wage gap should be reduced, and childcare and nursing facilities' availability should be increased. Reforms to corporates and the product market are the second priority, where exit of non-viable SMEs and entry of firms with potential should be increased, together with a reduction in coverage of the credit guarantee system, incentives for alternative sources of SME financing and SME R&D investment, and support for business succession of firms with potential. Continued deregulation in product and services markets is needed together with deeper corporate governance reform. In addition, tariff and non-tariff barriers should be further removed within multilateral trade agreements.

47. The Bank of Japan (BoJ) should maintain its long-term interest rate target while further strengthening the policy framework. The BoJ's recent emphasis on making the accommodative stance more sustainable by mitigating side-effects is appropriate and complements its shift to a more patient approach to reaching the inflation target. Building on this progress, the relationship between forward guidance on the long-term interest rate target and the inflation target could be clarified and the quantitative guidance on JGB purchases removed. Moreover, to help lift inflation expectations, the BoJ should consider moving closer to a full-fledged inflation targeting framework by publishing BoJ's staff baseline forecast together with underlying policy assumptions.

48. Financial sector policies should be strengthened to safeguard financial stability and adapt regional financial institutions' business models to demographic trends. The JFSA's new supervisory framework is a step in the right direction towards a full risk-based approach. The JFSA should continue to encourage financial institutions (particularly regional) to improve risk management capacity and further enhance financial oversight (including macroprudential framework) to prevent the build-up of systemic risk. The authorities should further engage with regional banks to facilitate the adaptation of their business models to demographic change. Strengthening the crisis management and resolution framework would help reduce expectations of public support and facilitate the smooth exit of unviable financial entities. Moreover, the JFSA could further facilitate financial institutions' efforts to leverage Fintech and should continue to strengthen crypto-asset oversight.

49. The 2018 external position is projected to be broadly consistent with fundamentals and desirable policies. The recommended policy package is needed to maintain external balance and advancement of multilateralism would help mitigate inward spillovers. The projected 2018 current account balance is preliminarily assessed as in line with the current account level consistent with fundamentals and desirable policies, and the 2018 real exchange rate is also preliminarily assessed as in line with the real exchange rate level consistent with fundamentals and desirable policies. A well-specified medium-term fiscal consolidation plan and bolder structural reforms that support growth and domestic demand—in line with staff's recommended policy package—are needed to maintain external balance over the medium term. Japan's leadership in advancing multilateralism can help mitigate inward spillovers from a rise in protectionism.

50. **Efforts to improve enforcement against foreign bribery should continue.** Efforts to combat the supply side of corruption are welcome, including through greater awareness of the OECD Anti-Bribery Convention. Notwithstanding Japan's recent efforts to better organize resources to detect and enforce cases of foreign bribery, there are concerns regarding the low level of enforcement of Japan's offence of bribing foreign public officials, and further enforcement is urged.

51. **It is recommended that the next Article IV consultation take place on the standard 12-month cycle.**

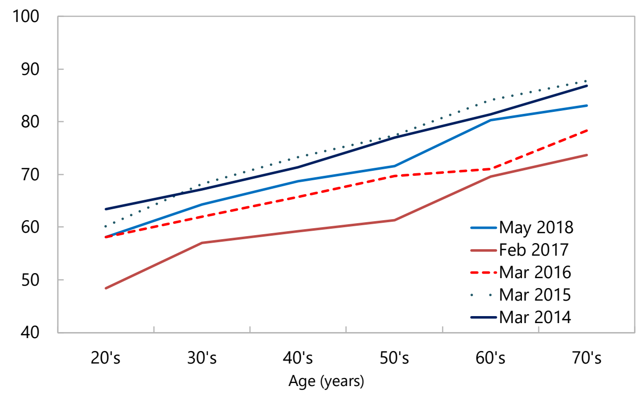
Box 1. What Explains Low Inflation Expectations in Japan?[1]

Despite a recent gradual upward trend of consumer price index (CPI) inflation, a prolonged period of deflation from the mid-1990s has led to stubbornly-low inflation expectations in Japan. Younger cohorts have lower inflation expectations than older Japanese, due to their limited exposure to inflation. Business competition in some areas and low inflation expectations put pressure on Japanese firms to find ways to maintain current prices despite rising costs.

Inflation expectations across age cohorts. Using micro-level datasets and a University of Tokyo consumer survey, a positive correlation between age and inflation expectations is derived, with younger Japanese having lower inflation expectations than older cohorts (text figure).[2] This shows that historical experience of inflation, or the lack thereof, plays a role in how individuals form expectations about future price increases.

Japan: Age Profile of Inflation Expectations

(Percent of respondents who think that price will rise in the next 12 months)

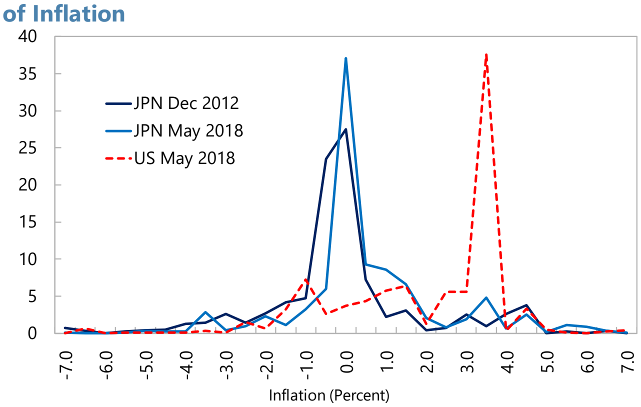


Sources: Diamond, Watanabe and Watanabe (2018); University of Tokyo.

Product downsizing. With intense business competition in some areas (i.e. mobile-phone related prices and supermarket prices) and low inflation expectations by consumers, Japanese firms search for ways to respond to rising costs by not raising prices. Product downsizing, the practice of substituting identical products with a reduction in size and/or weight, is one solution adopted by some Japanese firms. In particular, product downsizing accounts for about one third of product substitutes within the studied dataset over the last 10 years.[3]

Stubbornly low inflation. Firms' reluctance to raise prices further reinforces low inflation and low inflation expectations. According to research from the University of Tokyo, nearly half of the goods items in the CPI basket exhibit an annual rate of price change of near zero (text figure). A large share of near-zero inflation items was observed not only during the period of deflation, but also in recent months, following six-years of monetary easing by the Bank of Japan and a return to positive CPI inflation.[4] Concentration of zero-price inflation in the distribution of item-level inflation in Japan is significantly different from that observed in other advanced economies, including the United States, where the mode of item-level inflation is centered around three and a half percent (text figure).

Japan vs. United States: Distribution of Item-by-Item Rates of Inflation



Sources: Watanabe and Watanabe (2018).

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[1] Prepared by Gee Hee Hong (APD).

[2] See Diamond, Watanabe and Watanabe (2018), "The Formation of Consumer Inflation Expectations: New Evidence from Japan's Deflation Experience," Working Paper CARF-F-422, Center for Advanced Research in Finance.

[3] See Imai and Watanabe (2018), "Product Downsizing and Hidden Price Increases: Evidence from Japan's Deflationary Period," *Asian Economic Policy Review.*

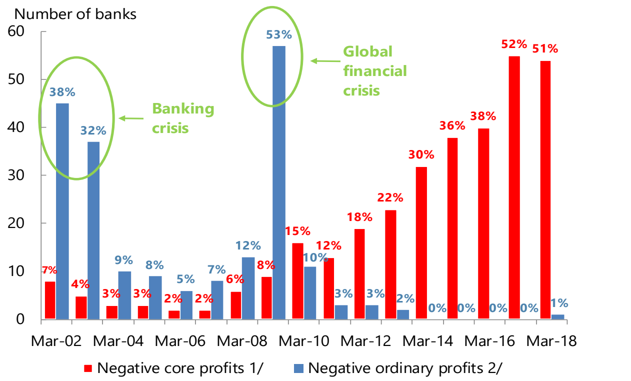
[4] See Watanabe and Watanabe (2018), "Why Has Japan Failed to Escape from Deflation?" *Asian Economic Policy Review.*

Box 2. Challenges for Regional Banks in Japan[1]

Regional banks play an important role in prefectural financial intermediation. There are currently 104 regional banks operating in Japan's 47 prefectures, accounting for 45 percent of outstanding domestic loans. Deposits—which account for about 90 percent of liabilities—are used to extend loans (64 percent of assets), primarily to SMEs and households but also to invest in securities (22 percent). About half of regional banks' total income now comes from lending operations, while interest income from securities and fee income account for 19 and 17 percent, respectively.

The traditional business model of regional banks is being challenged by adverse demographic trends and prolonged low interest rates. The dependence on regional lending has left many regional banks vulnerable to shrinking and aging prefectural populations.[2] A smaller and older population typically translates into lower loan demand, increased competition between banks, and lower core profitability (i.e., lending and fee business). In fact, the share of regional banks earning negative core profits rose from 12 percent in 2011 to over 50 percent in 2018 (see figure). Moreover, because deposit growth has proven less sensitive to demographic trends than loan growth, the loan-deposit ratios of regional banks have fallen. Excess liquidity combined with low interest rates have induced banks to search for other higher yielding investment opportunities.

Japan: Number of Regional Banks with Negative Profits



Sources: Japanese Bankers Association; and IMF staff calculations.
Note: The percentages above the red (or blue) bars represent the share of regional banks that have negative core (or ordinary) profits.
1/ Core profits include profits from lending operations and net fee income. Interest expenses from lending operations are estimated as the interest expenses on deposits multiplied by the share of loans in total loans and securities.
2/ Ordinary profits include core profits, net trading income, and net other income.

Regional banks should diversify their revenue base to boost income and improve efficiency through better utilization of IT/Fintech and consolidation. Fees and commissions account for a much smaller share of total income in regional banks than that of major banks, and are more concentrated in fund-transfer services and sales of investment trusts. Regional banks have been taking measures to boost and diversify fee-based income, including from business matching and succession. Experience in other countries has shown that unbundling banking services and charging fees for routine banking transactions may also help boost profits, although competitive pressures have prevented Japanese banks from introducing such fees on their own. Moreover, Fintech (including the open API) has the potential to help raise profitability (e.g., by improving the efficiency of human resources and by broadening the customer base through better information and data sharing), but may also increase competition among financial institutions.

Increased risk taking in more sophisticated investments by regional banks should be carefully monitored and managed. Regional banks have increased overseas lending, SME lending to domestic middle-risk firms and real estate sector, as well as holdings of investment trusts—which mainly invested in foreign bonds (41 percent), domestic equities (19 percent), and real estate funds (17 percent) as of end June 2018. Regional banks should enhance their risk management framework, particularly the capacity of credit and market risk assessment. FX funding liquidity risk should also be carefully managed as dollar funding costs rise. By facilitating information and data sharing, Fintech could help improve the real-time monitoring of SME lending and credit risk assessment. Ensuring cybersecurity is another important challenge amid the increased utilization of IT and Fintech.

[1] Prepared by Fei Han (MCM) and Niklas Westelius (APD).

[2] The average prefectural population growth rate fell into negative territory in the early 2000s. By 2015, only a handful of prefectures—mostly those in metropolitan areas—still experienced positive population growth.

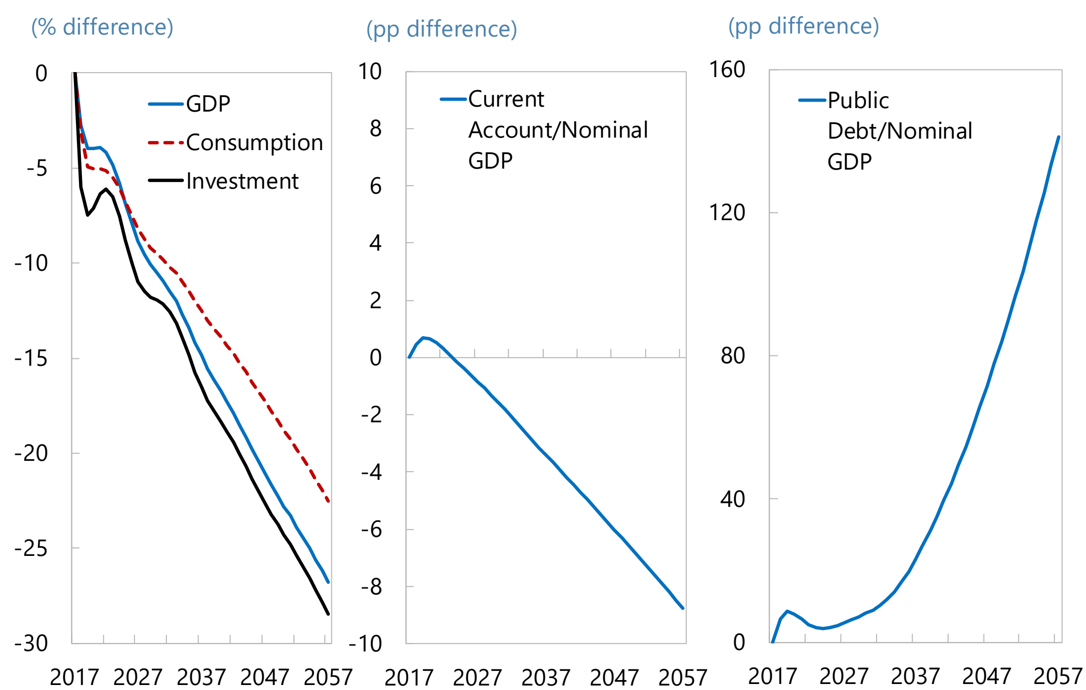
Box 3. Demographics and Structural Reforms[1]

Using the IMF's Global Integrated Monetary and Fiscal Model (GIMF) with newly-added demographic features, staff estimate that Japan's real GDP will decline by over 25 percent in about 40 years due to demographics and under current policies, while the external current account will decline and public debt will grow. Structural reforms are estimated to significantly reverse the adverse demographic effects and boost real GDP by as much as 15 percent in 40 years relative to the current policies scenario, with labor market reforms having the largest impact. Credible reforms are estimated to reduce the external current account surplus in the medium term and significantly reduce the public debt.

Japan's baseline scenario under current policies. GIMF simulations over the next 40 years— using the authorities' demographic projections plus associated age-related health and pension spending projections — point to significant declines in real GDP, consumption, and investment, with a reduction in the external current account and a notable increase in the public debt-to-GDP ratio.[2]

Japan: Impact of Demographic Projections

(Baseline Simulations; Difference Relative to 2017)



Sources: GIMF simulations and authors' calculations.

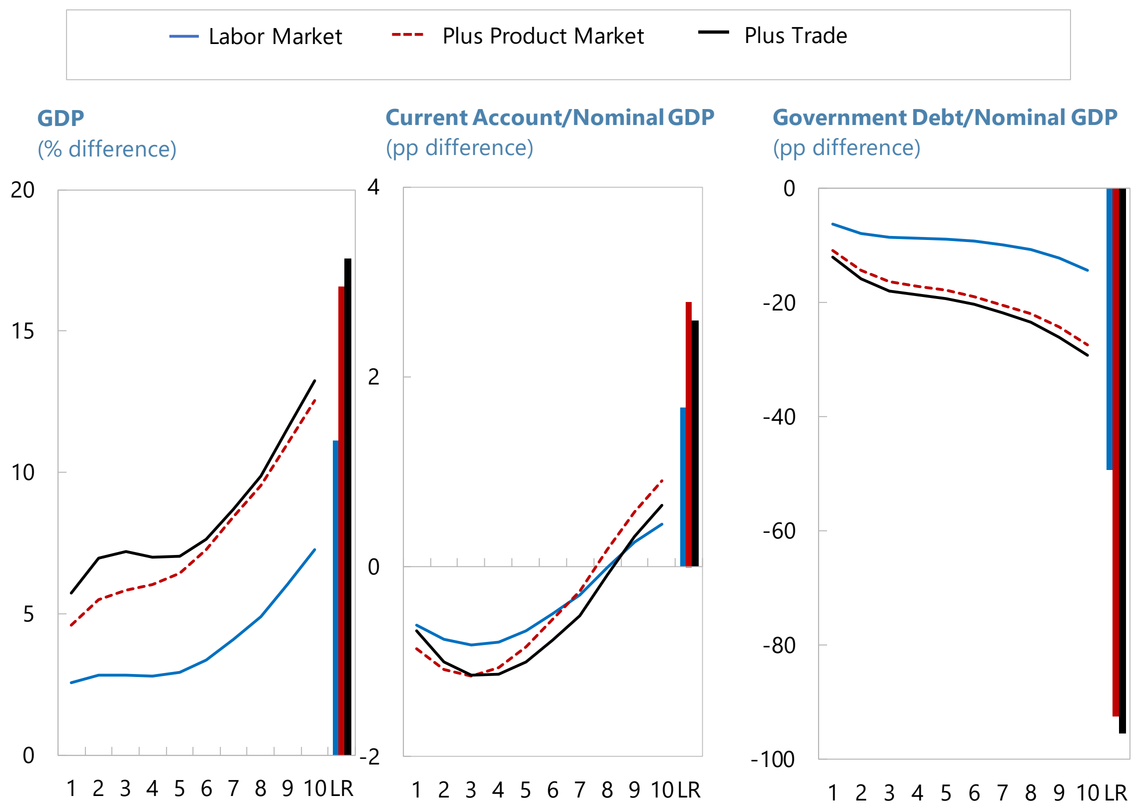
[1] Prepared by Mariana Colacelli (APD) and Emilio Fernandez Corugedo (RES), using the authors' IMF Working Paper 18/248 "Macroeconomic Effects of Japan's Demographics: Can Structural Reforms Reverse Them?"

[2] Reported results are relative to a projection where productivity and population grow at their recent pace.

Box 3. Demographics and Structural Reforms (concluded)

Reform scenario. Within the structural reform program proposed, labor market reforms are the main driver of estimated real GDP effects. The public debt-to-GDP ratio is estimated to decline due to the GDP increase, including from higher inflation, and also due to the assumed debt reduction from the reform-generated boost in tax revenues. A relative increase in investment drives the reduction in the external current account in the medium term (by over 1 percent of GDP), with the assumed fiscal consolidation dampening the size of the current account reduction. Simulation results shown represent an upper bound as they assume full credibility of reforms, where private sector agents have perfect foresight of the path of the reform program, which generates boosted anticipation effects, including higher inflation. Moreover, results shown assume that the labor market duality reform entails a gradual but full catch up in the productivity of non-regular workers to that of regular workers, providing an upper bound in terms of potential productivity gains (boosting real GDP by over 6 percent in the long run), while it does not assume a significant change in workers' bargaining power. Alternatively, assuming that only half of the productivity difference (between non-regular and regular workers) is closed, the labor market duality reform is estimated to deliver smaller real GDP gains (by about 3 percentage points in the long run).

Japan: Impact of Credible Reforms



Note: Reported effects are changes relative to the baseline reported in the previous figure. x-axis denotes years, LR= Long-run/steady-state (40 + years).
Source: GIMF simulations and authors' calculations.

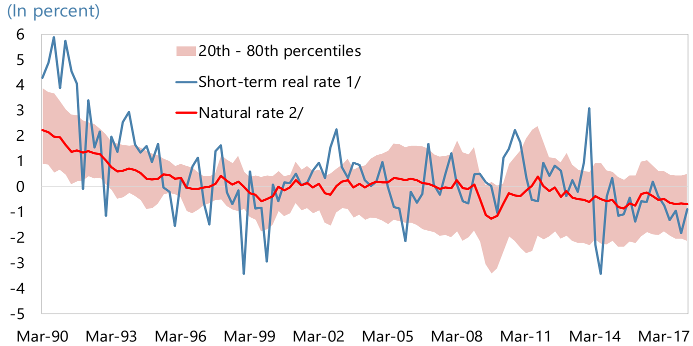
Box 4. Demographics and the Natural Rate of Interest in Japan[1]

The aging and shrinking population of Japan could lower the natural rate of interest and, together with low inflation expectations, challenge the Bank of Japan's efforts to reflate the economy.[2] The secular stagnation hypothesis posits that fundamental factors including demographics have played a significant role in driving down natural rates in major advanced economies in recent years, by reducing the labor force and slowing productivity growth. Given the effective lower bound and historically low natural rate of interest in Japan, it is difficult to widen the interest rate gap—the gap between the real interest rate and the natural rate—and achieve sufficient monetary easing if demographic change is placing significant downward pressures on the natural rate.

The semi-structural model developed by previous studies is extended, and a Bayesian approach is used to estimate the impact of demographic change on the natural rate of interest in Japan. The empirical framework is based on the work of Laubach and Williams (2003) and Pescatori and Turunen (2016).[3] By using the production function approach, the framework explicitly models the impact of demographic changes (particularly total and working-age population growth) on the natural rate through the potential growth channel. Other channels, for example, by increasing the dependency ratio and thereby lowering the savings rate, are not explicitly captured by this model. Having said that, including the dependency ratio as an exogenous variable in the model does not alter the results qualitatively. Moreover, we follow Pescatori and Turunen (2016) and use a Bayesian approach to estimate the model, which incorporates prior information on the output gap and includes other exogenous observables (e.g., excess global savings and risk premium) as potential determinants of the natural rate.

Japan: Natural Rate of Interest

(In percent)



Sources: Consensus Economics, Inc.; IMF World Economic Outlook; Haver Analytics; United Nations World Population Prospects; and IMF staff estimates.
1/ *Ex ante* short-term real interest rate (= uncollateralized overnight call rate - inflation expectations).
2/ Bayesian medians estimated from a semi-structural model (using priors from regressions and literature) and sampled using two chains of 250,000 draws generated with an MCMC algorithm. See the forthcoming WP "Demographics and the Natural Rate in Japan" for details.

The estimates suggest that demographic changes have contributed to the decline in Japan's natural rate, with the contribution increasing over time. We find that, since the Global Financial Crisis, the decline in working-age population growth has contributed about -0.3 percentage points (ppts) on average to the estimated negative natural rate—which averaged about -0.7 percent (Bayesian median) during this period. More importantly, such a negative impact is found to be increasing gradually over time, from less than -0.2 ppts in Q1 2010 to -0.4 percentage points in Q1 2018. Other shocks to trend potential growth (such as technology and other productivity shocks), excess global savings, and equity risk premium also played an important role in driving the natural rate.

The results also suggest that Japan's natural rate has likely fallen into negative territory, highlighting the need to implement structural reforms to boost potential growth and lift the natural rate. With the working-age population growth projected to decline by 2040, the negative demographic impact on the natural rate is likely to increase, which may further limit the role of monetary policy in reflating the economy. These findings highlight the importance of boosting potential growth by, for example, accelerating labor market and other structural reforms (including more active migration policies) to offset the increasingly adverse demographic impact and raise the natural rate in Japan.

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[1] Prepared by Fei Han (MCM), using the author's forthcoming IMF Working Paper "Demographics and Natural Rate of Interest in Japan."

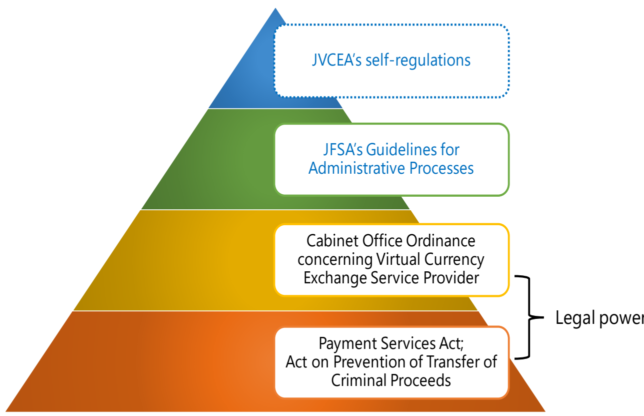
[2] The natural rate of interest is defined as the real interest rate consistent with output at its potential level and constant inflation.

[3] See Laubach and Williams (2003), "Measuring the Natural Rate of Interest," *Review of Economics and Statistics*, and Pescatori and Turunen (2016), "Lower for Longer: Neutral Rate in the U.S.," *IMF Economic Review*.

Box 5. Crypto-Asset Regulation in Japan[1]

Crypto-asset trading in Japan experienced explosive growth in 2017. Since becoming a legal form of payment in April 2017, trading of crypto-assets in both spot and derivatives markets has grown rapidly. However, financial institutions have been cautious about trading crypto-assets or partnering with crypto-asset exchanges (CAEs) due to extremely high price volatility and concerns over cyber risk.[2] The largely retail investor base has limited direct linkages with the rest of the financial system and hence immediate risks to financial stability appear low. Nonetheless, recent hacking incidents have led to large losses (about $580 million in total) for customers and the hacked exchanges, raising public concerns over cybersecurity and customer protection.

Japan became the first country to regulate CAEs in 2017 through a registration process. Regulation of CAEs in Japan consists of four layers, with the first two legally binding (see figure). The first layer consists of two Acts on payments and AML/CFT, which require CAEs to register with the Japanese Financial Services Agency (JFSA) and to conduct "know-your-customer" procedures. The second layer, created by a Cabinet Office Ordinance, sets forth the detailed rules for CAEs. The third layer is the JFSA's guidelines for the registration process, which specifies the scope, timeline, and requirements of registration. The last layer encompasses self-regulation as proposed by the Japan Virtual Currency Exchange Association (which consists of the 16 registered CAEs). Self-regulation focuses mainly on business appropriateness (including caps on margin trading), market fairness (including consumer protection), and sound business development.



Source: IMF staff.

JFSA has stepped up supervision of all CAEs and tightened regulation. After conducting on-site inspections in the aftermath of the January 2018 hacking incident at Coincheck, the JFSA issued business improvement orders to the exchanges with weak AML/CFT measures or customer protection systems to strengthen their internal control and governance. The JFSA has also strengthened the registration process by implementing more rigorous screening for risk-management procedures.

Managing reputational risk remains a challenge. CAEs are typically more vulnerable to cyber risk than banks. They typically lack the same level of cybersecurity as banks yet provide similar custody services (custody of crypto-assets) to customers. Given that Japan is taking a regulatory approach towards crypto-assets, cyber attacks may result in significant reputational risk for the JFSA in addition to losses for consumers and CAEs. To this end, the JFSA needs to further enhance its resources and expertise in cybersecurity. Clear communication with the public about the JFSA's role in the regulatory framework may help increase public awareness of the risks involved in crypto-assets and limit the reputational risk. The JFSA's commitment to promote global cooperation to form regulations on crypto-assets as the chair of the 2019 G20 should help leverage international experiences and contribute to multilateral responses to risk from crypto-assets.

[1] Prepared by Fei Han (MCM) and Todd Schneider (APD).

[2] Two exceptions where financial institutions are partnering with crypto-asset exchanges: i) the purchase of Coincheck (the CAE that was hacked in January 2018) by Monex—an online brokerage partly owned by a regional bank; and ii) the investment by Money Partners Group (one of Japan's largest FX brokerages) in Kraken (one of the world's longest-operating crypto-asset exchanges).

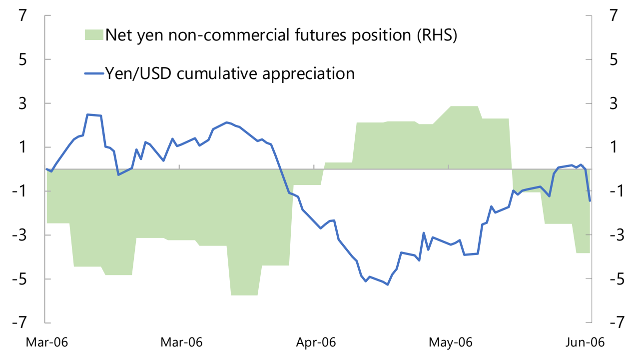
Box 6. Yen Appreciations, Safe Havens, and the Carry Trade[1,2]

Rising global interest rates, combined with BoJ's yield curve control, should weaken the yen and raise inflation. But widening interest rate differentials also encourage investors to take unhedged short positions in yen to earn the interest rate carry. An initial yen appreciation (triggered by global uncertainty and a flight to safety) could result in a sudden unwinding of these positions—amplifying the yen appreciation and undermining BoJ's efforts to reflate the economy.

Safe haven effects, interest rate differentials and carry trade reversals could drive sudden yen appreciations. Safe haven appreciations occur during heightened market uncertainty when investors move into assets that are perceived as "safe"—such as Japanese government bonds (JGBs). Carry trade is an investment strategy under which investors borrow (short) in a low-interest rate currency (e.g., yen) and invest (long) in a high-interest currency (e.g. the Australian dollar). Because these positions are typically leveraged and unhedged, any initial appreciation of the funding currency can generate a sharp unwinding of these positions, which in turn reinforces the appreciation.

Carry Trade Reversal and Yen Appreciation- 2006

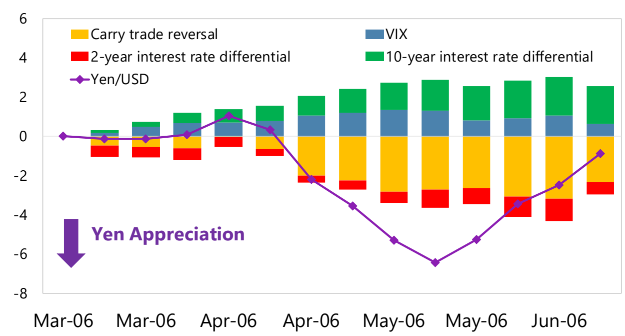
(In percent)



Source: Haver Analytics, Bloomberg L.P.

Contribution from Carry Trade Reversal to Exchange Rate Appreciation

(In cumulative percent change)



Source: Haver Analytics, U.S. CFTC, IMF staff estimates.

Rising global rates may increase the risk of a sudden and large yen appreciation. Empirical evidence shows that safe haven effects and carry trade reversals can trigger and amplify yen appreciations. For instance, in 2005 the U.S.-Japan interest rate differential rose sharply as the Fed tightened policy, leading to a weaker yen. However, it also spurred an expansion of carry trade (short) positions in the yen. By early 2006, global risk perception had risen and BoJ signaled an exit from quantitative easing. As investors unwound carry trade positions, the yen appreciated sharply (estimates suggest the carry trade reversal explains about 40 percent of the appreciation).

Risks are rising: As in 2006, the current rise in global rates could lead to a large carry trade position and raise the risk of a sudden and large yen appreciation. Empirical evidence also suggests that safe haven effects are likely to be significantly larger in times of heightened uncertainty. The current conjecture of widening U.S.-Japan interest rate differentials, and heightened global policy uncertainty (e.g., due to trade wars), appears particularly conducive exchange rate volatility due to the carry trade activities.

Stay the course: Notwithstanding a potentially higher risk of a sudden yen appreciation, the BoJ should maintain the current accommodative monetary policy stance and the zero-interest rate target on the benchmark 10-year JGB yield. However, the authorities should keep in mind the heightened risk for a sharp yen appreciation and closely monitor carry trade activities.

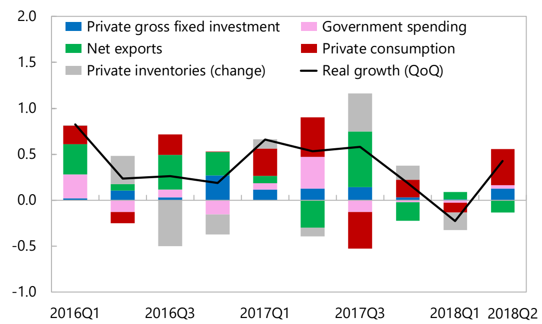
[1] Prepared by Fei Han (MCM) and Niklas Westelius (APD).

[2] The Box is based on the 2018 Japan Selected Issues Paper "What Drives Rapid Yen Appreciations?"

Figure 1. Japan: Recent Economic Developments

After a temporary soft patch early in the year, domestic demand recovered in the second quarter…

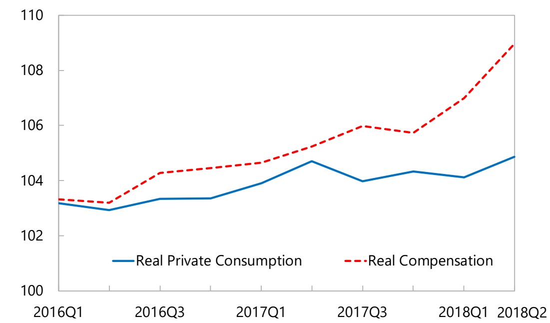
Contributions to Real GDP
(In percent QoQ, SA)



Source: Haver Analytics.

… with some uptick in consumption …

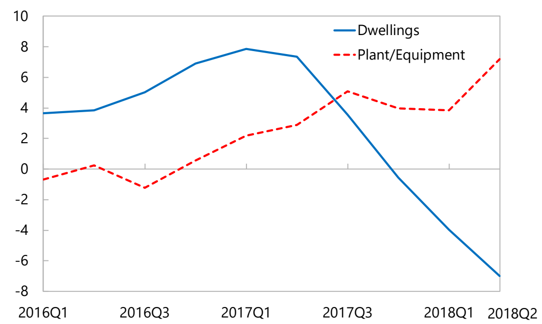
Real Compensation and Real Consumption
(2010=100)



Source: Haver Analytics.

…and private investment.

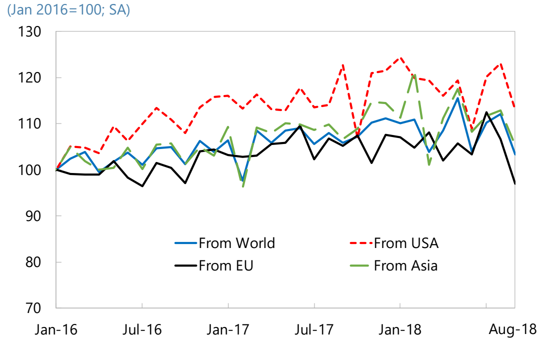
Private Investment
(In percent YoY)



Source: Haver Analytics.

Real imports have been on an upward trend …

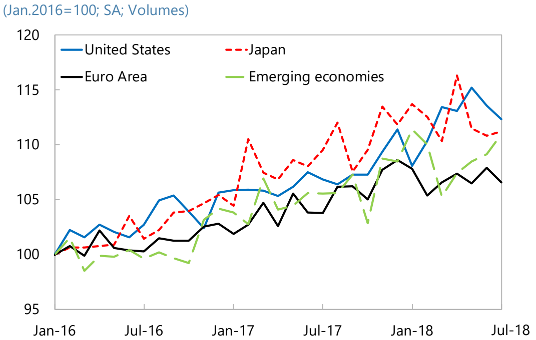
Real Imports by Origin
(Jan 2016=100; SA)



Source: Haver Analytics.

…and the rebound in global demand boosted Japan's exports in 2017 and early 2018.

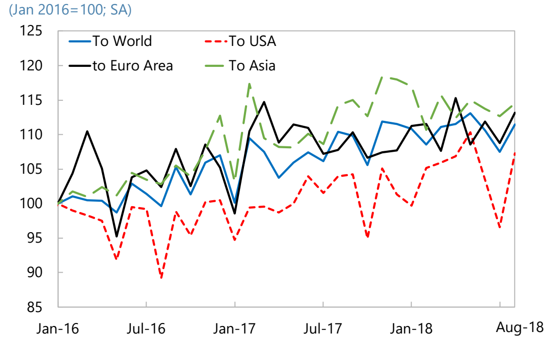
World Exports
(Jan.2016=100; SA; Volumes)



Source: CPB World Trade Monitor.

Japan's exports strengthened to most of its major trading partners in 2017 and early 2018.

Real Exports by Destination
(Jan 2016=100; SA)

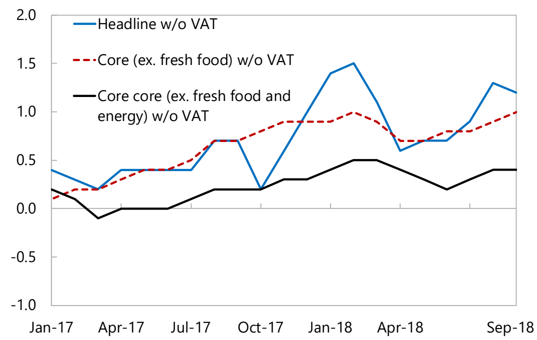


Source: Haver Analytics.

Figure 2. Japan: Inflation Developments

Inflation has risen in recent months, after declining in 2018Q1…

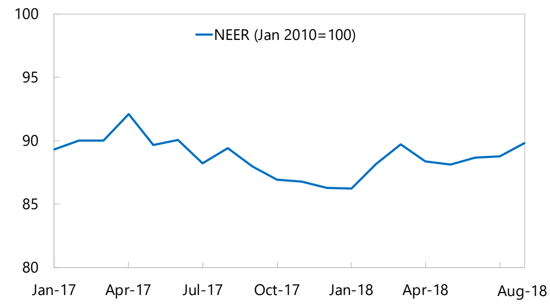
Inflation Indicators
(In percent YoY)



Sources: Haver Analytics; IMF staff estimates.

…and the Japanese yen (in NEER terms) has strengthened slightly in 2018.

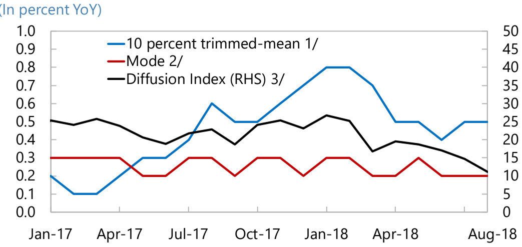
Nominal Effective Exchange Rate
(In percent YoY)



Sources: Haver analytics; and IMF staff calculations.

BoJ's measure of underlying inflation show a mixed picture.

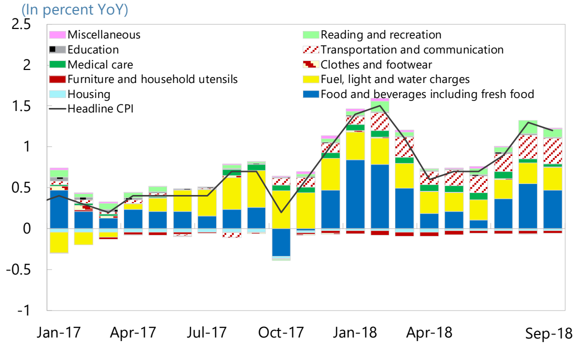
Selected BoJ Underlying Inflation Measures
(In percent YoY)



1/ Weighted averages of yoy price changes in individual CPI items, with items falling in the upper and lower 10 percent tails (by weight) trimmed.
2/ Inflation rate with highest density in the distribution.
3/ Share of items in the CPI (less fresh food) whose price has increased from a year earlier minus share of items whose price has declined.
Source: Haver Analytics.

Energy and food prices made the largest contribution to headline inflation.

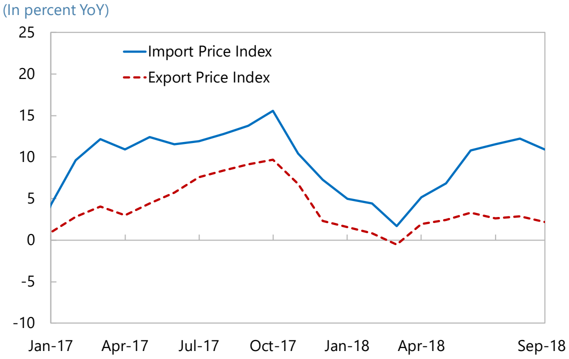
Headline CPI Inflation Contribution
(In percent YoY)



Sources: Haver Analytics; and IMF staff calculations.

Import prices have increased more than export prices, reflecting the increase in oil prices.

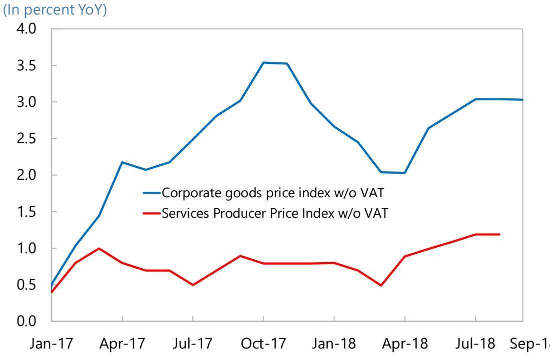
Export and Import Price Indices
(In percent YoY)



Source: Haver Analytics.

Both corporate goods price inflation and services producer price inflation edged up in 2018Q2.

Inflation Indicators
(In percent YoY)



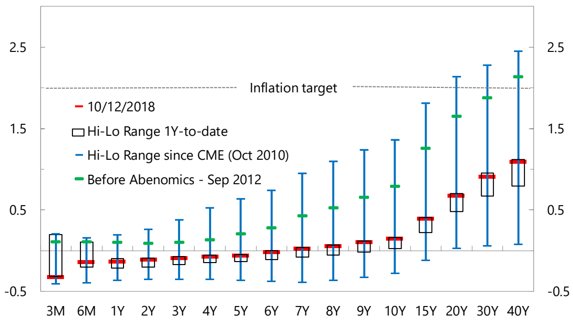
Source: Haver Analytics.

Figure 3. Japan: Monetary Policy Transmission

The 10-year JGB yield is close to zero, and other rates remain low…

JGB Yield Curve and Range[1/]

(In percent)



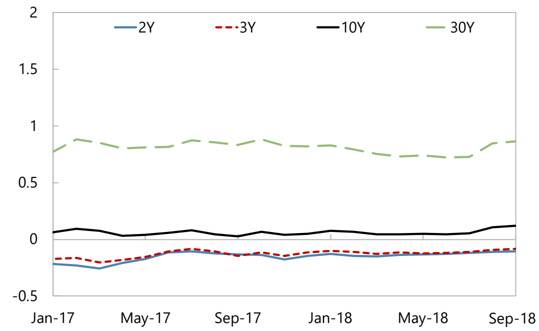
Source: Bloomberg L.P.

1/ Range indicates max & min yields per maturity per indicated period.

…and term spreads are largely unchanged since 2017.

Japanese Government Bond Yields

(In percent)

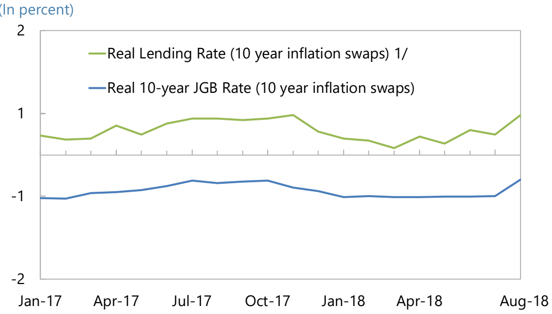


Source: Bloomberg L.P.

Real interest rates remain depressed.

Japan: Real Interest Rate

(In percent)



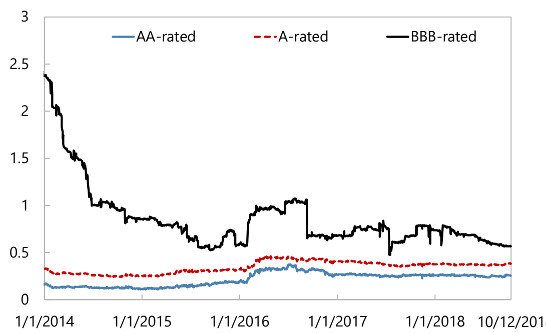
1/ Based on average long-term bank-loan rate.

Sources: CEIC; and Haver Analytics.

Corporate bond spreads are at historical lows…

Corporate-Government Bonds Spreads (5Y)

(In percent)

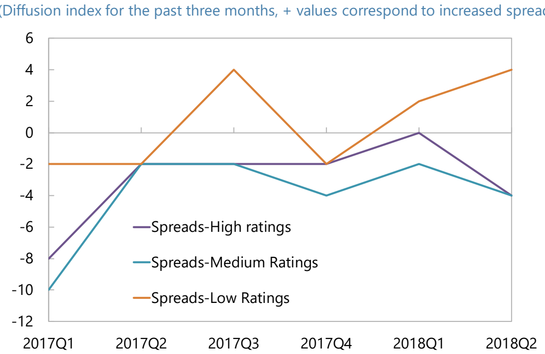


Source: Bloomberg L.P.

…and spreads on bank loans to low-rated borrowers have increased recently…

Senior Loan Officer Survey Opinion Survey-Spreads of loan rates

(Diffusion index for the past three months, + values correspond to increased spreads)

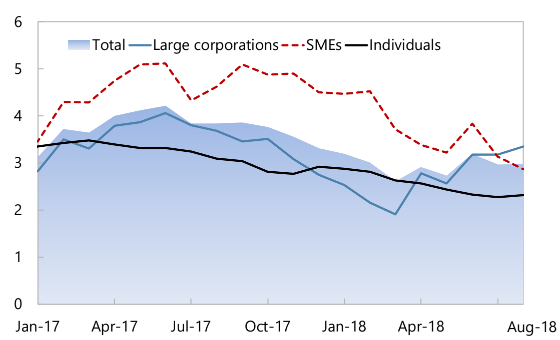


Sources: Bank of Japan, Senior Loan Officer Opinion Survey

… while growth in bank lending has weakened

Growth in Bank Lending

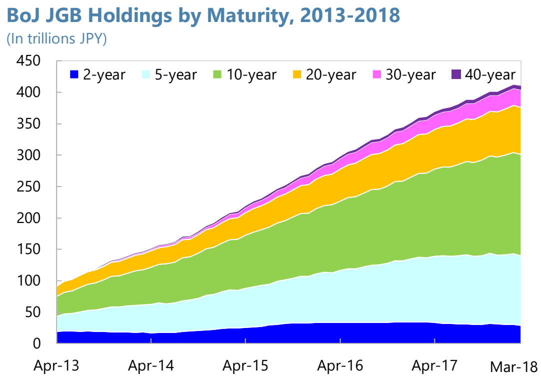
(In percent YoY)



Source: CEIC.

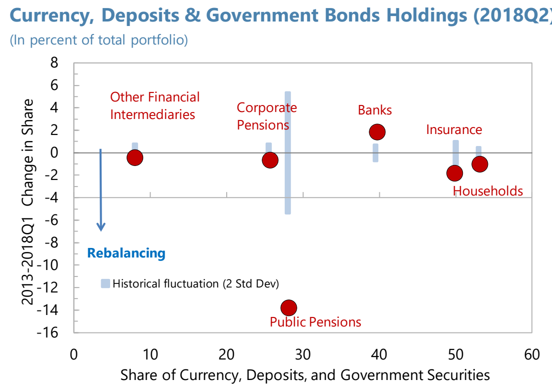
Figure 3. Japan: Monetary Policy Transmission (concluded)

Bank of Japan's balance sheet continues to expand, with a larger share of long-term maturity JGBs.



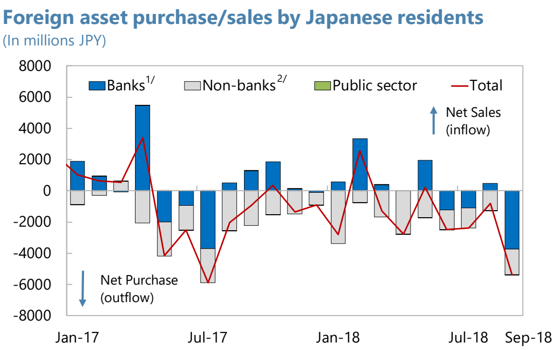
Source: Haver Analytics.

Portfolio rebalancing is progressing, except for banks.



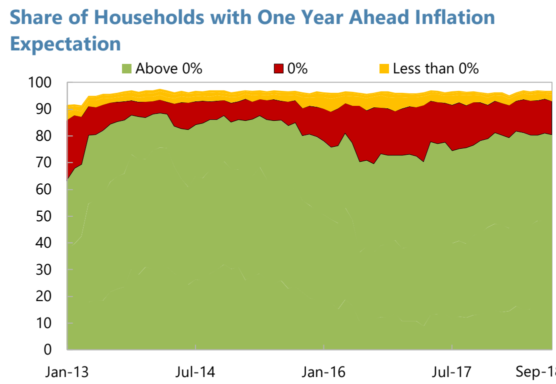
Sources: Bank of Japan Flow of Funds, Haver, and IMF Staff Estimates.

Net portfolio outflows by banks turned into inflows since 2017Q4, offsetting outflows by non-banks.



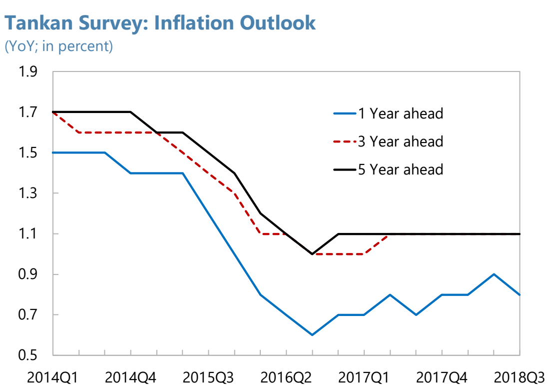
Sources: CEIC database; and IMF staff calculations.
1/ Banking accounts of banks and trust banks.
2/ Includes trust accounts of banks and trust banks.

Inflation expectations of households have increased gradually...



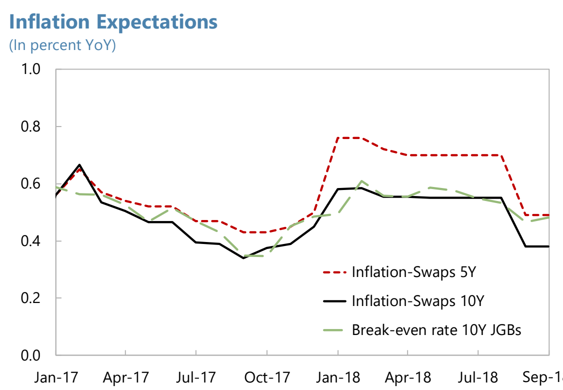
Source: Cabinet Office.

...while business expectations remained broadly flat...



Source: Haver Analytics.

...and market-based inflation expectations indicators stabilized in recent months after a pick-up in late 2017.

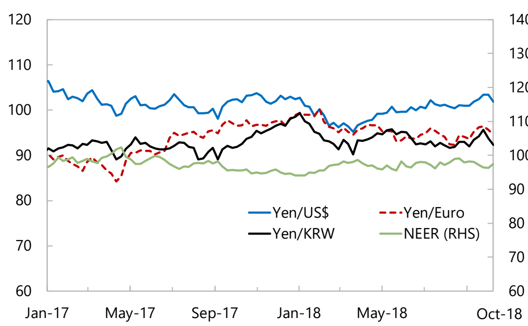


Sources: Bloomberg L.P.; and IMF staff estimates.

Figure 4. Japan: Financial Market Developments

The yen vis-à-vis the U.S. dollar appreciated in the first half of 2018, but has since weakened...

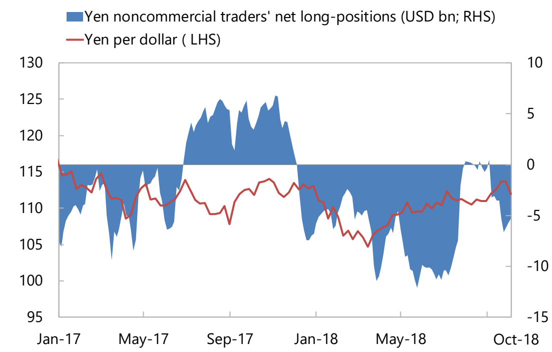
Selected Exchange Rates
(2005=100)



Source: Bloomberg L.P.

...as net short-yen positions narrowed in July 2018 but have recently re-emerged.

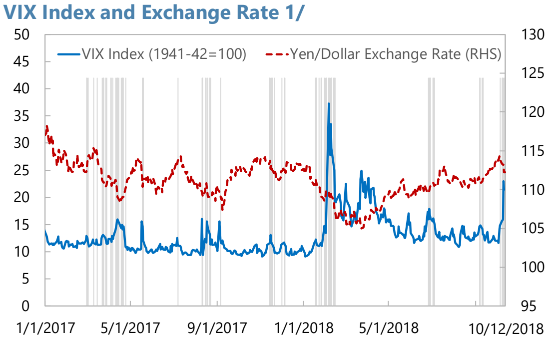
Chicago Mercantile Exchange Yen Position



Source: Bloomberg L.P.

Market uncertainty spiked recently...

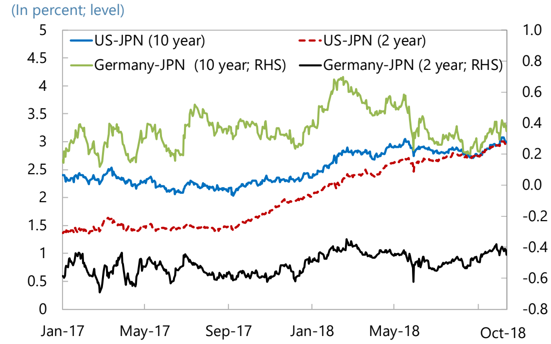
VIX Index and Exchange Rate 1/



Source: Bloomberg L.P.
1/ Shaded areas refer to risk-off episodes with the VIX one standard deviation above the 60-day moving average.

...and U.S.-Japan interest rate differentials have increased gradually since Q3 2017 amid U.S. monetary policy normalization.

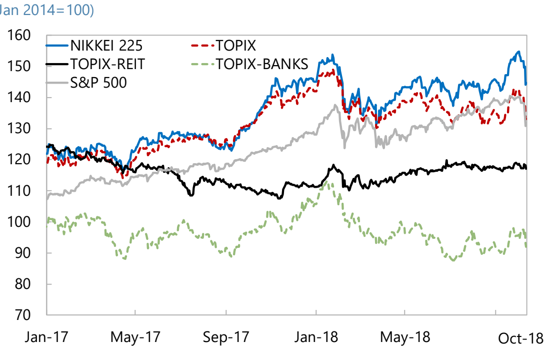
Interest Differential
(In percent; level)



Source: Bloomberg L.P.

Equity indices have declined since the beginning of 2018, following a long rally dating back to 2016.

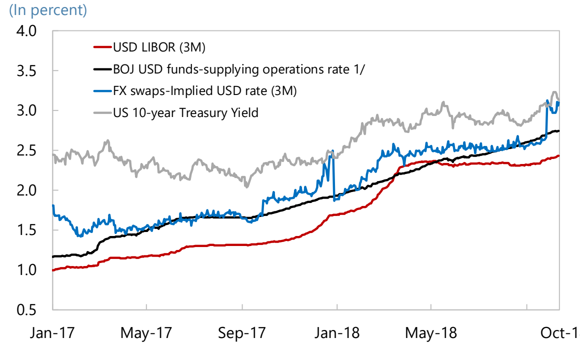
Equity Markets
(Jan 2014=100)



Source: Bloomberg L.P.

U.S. dollar funding costs have increased recently.

USD Funding Cost in Japan
(In percent)



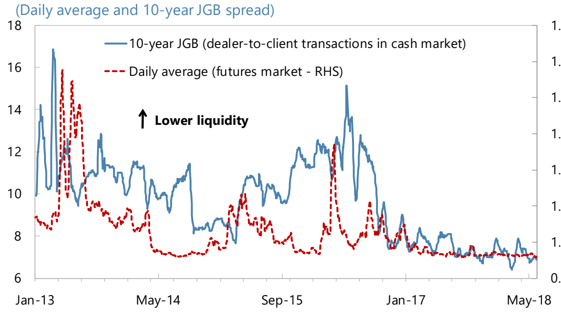
Sources: Bloomberg; and IMF staff estimates.
1/ OIS rate + 50 bps.

Figure 5. Japanese Government Bond (JGB) Market Liquidity

Bid-ask spreads in JGB futures and cash markets have been on a declining trend since the introduction of YCC.

Bid-Ask Spreads 1/

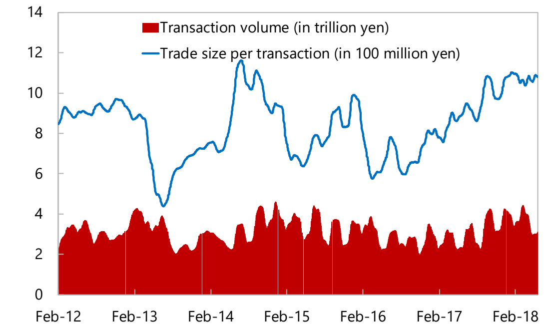
(Daily average and 10-year JGB spread)



Source: Nikkei NEEDS.
1/ "Daily average" is the average of the bid-ask spread data with a 1-minute frequency within each business day.

Transaction volume and average trade size in JGB futures market have increased…

Transactions Volume and Trade Size 1/

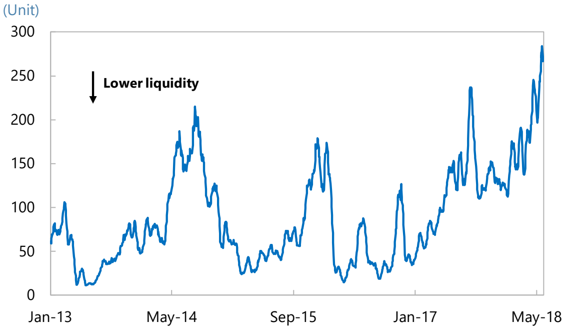


Source: Nikkei NEEDs.
1/ 30-day backward moving average.

…and volume of limited orders at the best-ask price in the futures market also continued to improve.

Volume of Limit Orders at the Best-ask Price 1/

(Unit)

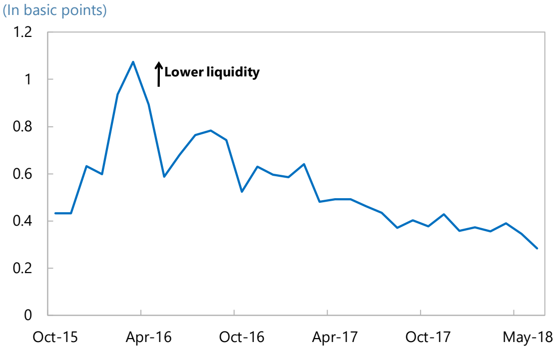


Source: Nikkei NEEDS.
1/ 10-day backward moving average

Best-worst quote spreads in JGB cash market have been on a declining trend, implying an increase in liquidity.

Best-worst Quote Spreads

(In basic points)

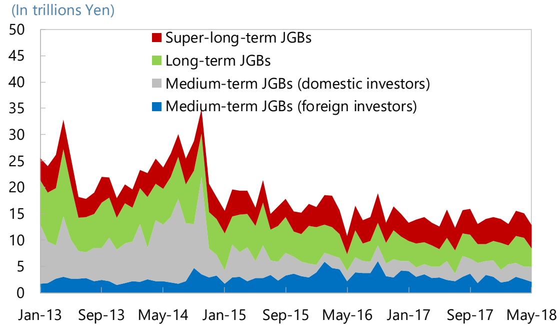


Sources: Yensai.com

However, transaction volume of inter-dealer transactions in the cash market continued to decline…

Inter-dealer Monthly Transaction Volume 1/

(In trillions Yen)

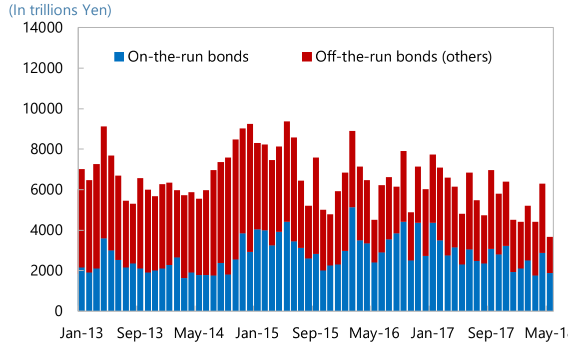


Source: Japan Securities Dealers Association; Ministry of Finance.
1/ Treasury Discount Bills, etc. are excluded from transaction volume.

…and dealer-to-client transaction volume declined to the lowest level since 2013.

Dealer-to-clieant Monthly Transaction Volume

(In trillions Yen)

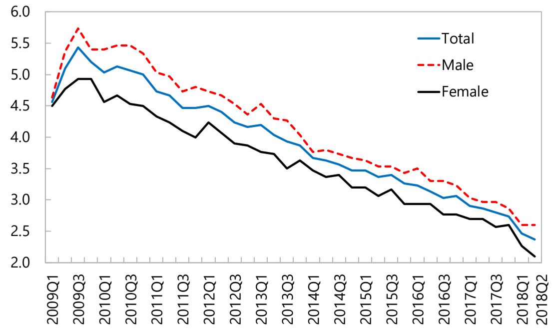


Source: Japan Securities Dealers Association; Ministry of Finance.

Figure 6. Japan: Labor Market and Wage Developments

Unemployment rate continues to decline…

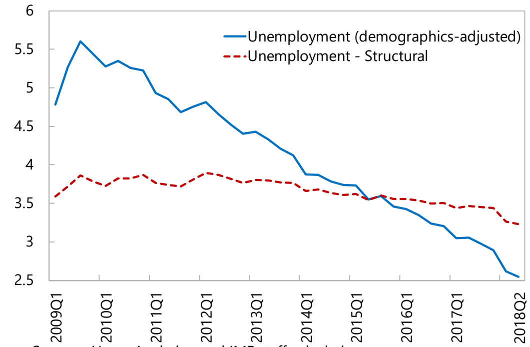
Unemployment Rate
(In percent of labor force, SA)



Sources: Haver Analytics, Ministry of Internal Affairs and Communications.

…and the unemployment gap has closed.

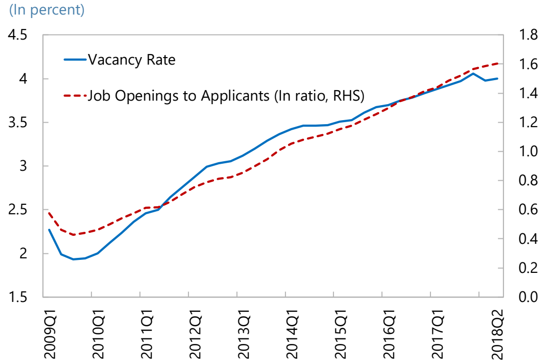
Unemployment Rate and Gap
(In percent)



Sources: Haver Analytics; and IMF staff calculations.

With the ratio of job openings to applicants at historically-high levels…

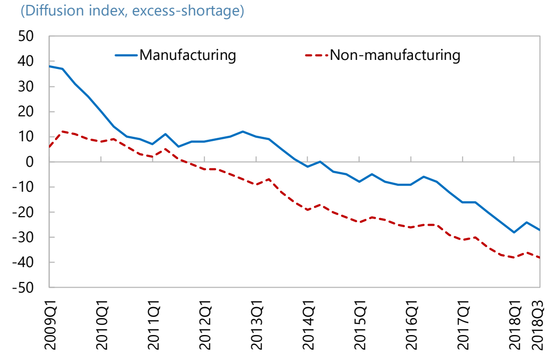
Vacancy Rate and Ratio of Job Openings to Applicants
(In percent)



Source: Haver Analytics.

…employment conditions have tightened, especially in the non-manufacturing sector.

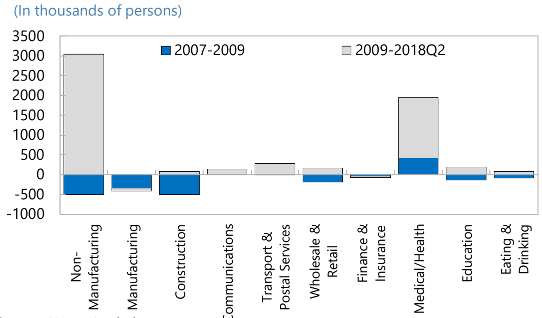
Tankan Enterprise Survey: Employment Conditions
(Diffusion index, excess-shortage)



Source: Tankan Survey, Bank of Japan.

The increase in full-time employment since the 2009 crisis has been concentrated in non-manufacturing sectors…

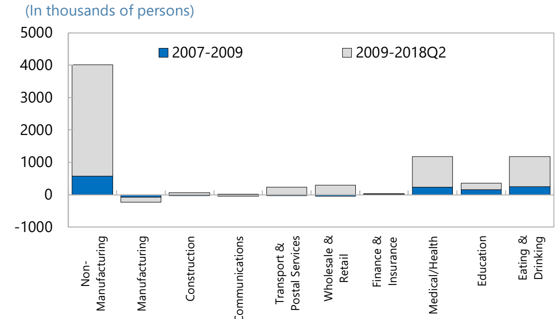
Change in Full-time Employees by Sector [1/]
(In thousands of persons)



Source: Haver Analytics.
1/ Non-manufacturing sector includes all the other shown sectors except for manufacturing sector.

…while the increase in part-time employees has remained dominant.

Change in Part-time Employees by Sector [1/]
(In thousands of persons)

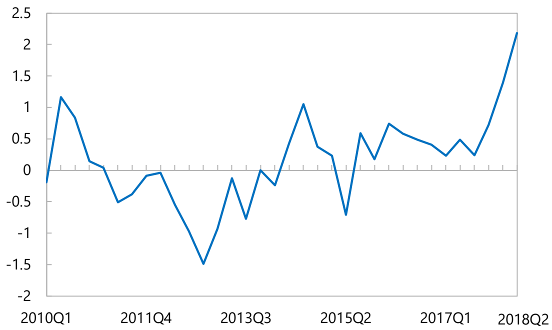


Source: Haver Analytics.
1/ Non-manufacturing sector includes all the other shown sectors except for manufacturing sector.

Figure 6. Japan: Labor Market and Wage Developments (concluded)

Scheduled earnings per employee picked up recently…

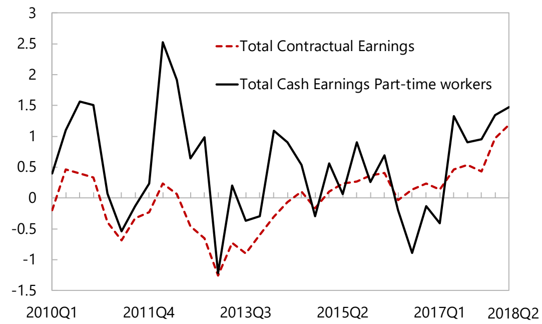
Total Cash Earnings
(Per employee; in percent YoY)



Sources: Haver Analytics; and IMF Staff calculations.

…as did wages for part-time workers.

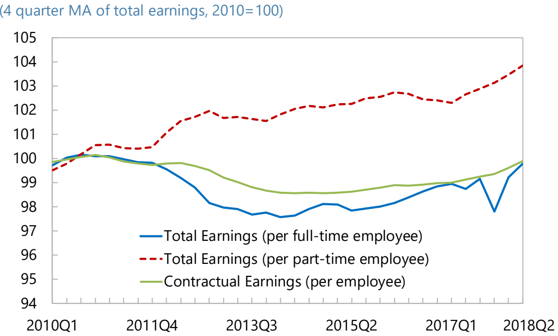
Different Measures of Wage Growth
(per employee; YoY; in percent)



Sources: Haver Analytics; and IMF Staff calculations.

Earnings for full-time workers edged up recently, while earnings for part-time workers are also on an upward trend.

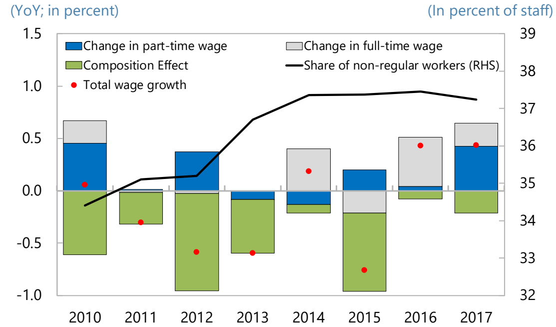
Different Measures of Earnings
(4 quarter MA of total earnings, 2010=100)



Sources: Haver Analytics; and IMF staff calculations.

Part-time worker wage growth contributed to overall wage growth in 2017.

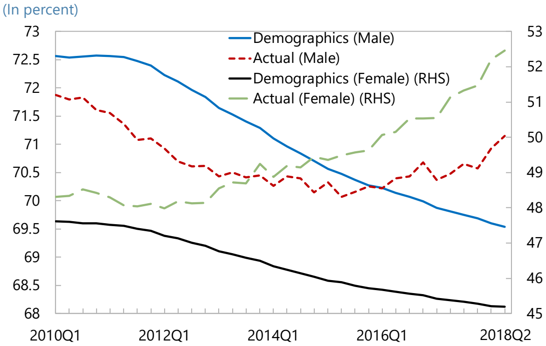
Composition of Wage Growth by Worker Type 1/
(YoY; in percent) (In percent of staff)



Sources: Haver Analytics; and IMF staff estimates.
1/ Yearly Average.

Amid a declining population, female labor force participation has picked up in recent years…

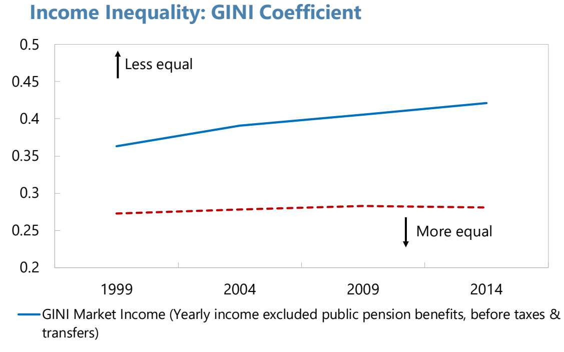
Labor Force Participation Rate
(In percent)



Source: Ministry of Internal Affairs and Communications.

… while market income inequality has been increasing.

Income Inequality: GINI Coefficient

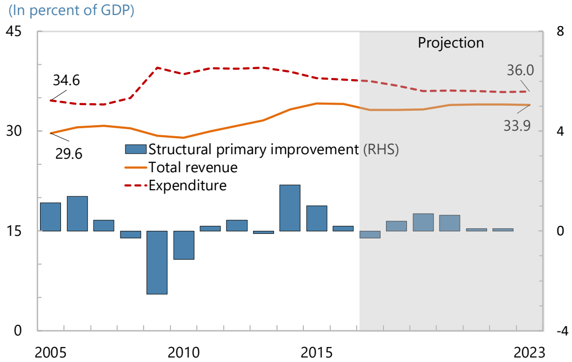


Source: National Survey of Family Income and Expenditure (2014).

Figure 7. Japan: Fiscal Developments and Sustainability

The fiscal balance, while remaining in deficit, is projected to improve due to the 2019 consumption tax increase…

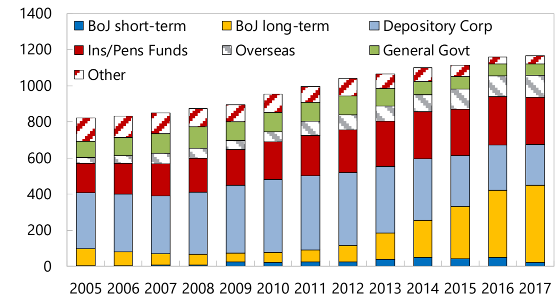
General Government Fiscal Balance
(In percent of GDP)



Sources: IMF, *World Economic Outlook*; and IMF staff estimates.

…and BOJ's JGB holdings and domestic investors' home bias help maintain the current favorable funding environment.

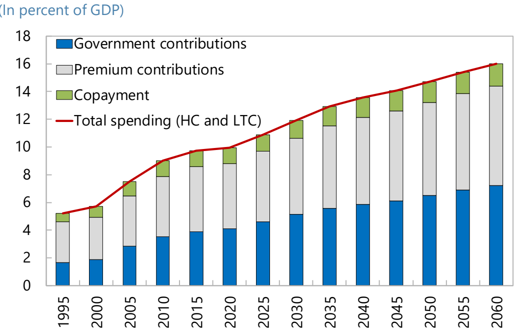
Public Debt Financing
(In trillion yen; end of period)



Source: Flow of Funds (Bank of Japan)
Note: Includes both central and local governments' debt (including FLIP bonds)

In the coming years, age-related costs will increase.

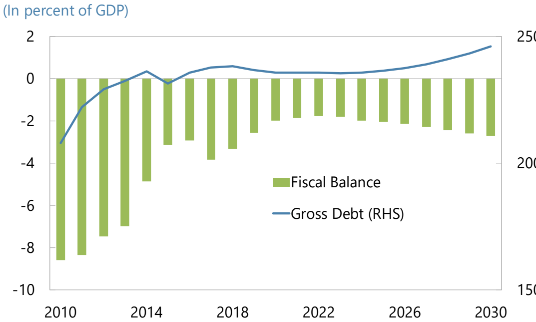
Financing of Health Care and Long-Term Care
(In percent of GDP)



Sources: Ministry of Health, Labor, and Welfare; IMF World Economic Outlook database; and IMF staff estimates.

Public debt is unsustainable under current policies, and will begin to rise along with age-related costs.

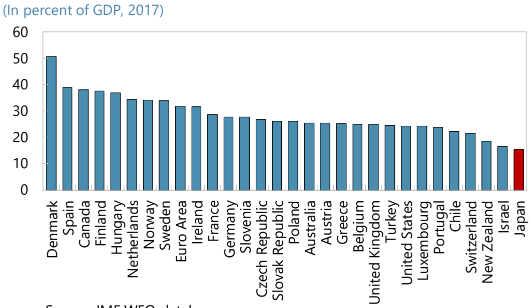
Japan: Gross Public Debt and Fiscal Balance [1/]
(In percent of GDP)



Sources: Cabinet Office; and IMF staff estimates and projections.
1/ Gross debt of the general government including the social security fund. Consumption tax rate increase to 10 percent in October 2019 is assumed.

Relative to peers, Japan's share of non-social security spending has remained low…

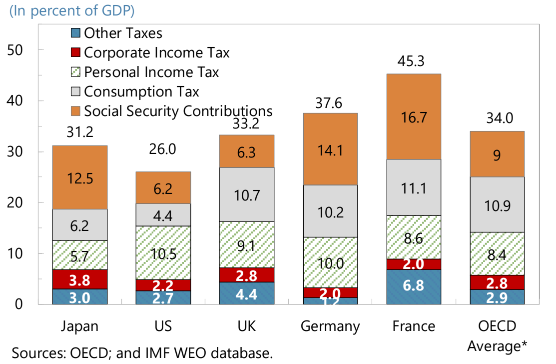
OECD: Spending excluding Social Security and Interest [1/ 2/]
(In percent of GDP, 2017)



Source: IMF WEO database.
1/ OECD countries with missing data (e.g., Italy) are not reported here.
2/ General government basis.

…while there is room for increasing tax revenue.

General Government Tax and Social Security Revenue, 2016
(In percent of GDP)



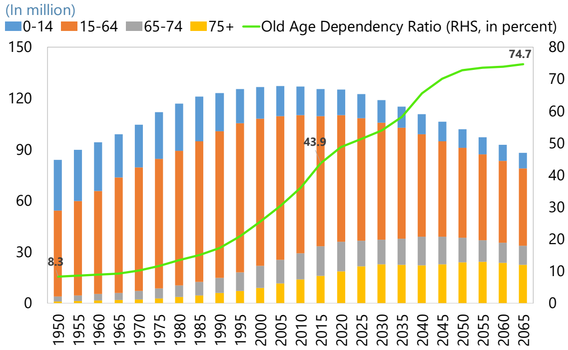
Sources: OECD; and IMF WEO database.
*OECD Average as of 2015

Figure 8. Japan: Demographic Headwinds, Gender and Inequality

Over the next 40 years, the population will shrink by over 25 percent…

Japan: Population and Composition

(In million)

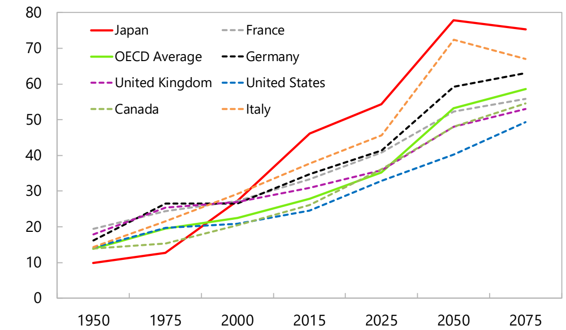


Source: Cabinet Office, White Paper on Aging (2017).

…and the old-age dependency ratio will sharply increase.

G7: Old-Age Dependency Ratio

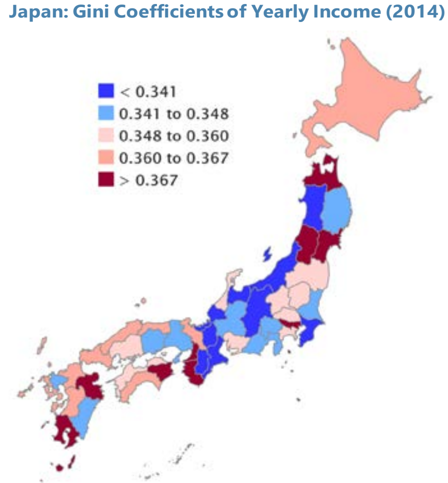
(In percent)



Source: OECD; United Nations, *World Population Prospects – 2017 Revision*.

Market income inequality has been increasing, with higher inequality in poorer and older prefectures.

Japan: Gini Coefficients of Yearly Income (2014)

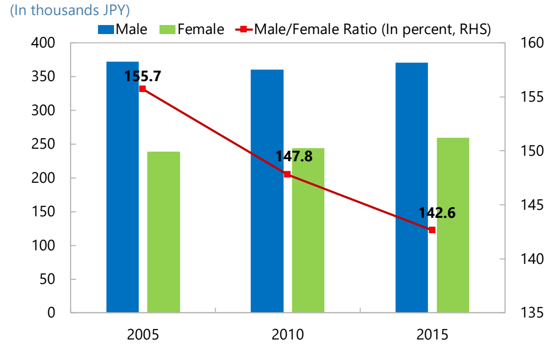


Source: National Survey of Family Income and Expenditure (2014).

Gender inequality is significant, but the male-female wage differential has been decreasing.

Monthly Wages (Male vs. Female)

(In thousands JPY)

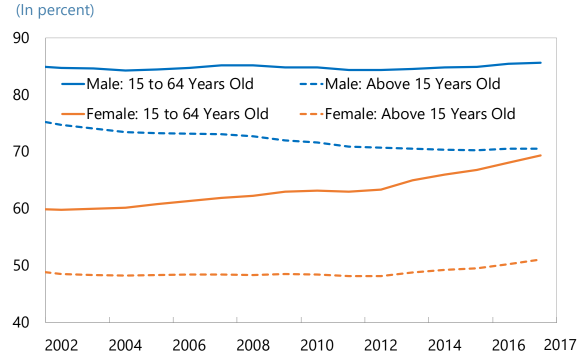


Source: Social Indicators by Prefecture (2017).

Women's economic participation has increased…

Labor Participation Ratios by Gender

(In percent)

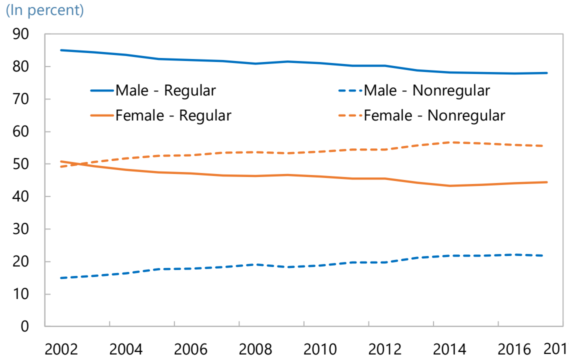


Source: Ministry of Internal Affairs and Communications.

…though most women are employed as non-regular or part-time workers, contributing to higher inequality.

Employment by Format and Gender

(In percent)



Source: Ministry of Internal Affairs and Communications.

Table 1. Japan: Selected Economic Indicators, 2012–19

Nominal GDP: US$ 4,873 Billion (2017) GDP per capita: US$ 38,444 (2017)
Population: 127 Million (2017) Quota: SDR 30.8 billion (2017)

	2012	2013	2014	2015	2016	2017	2018	2019
							Proj.	
				(In percent change)				
Growth 1/								
Real GDP	1.5	2.0	0.4	1.4	1.0	1.7	1.1	0.9
Domestic demand	2.3	2.4	0.4	1.0	0.4	1.2	0.9	1.1
Private consumption	2.0	2.4	-0.9	0.0	0.1	1.0	0.6	0.8
Business investment	4.1	3.7	5.4	3.4	0.6	2.9	4.7	3.4
Residential investment	2.5	8.0	-4.3	-1.0	5.7	2.7	-6.7	0.9
Government consumption	1.7	1.5	0.5	1.5	1.3	0.4	0.5	1.1
Public investment	2.7	6.7	0.7	-1.7	-0.1	1.2	-1.8	-5.9
Stockbuilding 2/	0.0	-0.4	0.1	0.3	-0.2	-0.1	0.1	0.0
Net exports 2/	-0.8	-0.4	0.0	0.3	0.6	0.5	0.1	0.0
Exports of goods and services 3/	-0.1	0.8	9.3	2.9	1.7	6.7	3.9	2.1
Imports of goods and services 3/	5.4	3.3	8.3	0.8	-1.6	3.4	3.2	2.3
Output Gap	-3.7	-2.2	-2.6	-2.0	-1.8	-0.7	-0.3	0.1
				(In annual average)				
Inflation								
CPI 4/	-0.1	0.3	2.8	0.8	-0.1	0.5	1.2	1.3
CPI excluding VAT	-0.1	0.3	1.2	0.3	-0.1	0.5	1.2	1.1
Core Core CPI excluding VAT 5/	-0.4	-0.2	0.7	0.9	0.6	0.1	…	…
GDP deflator	-0.8	-0.3	1.7	2.1	0.3	-0.2	0.8	1.5
Unemployment rate	4.3	4.0	3.6	3.4	3.1	2.9	2.9	2.9
				(In percent of GDP)				
Government								
General government								
Revenue	30.8	31.6	33.3	34.2	34.1	33.2	33.2	33.3
Expenditure	39.4	39.5	38.9	38.0	37.8	37.5	36.9	36.0
Overall Balance	-8.6	-7.9	-5.6	-3.8	-3.7	-4.3	-3.7	-2.8
Primary balance	-7.5	-7.0	-4.9	-3.2	-2.9	-3.8	-3.3	-2.6
Structural primary balance	-6.3	-6.4	-4.6	-3.6	-3.4	-3.7	-3.3	-2.6
Public debt, gross	229.0	232.5	236.1	231.3	235.6	237.6	238.2	236.6
				(In percent change, end-period)				
Macro-financial								
Base money	10.7	45.8	36.7	29.1	22.8	9.7	10.6	9.3
Broad money	2.2	3.5	2.9	3.0	3.9	3.5	3.6	3.1
Credit to the private sector	2.2	4.1	2.0	1.9	2.4	4.4	3.5	3.0
Non-financial corporate debt in percent of GDP	143.1	142.0	143.0	137.9	136.9	139.7	146.7	147.0
Household debt in percent of disposable income	98.3	100.2	100.8	100.5	100.8	101.7	101.1	101.0
				(In percent)				
Interest rate								
Overnight call rate, uncollateralized (end-period)	0.1	0.1	0.1	0.0	-0.1	-0.1	…	…
Three-month CD rate (annual average)	0.3	0.2	0.2	0.2	0.1	0.0	…	…
Official discount rate (end-period)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
10-year JGB yield (e.o.p.)	0.9	0.7	0.6	0.4	0.0	0.1	0.1	0.2
				(In billions of USD)				
Balance of payments								
Current account balance	59.7	45.9	36.8	136.4	194.9	196.1	183.7	196.2
Percent of GDP	1.0	0.9	0.8	3.1	3.9	4.0	3.6	3.8
Trade balance	-53.9	-90.0	-99.9	-7.4	51.4	44.5	34.7	43.0
Percent of GDP	-0.9	-1.7	-2.1	-0.2	1.0	0.9	0.7	0.8
Exports of goods, f.o.b.	776.0	695.0	699.7	622.1	636.3	689.2	750.0	766.6
Imports of goods, f.o.b.	829.9	784.9	799.7	629.5	585.0	644.8	715.3	723.7
Energy imports	272.2	257.4	241.8	133.8	94.9	117.8	153.5	150.9
				(In percent of GDP)				
FDI, net	1.9	2.8	2.4	3.0	2.7	3.1	2.6	2.8
Portfolio Investment	0.5	-5.4	-0.9	3.0	5.6	-1.1	-0.9	-0.8
				(In billions of USD)				
Change in reserves	-37.9	38.7	8.5	5.1	-5.7	23.6	10.5	11.0
Total reserves minus gold (in billions of US$)	1227.2	1237.3	1231.0	1207.1	1188.4	1232.4	…	…
				(In annual average)				
Exchange rates								
Yen/dollar rate	79.8	97.6	105.9	121.0	108.8	112.2	109.8	109.3
Yen/euro rate	102.6	129.6	140.8	134.3	120.4	126.7	130.3	127.9
Real effective exchange rate (ULC-based, 2010=100)	106.5	86.3	78.2	75.3	85.1	78.3	…	…
Real effective exchange rate (CPI-based, 2010=100)	100.6	80.4	75.2	70.2	79.6	75.6	…	…
				(In percent)				
Demographic Indicators								
Population Growth	-0.2	-0.2	-0.2	-0.1	0.0	-0.2	-0.2	-0.3
Old-age dependency	37.8	39.8	41.8	43.5	44.8	46.0	46.9	47.8

Sources: IMF, Competitiveness Indicators System; OECD, and IMF staff estimates and projections as of October 2018 World Economic Outlook.
1/ Annual growth rates and contributions are calculated from seasonally adjusted data.
2/ Contribution to GDP growth.
3/ 2014 export and import growth rates are inflated because of changes in the compilation of BoP statistics (BPM6) implying a break in the series relative to
4/ Including the effects of consumption tax increases in 2014, 2015, and 2019.
5/ Bank of Japan Measures of Underlying Inflation; excluding fresh food & energy.

Table 2. Japan: Monetary Authority Accounts and Monetary Survey, 2012–19

	2012	2013	2014	2015	2016	2017	2018	2019
							Proj.	
				(In trillions of JPY)				
Monetary authority								
Net foreign assets	6.3	5.0	3.9	2.3	-3.9	-12.4	-11.0	-10.7
NDA	132.2	196.9	272.0	353.9	441.3	492.4	541.6	590.8
Net domestic credit	143.5	210.8	291.3	374.6	467.1	521.3	570.5	619.7
Net credit to non-financial public sector	96.1	159.4	222.4	289.1	366.0	397.2	437.2	477.2
Credit to the private sector	8.5	6.2	6.7	6.7	6.4	6.5	6.7	6.9
Net credit to financial corporations	38.9	45.2	62.2	78.8	94.7	117.5	126.5	135.5
Other items net	-11.3	-13.9	-19.3	-20.8	-25.8	-28.9	-28.9	-28.9
Monetary base	138.5	201.8	275.9	356.1	437.4	480.0	530.7	580.1
Monetary survey (depository corporations)								
NFA	101.5	113.9	105.6	97.6	94.4	100.8	85.8	90.6
NDA	1,050.2	1,080.4	1,125.1	1,171.2	1,227.7	1,267.8	1,313.5	1,351.8
Net domestic credit	1,124.8	1,179.4	1,228.2	1,257.9	1,307.5	1,358.7	1,409.3	1,452.7
Net credit to nonfinancial public sector	482.4	529.0	566.0	587.4	633.2	638.1	668.1	693.1
Credit to the private sector	516.5	527.0	537.6	547.8	560.9	585.8	606.4	624.8
Net credit to other financial institutions	125.9	123.4	124.6	122.8	113.4	134.8	134.8	134.8
Other items net	-74.6	-99.0	-103.0	-86.7	-79.9	-90.9	-95.9	-100.9
Broad money	1,144.9	1,184.7	1,219.6	1,256.1	1,305.1	1,352.1	1,399.3	1,442.4
Currency in circulation	83.1	85.3	88.2	93.6	97.3	101.9	105.2	108.7
Current deposits	477.7	504.5	530.0	553.5	602.6	650.7	688.5	722.2
Other deposits	585.5	594.9	601.4	609.1	605.1	599.5	605.5	611.5
				(In percent of GDP)				
Net credit to other financial institutions	25.4	24.5	24.3	23.1	21.1	24.7	24.2	23.6
Credit to the private sector from depository corporations	104.4	104.7	104.6	103.0	104.2	107.2	108.9	109.5
Corporate debt (includes loans and securities other than shares)	143.1	142.0	143.0	137.9	136.9	139.7	146.7	147.0
Corporate debt (includes loans and securities other than shares), trillions of JPY	708.2	714.7	734.9	733.8	737.4	763.8	817.3	838.6
Household debt in percent of disposable income	98.3	100.2	100.8	100.5	100.8	101.7	101.1	101.0
				(Y-o-Y growth in percent)				
Base money	19.3	60.3	36.7	29.1	22.8	9.7	10.6	9.3
Broad money	2.7	4.1	2.9	3.0	3.9	3.6	3.5	3.1
Credit to the private sector from depository corporations	3.1	2.0	2.0	1.9	2.4	4.4	3.5	3.0
Corporate loans by domestically licenced banks	1.0	2.3	3.1	2.6	2.8	2.6	2.8	2.6
Housing loans	2.1	2.3	1.8	1.9	2.7	2.0	1.9	2.0
Credit to the private sector from all financial institutions	2.6	5.0	-6.1	3.1	1.0	5.1	3.5	3.0
Memorandum items:								
Velocity of broad money	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Money multiplier (broad money)	8.3	5.9	4.4	3.5	3.0	2.8	2.6	2.5
Loan-to-deposit ratio (percent) 1/	60.4	59.1	58.1	57.6	55.8	57.6	57.3	57.0

Sources: Bank of Japan; Haver, and IMF staff estimations and projections.

1/ Defined as the ratio of credits to the private sector and net credit to other financial instituions to customer deposits.

Table 3. Japan: External Sector Summary, 2012–19

	2012	2013	2014	2015	2016	2017	2018	2019
							Proj.	
Balance of payments				*(In billions of USD)*				
Current account balance	59.7	45.9	36.8	136.4	194.9	196.1	183.7	196.2
Trade balance (goods)	-53.9	-90.0	-99.9	-7.4	51.4	44.5	34.7	43.0
Exports of goods	776.0	695.0	699.7	622.1	636.3	689.2	750.0	766.6
Imports of goods	829.9	784.9	799.7	629.5	585.0	644.8	715.3	723.7
Imports of goods, Oil	196.9	184.9	167.6	88.1	64.9	82.9	108.0	106.2
Services balance	-47.8	-35.7	-28.8	-16.0	-10.6	-6.5	-4.4	-4.3
Credits	136.8	135.3	163.2	162.6	167.5	172.8	178.4	184.3
Debits	184.6	171.0	192.4	175.6	180.9	187.0	191.7	197.8
Income balance	175.6	181.6	184.6	176.2	173.9	177.0	173.2	178.4
Credits	229.6	241.3	256.9	248.5	261.3	272.5	253.5	264.7
Debits	54.0	59.7	72.4	72.3	87.5	95.5	80.2	86.2
Current net transfers	-14.2	-10.0	-19.0	-16.3	-19.8	-18.9	-19.9	-20.9
Capital account	-1.0	-7.7	-2.0	-2.2	-6.5	-2.6	-3.3	-3.2
Financial account	47.2	-62.5	24.9	163.2	279.8	127.5	148.7	160.3
Direct investment, net	117.5	144.7	118.6	133.3	134.4	149.7	132.5	144.6
Portfolio investment, net	28.8	-280.6	-42.2	131.5	276.5	-53.5	-47.0	-44.0
Other investment, net	-61.1	34.8	-60.1	-106.7	-125.4	7.7	52.8	48.8
Reserve assets	-37.9	38.7	8.5	5.1	-5.7	23.6	10.5	11.0
Errors and omissions, net	-4.8	-42.6	24.1	46.7	75.4	-35.6	0.0	0.0
				(In percent of GDP)				
Current account balance	1.0	0.9	0.8	3.1	3.9	4.0	3.6	3.8
Trade balance (goods)	-0.9	-1.7	-2.1	-0.2	1.0	0.9	0.7	0.8
Exports of goods	12.5	13.5	14.4	14.2	12.8	14.1	14.8	14.7
Imports of goods	13.4	15.2	16.5	14.3	11.8	13.2	14.1	13.9
Services balance	-0.8	-0.7	-0.6	-0.4	-0.2	-0.1	-0.1	-0.1
Income balance	2.8	3.5	3.8	4.0	3.5	3.6	3.4	3.4
Global assumptions								
Exchange Rate (¥/US$)	79.8	97.6	105.9	121.0	108.8	112.2	109.8	109.3
(Percent change)	0.0	22.3	8.6	14.3	-10.1	3.1	-2.1	-0.5
Oil prices (US$/barrel)	105.0	104.1	96.2	50.8	42.8	52.8	69.4	68.8
(Percent change)	1.0	-0.9	-7.5	-47.2	-15.7	23.3	31.4	-0.9
Memorandum items:								
Nominal GDP (US$ billion)	6,202.2	5,157.2	4,852.6	4,395.5	4,952.6	4,873.7	5,070.6	5,220.6
Net foreign assets (NFA)/GDP, US$ basis	57.7	61.1	62.8	63.3	58.6	59.7	61.7	64.5
Return on NFA (in percent), US$ basis	4.9	5.8	6.1	6.4	6.0	6.1	5.5	5.3
Net export contribution to growth	-0.8	-0.4	0.0	0.3	0.6	0.5	0.1	0.0

Sources: Haver Analytics; Japanese authorities; and IMF staff estimates and projections.

Table 4. Japan: General Government Operations, 2012–19
(In percent of GDP)

	2012	2013	2014	2015	2016	2017	2018	2019
						Est.	Proj.	
Total revenue	30.8	31.6	33.3	34.2	34.1	33.2	33.2	33.3
Taxes 1/	16.5	17.2	18.3	18.7	18.4	18.5	18.5	18.7
Social contributions	12.3	12.4	12.5	12.5	12.8	12.7	12.7	12.7
o/w Social security contributions	11.7	11.8	12.0	12.0	12.3	12.2	12.2	12.1
Other revenue	1.9	2.0	2.4	3.0	2.9	2.0	2.0	1.9
o/w interest income	1.1	1.3	1.4	1.4	1.3	1.3	1.3	1.3
Total expenditure	39.4	39.5	38.9	38.0	37.8	37.5	36.9	36.0
Expense	38.9	38.7	38.1	37.4	37.2	36.8	36.1	35.6
Consumption	11.6	11.5	11.5	11.1	11.0	11.0	10.8	10.7
Social benefits	21.8	21.8	21.5	21.2	21.3	21.1	21.0	20.9
o/w Social security benefits	19.3	19.3	19.0	18.8	18.8	18.7	18.6	18.5
Interest	2.3	2.2	2.2	2.1	2.0	1.8	1.7	1.4
Other expense	3.2	3.3	3.0	3.0	2.9	2.9	2.7	2.5
(Memo) Compensation of employees 2/	5.7	5.5	5.6	5.4	5.3	...	...	...
(Memo) Use of goods and services 2/	3.3	3.5	3.4	3.3	3.3	...	...	...
Net investment in nonfinancial assets	0.5	0.7	0.8	0.6	0.5	0.7	0.7	0.5
Gross investment in nonfinancial assets	3.9	4.1	4.2	3.9	3.8	4.0	3.9	3.6
o/w public investment	3.6	3.9	4.0	3.7	3.6	3.8	3.7	3.4
o/w land acquisition	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2
(less) Consumption of fixed capital	3.4	3.4	3.5	3.4	3.3	3.3	3.2	3.1
Net lending/borrowing (overall balance)	-8.6	-7.9	-5.6	-3.8	-3.7	-4.3	-3.7	-2.8
Excluding social security fund	-7.9	-7.5	-6.0	-4.8	-4.9	-4.3	-3.7	-3.0
Primary balance	-7.5	-7.0	-4.9	-3.2	-2.9	-3.8	-3.3	-2.6
Structural balance 3/	-7.4	-7.3	-5.3	-4.2	-4.1	-4.1	-3.6	-2.8
Structural primary balance 3/	-6.3	-6.4	-4.6	-3.6	-3.4	-3.7	-3.3	-2.6
Stock positions 4/								
Debt								
Gross 5/	229.0	232.5	236.1	231.3	235.6	237.6	238.2	236.6
Net	146.7	146.4	148.5	147.6	152.8	154.9	155.7	154.8
Net worth	9.6	13.5	13.0	8.9	3.3	...	...	...
Nonfinancial assets	133.1	133.5	133.9	129.5	129.6	...	...	...
Produced assets	108.5	109.7	110.8	107.8	107.7	...	...	...
Non-produced assets	24.6	23.8	23.1	21.8	21.9	...	...	...
Net financial worth	-123.4	-120.0	-120.9	-120.6	-126.3	...	...	...
Financial assets	108.6	115.6	118.2	113.6	112.2	...	...	...
Monetary Gold and SDR, etc.	0.6	0.7	0.8	0.7	0.7	...	...	...
Currency and deposits	8.4	8.8	12.0	15.0	17.4	...	...	...
Loans	6.9	7.0	5.9	4.3	4.4	...	...	...
Debt securities	25.6	24.0	18.4	16.6	15.7	...	...	...
Equity and investment fund shares	26.3	29.4	30.6	30.0	29.5	...	...	...
o/w shares	6.3	9.3	10.3	10.0	10.1	...	...	...
Insurance, pension and standardized guarantee schemes	0.0	0.0	0.0	0.0	0.0	...	...	...
Financial derivatives and employee stock options	0.0	0.1	0.0	0.0	0.0	...	...	...
Other financial assets	40.7	45.6	50.5	47.0	44.5	...	...	...
Liabilities	232.0	235.5	239.1	234.2	238.5	...	...	...
Monetary Gold and SDR, etc.	0.3	0.4	0.4	0.4	0.4	...	...	...
Currency and deposits	0.0	0.0	0.0	0.0	0.0	...	...	...
Loans	33.4	32.9	32.2	30.8	30.3	...	...	...
Debt securities	186.7	190.6	194.6	191.1	196.3	...	...	...
Equity and investment fund shares	3.0	3.1	3.0	3.0	2.9	...	...	...
Insurance, pension and standardized guarantee schemes	0.0	0.0	0.0	0.0	0.0	...	...	...
Financial derivatives and employee stock options	0.0	0.0	0.0	0.0	0.0	...	...	...
Other liabilities	8.6	8.5	8.8	9.0	8.7	...	...	...
Memorandum item:								
Nominal GDP (trillion yen)	495.0	503.2	513.9	532.0	538.5	546.6	557.0	570.5

Sources: Japan Cabinet Office; IMF staff estimates and projections.
1/ Including fines.
2/ Fiscal year basis.
3/ In percent of potential GDP.
4/ Market value basis.
5/ Nonconsolidated basis.

Table 5. Japan: Medium-Term Projections, 2014–23

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
					Proj.					
					(In percent change)					
Real GDP	0.4	1.4	1.0	1.7	1.1	0.9	0.3	0.7	0.5	0.5
Private final consumption	-0.9	0.0	0.1	1.0	0.6	0.8	-0.9	0.7	0.5	0.6
Government consumption	0.5	1.5	1.3	0.4	0.5	1.1	2.1	1.1	1.0	1.1
Gross Private fixed investment	3.7	2.7	1.4	2.9	2.8	3.0	1.3	0.9	0.5	0.4
Public investment	0.7	-1.7	-0.1	1.2	-1.8	-5.9	-2.7	-2.8	-4.0	-2.2
Stockbuilding (contribution to growth)	0.1	0.3	-0.2	-0.1	0.1	0.0	0.0	0.0	0.0	0.0
Exports	9.3	2.9	1.7	6.7	3.9	2.1	3.0	1.8	1.5	1.4
Imports	8.3	0.8	-1.6	3.4	3.2	2.3	1.6	1.8	1.5	1.6
Total domestic demand	0.4	1.0	0.4	1.2	0.9	1.1	0.1	0.7	0.5	0.5
Net exports (contribution)	0.0	0.3	0.6	0.5	0.1	0.0	0.2	0.0	0.0	0.0
Real GDP per Capita	0.5	1.5	1.0	1.9	1.4	1.3	0.6	1.1	0.9	0.9
Private final consumption per Capita	-0.7	0.1	0.1	1.2	0.9	1.1	-0.6	1.0	0.9	1.0
Unemployment rate (percent)	3.6	3.4	3.1	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Headline CPI inflation (average) 1/	2.8	0.8	-0.1	0.5	1.2	1.3	1.7	1.1	1.2	1.3
Headline CPI inflation (average) without tax 2/	1.2	0.3	-0.1	0.5	1.2	1.1	0.9	1.1	1.2	1.3
Output gap (in percent of potential output)	-2.6	-2.0	-1.8	-0.8	-0.3	0.1	-0.1	0.0	0.0	0.0
					(In percent of GDP)					
Overall fiscal balance	-5.6	-3.8	-3.7	-4.3	-3.7	-2.8	-2.1	-2.0	-1.9	-2.0
Primary balance	-4.9	-3.2	-2.9	-3.8	-3.3	-2.6	-2.0	-1.9	-1.8	-1.8
General government debt										
Gross	236.1	231.3	235.6	237.6	238.2	236.6	235.8	235.6	235.6	235.4
Net	148.5	147.6	152.8	154.9	155.7	154.8	154.2	154.0	153.9	153.8
External current account balance	0.8	3.1	3.9	4.0	3.6	3.8	4.1	4.2	4.1	4.1
National savings	24.7	27.1	27.5	28.0	28.1	28.4	28.8	28.9	28.6	28.5
Private	24.1	25.7	26.9	27.8	27.4	27.0	26.9	26.9	26.7	26.7
Public	0.6	1.4	0.6	0.1	0.7	1.4	1.9	2.0	1.9	1.7
National investment	23.9	24.0	23.6	24.0	24.5	24.6	24.7	24.7	24.5	24.3
Private	18.6	18.9	18.6	18.9	19.5	20.0	20.2	20.3	20.3	20.3
Public	5.3	5.1	5.0	5.1	5.0	4.7	4.5	4.4	4.2	4.1

Sources: Haver Analytics; Japanese authorities; and IMF staff estimates and projections.

1/ With planned consumption tax increases in 2014, 2015, 2019, and 2020.

2/ Without planned consumption tax increases in 2014, 2015, 2019, and 2020.

Table 6. Japan: Financial Soundness Indicators, 2010–18 1/

	2010	2011	2012	2013	2014	2015	2015	2016	2017	2018
					(In percent)					
Capital adequacy										
Regulatory capital to risk-weighted assets 2/3/	13.3	13.8	14.2	15.2	15.6	15.5	15.9	15.9	16.0	17.1
Regulatory tier 1 capital to risk-weighted assets	9.9	10.7	11.3	11.7	12.1	12.5	12.9	13.3	13.5	14.9
NPL net of provisions/capital 2/4/	22.7	22.2	21.4	19.2	16.2	12.8	12.2	11.5	9.0	7.6
Asset quality										
Non-performing loans (NPL) to total loans ratio 2/4/	2.5	2.4	2.4	2.3	1.9	1.6	1.5	1.5	1.3	1.1
Sectoral distribution of loans 4/5/										
Residents	94.7	94.0	93.5	92.3	90.7	89.5	90.1	90.9	90.2	90.2
Deposit-takers	4.2	4.2	4.5	4.7	3.6	3.6	3.7	5.6	4.5	5.2
Central bank	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other financial corporations	10.5	9.9	10.1	9.9	8.9	9.3	9.4	9.5	9.9	9.4
General government	7.6	8.2	8.4	8.6	8.8	8.8	8.9	8.8	8.7	8.6
Non-financial corporations	39.8	37.7	38.8	37.8	38.0	36.8	36.8	36.7	36.8	36.6
Other domestic sectors	32.5	34.0	31.7	31.2	31.3	30.9	31.2	30.3	30.3	30.5
Non-residents	5.3	6.0	6.5	7.7	9.3	10.5	9.9	9.1	9.8	9.8
Earnings and profitability										
Return on assets 2/4/	0.2	0.2	0.3	0.4	0.3	0.3	0.4	0.3	0.2	0.2
Return on equity 2/4/	5.5	4.8	5.7	9.1	7.8	6.3	8.9	6.9	5.1	5.4
Interest margin	1.5	1.5	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1.1
Net interest income to gross income 2/4/	72.8	74.1	69.2	61.0	64.2	62.9	62.3	60.4	62.6	62.2
Non-interest expenses to gross income 2/4/	62.2	65.8	63.3	57.0	60.8	60.6	59.6	62.8	67.8	69.0
Personnel expenses to non-interest expenses 2/4/	…	…	…	44.2	44.8	44.1	0.0	60.2	59.6	50.3
Liquidity										
Liquid assets to total assets 2/4/	23.2	25.6	26.3	26.1	26.4	26.9	27.6	27.2	28.7	29.6
Liquid assets to short-term liabilities 2/4/	46.6	49.1	49.0	48.0	47.6	48.1	49.4	49.1	49.7	49.9
Non-interbank loans-to-customer-deposits 2/4/	77.3	74.9	74.5	75.3	75.5	75.7	76.1	74.9	73.3	71.7
Other										
Capital-to-total assets 2/3/	4.4	4.7	4.7	5.5	5.5	5.8	5.6	5.5	5.4	5.5
Gross derivative asset to capital 2/4/	70.7	61.4	54.2	51.2	38.4	47.4	46.1	53.0	37.0	30.7
Gross derivative liability to capital 2/4/	65.3	56.6	52.0	50.5	38.2	48.6	45.2	50.2	35.7	28.3

Sources: IMF, Financial Soundness Indicators (FSI) database; and IMF staff estimates.
1/ Data for these series are for Q1 of each year.
2/ Including city banks and regional banks and but not shinkin banks.
3/ Aggregated based on a consolidated basis.
4/ Aggregated based on an unconsolidated basis.
5/ Including all deposit-taking institutions in Japan.

Table 7. Japan: Sustainable Development Goals Monitoring

Goals	2005	2010	2015	Peer Average (as of 2015)
Poverty				
Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population) 1/	...	0.3	...	0.5
Health and Education				
Death rate, crude (per 1,000 people)	8.5	9.5	10.3	8.6
Birth rate, crude (per 1,000 people)	8.4	8.5	8.0	11.1
Fertility rate, total (births per woman)	1.3	1.4	1.5	1.7
Mortality caused by road traffic injury (per 100,000 people)	9.2	5.4	4.7	...
Mortality from CVD, cancer, diabetes or CRD between exact ages 30 and 70 (%)	10.4	9.5	8.6	12.3
Mortality rate, adult, female (per 1,000 female adults)	44.9	41.4	...	...
Mortality rate, adult, male (per 1,000 male adults)	92.4	82.7	...	...
Inclusion				
Proportion of seats held by women in national parliaments (%)	9.0	11.3	9.5	26.6
Proportion of time spent on unpaid domestic and care work, female (% of 24 hour day) 2/ 6/	14.9	14.9	...	...
Proportion of time spent on unpaid domestic and care work, male (% of 24 hour day) 2/ 6/	2.6	2.9	...	...
Account at a financial institution (% age 15+) 3/	...	...	96.6	90.6
Share of youth not in education, employment, or training, total (% of youth population) 4/	...	4.3	3.6	13.3
Unemployment, total (% of total labor force) (national estimate)	4.4	5.1	3.3	6.2
Proportion of women in director role (%) 7/				
National civil service	...	...	4.4	...
Prefectural civil service	...	...	9.8	...
Private corporations	...	...	10.3	...
Proportion of women in section chief role (%) 7/				
National civil service	...	...	22.2	...
Prefectural civil service	...	...	22.4	...
Private corporations	...	...	18.6	...
Climate				
Terrestrial and marine protected areas (% of total territorial area) 5/	...	...	2.1	17.5
CO2 emissions (metric tons per capita) 5/	9.7	9.1	9.5	...
Fossil fuel energy consumption (% of total)	81.6	80.9	93.7	...
Global Partnership				
Net ODA provided to the least developed countries (% of GNI)	0.03	0.05	0.05	...
Net ODA provided, to the least developed countries (trillions USD)	1.27	2.65	2.48	...
Net ODA provided, total (% of GNI)	0.28	0.20	0.20	...
Net ODA provided, total (trillions USD)	13.13	11.06	9.20	...

1/ 2008 data used for 2010 and Peer Average.

2/ 2011 data used for 2010.

3/ 2014 data used for 2015 and Peer Average.

4/ 2012 data used for Peer Average.

5/ 2014 data used for 2015.

6/ 2006 data used for 2005.

7/ July 2017 data used for 2015.

Sources: UN SDG Indicators Global Database; Japan Cabinet Office, Gender Equality Bureau; World Bank, WDI.

Table 8. Japan: Monthly Economic Indicators

(Percentage changes over preceeding period unless otherwise indicated, seasonally adjusted)

	2016										2017												2018									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Overall Activity																																
PMI-Manufacturing (level)	49.1	48.2	47.7	48.1	49.3	49.5	50.4	51.4	51.3	52.4	52.7	53.3	52.4	52.7	53.1	52.4	52.1	52.2	52.9	52.8	53.6	54.0	54.8	54.1	53.1	53.8	52.8	53.0	52.3	52.5	52.5	52.9
Industrial production	1.2	0.4	-1.2	1.5	0.0	1.3	0.3	0.3	1.0	0.7	-1.1	1.0	-0.5	2.9	-2.1	1.2	-0.3	1.3	-0.6	0.5	0.7	1.8	-4.5	2.0	1.4	0.5	-0.2	-1.8	-0.2	0.2	-1.1	...
IT-related 1/	-1.1	1.1	0.7	0.7	0.5	7.7	-7.8	-0.2	1.4	-5.3	-7.5	8.1	2.6	0.0	-3.8	-1.0	-1.9	2.7	-2.1	-1.6	3.6	1.9	-8.3	0.8	-0.6	1.8	4.4	-8.6	7.8	1.4	-4.2	...
Shipments	1.3	0.3	-0.7	1.1	0.3	0.2	0.6	1.1	1.0	0.0	-0.9	0.9	-0.3	1.8	-1.5	1.6	-0.4	1.5	-1.8	-0.4	1.9	2.0	-4.5	1.6	1.2	1.6	-1.6	0.3	-2.0	1.7	-3.0	...
Consumption goods	1.3	2.5	-3.1	0.6	1.6	-0.7	0.4	1.9	0.8	-1.5	-1.7	2.4	0.5	3.3	-2.0	0.6	-1.2	0.1	-0.9	-0.2	1.2	1.2	-5.2	5.2	-0.1	4.5	-4.6	0.4	-2.7	2.3	-2.4	...
Capital goods	0.6	1.9	0.6	0.2	-0.9	0.8	0.9	-0.1	1.8	-2.1	1.5	-0.7	-1.0	3.1	-1.0	1.3	-0.1	3.3	-4.0	0.7	2.7	4.8	-1.7	-4.0	4.0	2.5	-6.3	4.3	-4.9	5.6	-5.0	...
Private Consumption																																
Real Synthetic Consumption Index	-0.2	-0.5	0.1	0.2	0.6	-0.5	-0.1	0.4	-0.4	0.2	0.4	-0.3	1.2	0.2	0.0	-0.3	-0.6	0.1	-0.1	-0.3	1.5	-1.0	-0.1	0.4	-0.8	1.2	-0.4	0.5	-0.7	0.0	...	...
Index of retail sales	0.3	0.3	-0.3	0.0	1.6	-1.7	0.5	2.4	-0.7	-0.7	0.3	0.3	0.1	0.9	-0.9	0.3	0.3	-0.5	0.6	0.1	1.0	1.0	-1.6	0.5	-0.6	1.3	-1.7	1.4	0.1	0.9	-0.2	...
Household consumption expenditure	-3.9	1.9	-0.6	-1.6	1.5	-1.1	0.1	0.9	-0.9	0.2	-0.8	0.9	-0.9	1.6	0.6	0.9	-0.9	-0.3	-0.4	0.5	1.1	-0.8	1.7	-1.1	-1.4	-0.4	0.5	1.2	0.8	2.5	...	...
Consumer confidence (level)	41.6	40.7	41.5	42.5	41.6	42.6	43.0	42.0	40.5	42.5	43.0	42.7	44.1	43.1	43.9	43.8	43.9	43.7	44.1	44.2	44.3	44.3	44.7	44.0	44.4	43.4	44.1	44.1	43.6	43.5	43.5	42.9
Consumption Activity Index (2010=100)	103.9	102.8	103.3	103.4	103.8	103.7	103.8	104.1	104.1	103.9	104.2	104.2	103.9	105.4	104.5	104.4	105.0	104.5	104.6	104.6	105.3	105.3	105.1	104.9	103.7	105.5	104.8	105.3	105.3	105.1	...	...
Business Investment																																
Machinery orders: private domestic demand	0.5	-5.0	-0.5	5.9	3.7	-5.9	1.7	1.4	-1.6	3.3	-3.6	1.1	0.4	-2.1	-1.9	-1.8	4.5	3.2	-5.5	2.7	5.5	-9.3	8.2	2.1	-3.9	10.1	-3.7	-8.8	11.0	6.8	...	...
Business confidence 2/	7.0	...	...	4.0	...	...	5.0	...	...	7.0	...	...	10.0	...	...	12.0	...	...	15.0	...	...	16.0	...	...	17.0	...	...	16.0	...	...	15.0	...
Residential Investment																																
Housing starts -- units	0.0	-0.3	1.6	-1.9	1.8	-2.7	2.2	0.7	-2.7	-1.4	3.8	-3.6	2.7	1.4	-0.6	0.1	-2.1	-2.4	1.4	-1.1	1.7	-2.7	-8.6	8.2	-3.4	10.9	0.4	-8.2	4.7	0.0	-1.6	...
Public Investment																																
Public works contracts	-0.4	7.7	-8.7	2.7	-4.0	9.9	1.1	-17.2	7.7	6.6	4.3	3.9	-0.2	-3.6	-0.8	-5.4	-5.7	3.4	-0.2	-4.0	8.1	-4.8	-3.1	-5.4	7.0	17.6	-1.5	-13.4	-1.5	1.8	-5.1	...
Prices, y-o-y																																
CPI	0.0	-0.3	-0.5	-0.4	-0.4	-0.5	-0.5	0.1	0.5	0.3	0.4	0.3	0.2	0.4	0.4	0.4	0.4	0.7	0.7	0.2	0.6	1.0	1.4	1.5	1.1	0.6	0.7	0.7	0.9	1.3	1.2	...
Excluding fresh food	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.3	-0.3	-0.2	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.7	0.7	0.8	0.9	0.9	0.8	1.0	0.8	0.8	0.7	0.8	0.8	0.9	1.0	...
Excluding fresh food and energy	0.9	0.8	0.7	0.7	0.5	0.4	0.2	0.3	0.2	0.1	0.2	0.1	-0.1	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.4	0.3	0.2	0.3	0.4	0.4	...
Import price	-18.9	-18.4	-18.8	-21.8	-20.8	-20.4	-16.1	-14.1	-9.8	-2.9	4.3	9.6	12.1	10.9	12.4	11.5	11.9	12.8	13.8	15.6	10.4	7.3	5.0	4.4	1.7	5.1	6.8	10.8	11.5	12.2	10.9	...
Labor Market																																
Unemployment rate (level)	3.2	3.2	3.1	3.1	3.0	3.1	3.0	3.0	3.1	3.1	3.0	2.9	2.8	2.8	3.0	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.4	2.5	2.5	2.5	2.2	2.4	2.5	2.4	2.3	...
Labor force participation rate (level)	59.9	60.0	60.0	60.2	60.2	60.1	60.1	60.1	60.1	60.3	60.3	60.2	60.2	60.4	60.5	60.5	60.6	60.7	60.6	60.6	60.6	60.6	60.8	61.3	61.9	61.8	61.5	61.2	61.3	61.5	61.5	...
Employment	-0.1	0.2	0.1	0.5	0.2	-0.2	0.0	0.2	-0.1	0.4	0.1	-0.2	0.2	0.3	0.0	0.1	0.2	0.2	-0.1	0.0	0.2	0.0	0.6	0.8	0.7	0.0	-0.3	-0.6	0.1	0.4	0.0	...
Ratio job offers/seekers (level)	131.0	133.0	135.0	136.0	136.0	137.0	139.0	140.0	141.0	143.0	143.0	144.0	145.0	147.0	149.0	150.0	151.0	152.0	153.0	155.0	156.0	159.0	159.0	158.0	159.0	159.0	160.0	162.0	163.0	163.0	164.0	...
Total Compensation Index	0.2	-0.5	-0.1	0.0	1.3	-1.2	-0.1	0.3	0.0	0.1	0.0	0.2	-0.2	0.2	-0.1	0.0	0.2	0.0	0.2	-0.3	0.5	0.1	0.3	0.0	0.7	-1.1	1.4	1.3	-1.5	-0.7	...	...
Monetary, Credit, and Financial Market																																
Overnight call rate	0.0	-0.1	-0.1	-0.1	0.0	0.0	-0.1	0.0	-0.1	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
10-year JGB	-0.1	-0.1	-0.1	-0.2	-0.2	-0.1	0.0	-0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Bank lending	0.3	0.3	-0.5	0.0	0.4	0.0	0.4	0.4	0.1	1.1	0.3	0.0	0.4	0.3	-0.3	0.1	0.5	-0.1	0.2	0.2	0.0	0.8	0.2	-0.3	0.2	0.4	-0.4	0.3	0.4	0.1	0.3	...
Nikkei 225	4.6	-0.6	3.4	-9.6	6.4	1.9	-2.6	5.9	5.1	4.4	-0.4	0.4	-1.1	1.5	2.4	1.9	-0.5	-1.4	3.6	8.1	3.2	0.2	1.5	-4.5	-2.8	4.7	-1.2	0.5	1.1	1.4	5.5	-9.1
Exchange Rates																																
Yen per U.S. dollar (level)	112.9	109.5	109.0	105.5	103.2	101.3	101.8	103.9	108.6	116.1	114.9	113.1	112.9	110.0	112.2	111.0	112.4	109.8	110.8	112.9	112.8	112.9	111.0	107.8	106.1	107.6	109.7	110.1	111.5	111.0	112.0	112.8
NEER	0.7	1.7	1.7	3.7	2.0	1.9	-0.5	-0.7	-2.3	-6.0	0.7	0.7	0.0	2.4	-2.6	0.5	-2.1	1.3	-1.5	-1.3	-0.2	-0.5	0.1	2.1	1.8	-1.5	-0.4	0.7	0.1	1.1	-0.9	...
REER (CPI-based)	0.3	1.5	1.4	3.6	1.9	1.7	-0.9	-0.4	-2.1	-6.5	0.0	0.7	-0.2	2.3	-2.7	0.4	-2.1	1.1	-1.6	-1.5	0.0	-0.4	0.1	2.0	1.4	-2.0	-0.6	0.7	0.2	1.3	-1.0	...
Trade																																
Trade balance (US$ bill.)	3.0	3.1	2.7	3.4	2.8	3.1	3.4	3.4	3.7	2.8	1.3	6.0	0.9	-0.1	1.6	0.4	2.7	3.6	2.4	3.1	3.3	0.4	3.6	-1.4	0.8	4.1	-2.4	0.6	-1.0	-1.7	-2.1	...
Exports (US$ bill.)	51.3	52.2	52.1	54.7	54.9	55.9	56.6	56.1	55.2	52.9	53.8	58.5	56.5	57.3	56.9	57.0	57.9	59.9	59.7	59.5	60.7	60.9	61.2	62.5	61.8	63.7	62.0	61.5	61.3	61.8	59.7	...
Quantum export index (2010=100)	89.1	88.2	87.0	91.4	88.7	88.5	92.1	89.1	93.3	93.9	88.5	96.6	94.7	92.1	94.1	94.9	91.1	98.0	96.3	92.6	98.3	97.9	96.5	94.5	96.2	96.7	98.4	96.1	...	...	...	...
Imports (US$ bill.)	48.3	49.2	49.4	51.3	52.1	52.8	53.1	52.6	51.6	50.1	52.5	52.5	55.6	57.4	55.4	56.5	55.2	56.3	57.3	56.4	57.4	60.5	57.6	64.0	61.0	59.6	64.5	61.0	62.2	63.5	61.9	...
Quantum import index (2010=100)	104.2	99.2	102.1	103.4	100.7	105.3	103.5	101.5	105.9	104.0	105.8	97.4	108.2	104.6	107.4	107.7	104.3	107.7	103.2	105.1	108.4	110.1	108.9	108.5	102.9	106.5	114.1	101.3	...	...	...	...
Terms of Trade (unit values)	5.6	-1.2	-2.0	1.0	-0.4	1.6	-2.4	0.5	-1.2	0.1	-2.4	-1.9	2.6	-1.6	-0.3	0.5	2.5	-1.5	-0.5	-1.1	0.0	0.1	-0.9	-0.1	-1.2	1.1	-2.1	0.3	...	...	...	...
Foreign Reserves																																
Gross Reserves (US$ bill.)	1262.1	1262.5	1254.0	1265.4	1264.8	1256.1	1260.1	1242.8	1219.3	1216.9	1231.6	1232.3	1230.3	1242.3	1251.9	1249.8	1260.0	1268.0	1266.3	1260.9	1261.2	1264.3	1268.5	1261.7	1268.3	1256.0	1254.5	1258.7	1256.3	1259.3	1259.7	...

Sources: Global Insight, Nomura Database; CEIC database; Bloomberg LP and IMF, Information Notice System.

Note: Dark green highlighting denotes growth is above average. Dark red highlighting denotes growth is below average. Yellow highlighting denotes growth is average. Reverse color order applies for effective exchange rate (green denotes depreciating) and unemployment series (green denotes decreasing).

The average for each data series covers data points since March 2016 to latest month.

1/ Information and communication electronics equipment.

2/ Tankan survey. Percentage of respondents reporting good business conditions less those reporting poor conditions.

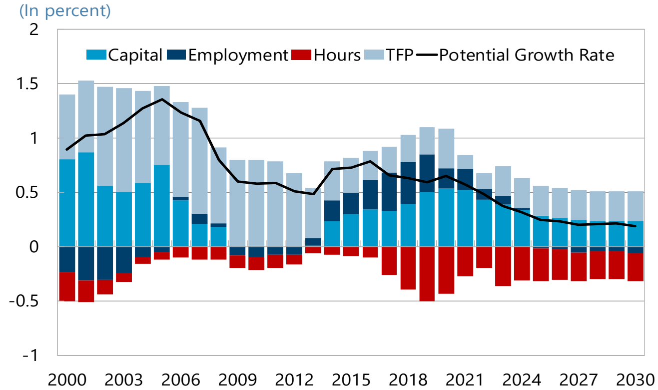
Annex I. Estimating Japan's Potential Output[1]

1. **Potential output is an important indicator for economic policy making.** Potential output helps gauge a country's current economic health and expectations of future growth, and provides a foundation for the discussion of economic policies. Despite its clear importance, a degree of uncertainty exists around the estimates, often due to a wide array of methodologies and judgements used by those estimating potential output and growth.

2. **Potential output and the output gap are estimated by applying a multivariate filter model (MVF) and a production-function approach.** We use two different methodologies to estimate potential output and better understand its drivers. First, a MVF approach developed by the IMF's Research Department is used to estimate the GDP growth rate and the output gap. This model uses Bayesian techniques to estimate potential output based on a model that incorporates the relationship between cyclical unemployment and inflation (Phillips curve), as well as the relationship between cyclical unemployment and the output gap (Okun's law).[2] Second, we complement the results from the MVF approach with a production-function approach to better understand the drivers of growth over the medium-term.[3]

Japan: Potential Growth, 2000–30

(In percent)



Source: IMF staff calculations.

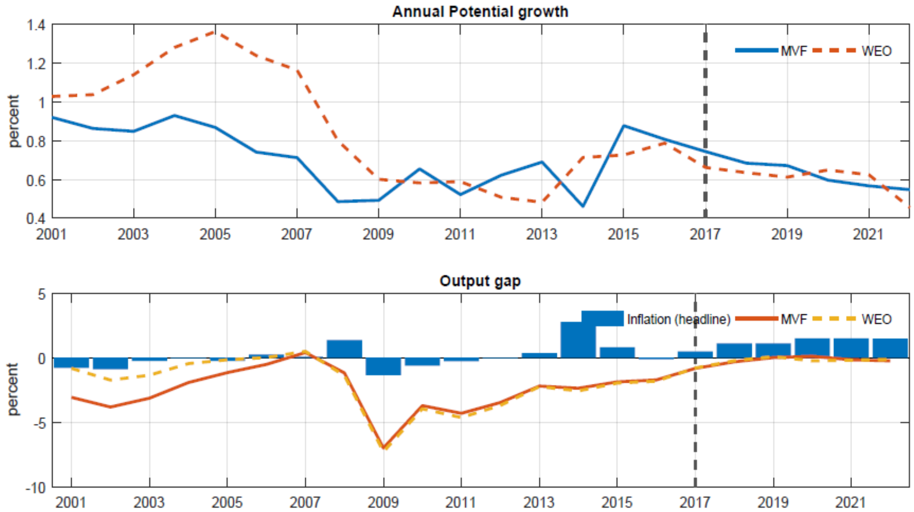
3. **According to both approaches, Japan's potential growth will stabilize at around 0.5–0.6 percent over the medium-run and the output gap, which is estimated to be negative for 2018, will close in 2019.** Consistent with the team's projection using a production-function approach (labeled as WEO in Figure A), the results from MVF (labeled as MVF in Figure A) suggests that annual potential growth will stabilize over the medium-term at around 0.5–0.6 percent. Estimates of output gap up to 2018 will remain negative, and the gap is expected to close in 2019. While a small negative output gap reappears in 2020 (due to the consumption tax increase in 2019Q4), the gap closes from 2021 onwards.

[1] Prepared by Gee Hee Hong (APD).

[2] See "A Simple Multivariate Filter for Estimating Potential Output", IMF WP/15/79 by Blagrave et al. (2015) for a description of the methodology and IMF (April 2018), World Economic Outlook, for an early use of this approach.

[3] IMF staff's methodology is close to those developed by the Bank of Japan (see Hara et al. 2006 and Kawamoto et al. 2017).

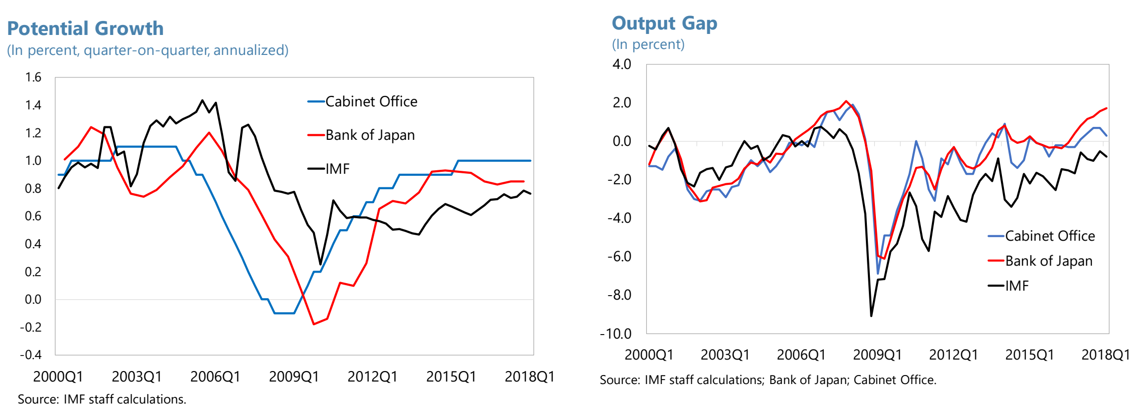
Figure A. Japan: Potential Growth and Output Gap Estimates, 2001–22



Source: IMF staff calculations.

4. There are some differences in the estimates of Japan's potential growth and output gap published by various institutions. IMF staff's current estimate of potential growth is around 0.8 percent (y/y growth). This is close to the estimate by the Bank of Japan (0.85 percent), but lower than the estimate of the Japan's Cabinet Office (about 1.0 percent) (see Figure B). The difference in the estimates across institutions is starker for the output gap. IMF staff's output gap estimate suggests that the Japanese economy still has a negative (but shrinking) output gap of -0.8 percent for 2017, while those by the Japanese authorities suggest a positive output gap for the same year (Cabinet Office: 0.5 percent, Bank of Japan: 1.2 percent). In all cases, the output gap is measured as the ratio of the difference between actual output and potential output over potential output. The differences in output gap estimates across institutions, despite only small differences in potential growth, stem largely from differing views adopted by IMF staff and the Japanese authorities on potential growth during and after the Global Financial Crisis in 2008.

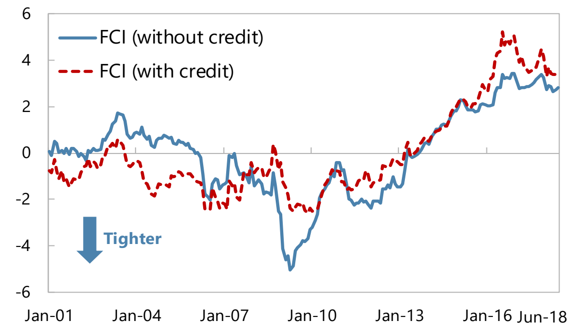
Figure B. Japan: Comparison of Potential Growth and Output Gap Estimates, 2000–18



Annex II. Financial Conditions and the Credit Cycle in Japan[1]

1. Financial conditions have tightened modestly since the beginning of 2018. A financial conditions index (FCI) is constructed for Japan as the first principal component of JGB yield spreads, money market spreads, credit spreads of corporate bonds, movement in asset prices, the nominal effective exchange rate, and credit to corporate and household sectors. The FCI shows accommodative financial conditions since the introduction of Abenomics, but conditions have recently started to tighten. Despite low JGB yields, term premia, and credit spreads, stock prices have declined, the yen has appreciated in effective terms, and U.S. dollar funding costs have continued to rise since the beginning of 2018. Meanwhile, credit growth to the private sector has weakened.

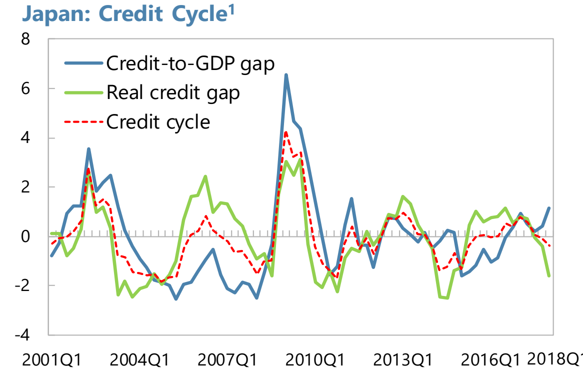
Japan: Financial Conditions Index (FCI)[1]



Sources: Bank of Japan; Ministry of Finance; Haver Analytics; and IMF staff estimates.
[1] Estimated as the first principal component of (standardized) 20-year/10-year JGB yield spread, 10-year/2-year JGB yield spread, 2-year/3-month JGB yield spread, 3-month TIBOR/JGB yield spread, 1-year/1-month TIBOR spread, spreads between AA-, A-, and BBB-rated 5-year corporate bond and JGB yields, USD funding cost premium over 3-month USD LIBOR, short-term prime lending rate/3-month JGB yield spread, long-term prime lending rate/JGB yield spread, benchmark housing finance rate/long-term JGB yield spread, household credit growth, corporate credit growth, first difference of log stock price, and first difference of log nominal effective exchange rate. The long-term JGB yield is the average of 10- and 20-year JGB yields.

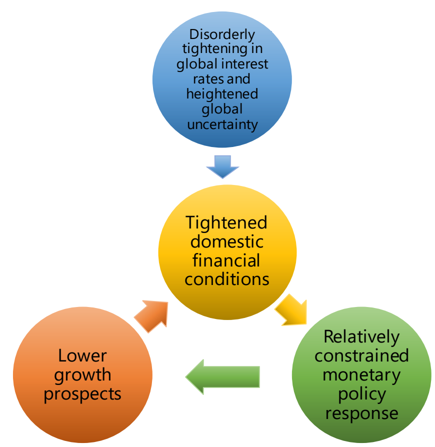
2. The credit cycle in Japan has likely fallen below trend since the last quarter of 2017. The credit cycle is measured by the first principal component of two credit cycle indicators, calculated by detrending the year-on-year real credit growth and the credit-to-GDP ratio with a HP filter. The estimated first principal component suggests a slight tightening in the credit cycle since Q4 2017, in line with slowing credit growth. However, the two indicators have started to diverge since then. The real credit gap suggests a below-trend expansion in the cycle, while the credit-to-GDP gap shows a continued above-trend cyclical expansion.

Japan: Credit Cycle[1]



Sources: Bank of Japan; Haver Analytics; and IMF staff estimates.
[1] Credit-to-GDP gap is the cyclical component of the credit-to-GDP ratio filtered by ther HP filter. Real credit gap is the HP-filtered year-on-year real credit growth (deflated by CPI). Credit cycle is calculated as the first principal component of the credit-to-GDP gap and the real credit gap.

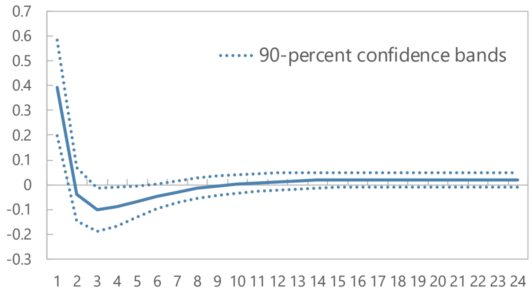
3. The tightening FCI and credit cycle may weigh on economic growth going forward. To explore the relationship between the financial variables and the business cycle, a simple autoregression (VAR) model is built with the FCI (without credit variables), real GDP growth, core core inflation (excluding fresh food and energy), short-term interest rate (uncollateralized overnight call market rate), and the credit cycle indicators in Japan as endogenous variables. This approach finds that both FCI and the credit-to-GDP gap have significant impact on real GDP growth.



[1] Prepared by Fei Han (MCM).

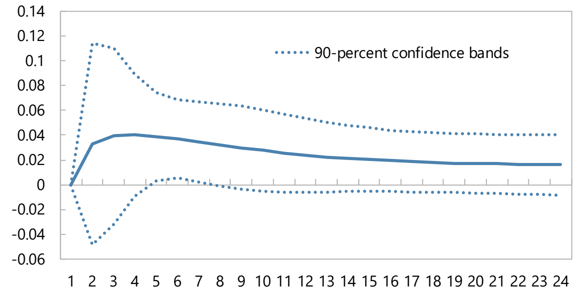
Specifically, a tightening in the FCI by one standard deviation (s.d.) could lead to a decline in Japan's annualized real GDP growth rate by about 0.4 percentage points (q/q). The lower GDP growth could in turn tighten financial conditions, creating a self-fulfilling cycle. Albeit with less impact and statistical significance, a slowdown in the credit cycle expansion may also reduce real GDP growth.

Response of Real GDP Growth: Shock to FCI[1]
(Percentage points)



Sources: Haver Analytics; and IMF staff estimates.
[1] The FCI without credit is used as the FCI measure in the VAR model, and the shock is a one-standard-deviation shock to the FCI without credit that leads to a tightening in FCI. The time horizon is in quarters.

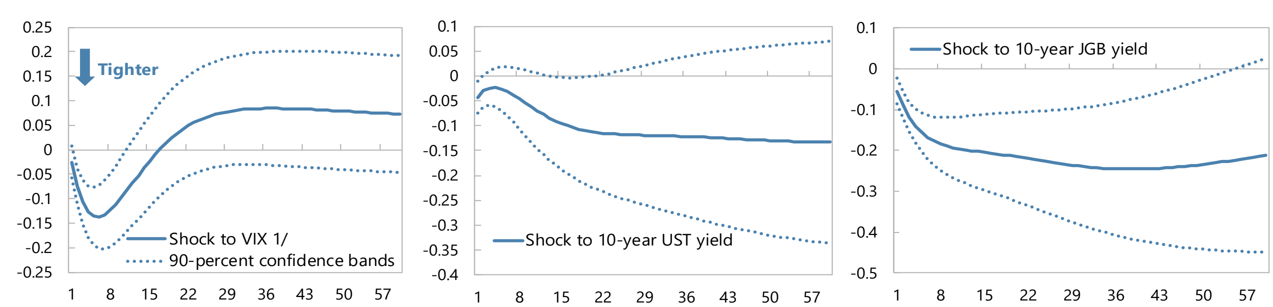
Response of Real GDP Growth: Shock to Credit-to-GDP Gap[1]
(Percentage points)



Sources: Haver Analytics; and IMF staff estimates.
[1] The credit-to-GDP gap is used as the credit cycle measure in the VAR model, and the shock is a one-standard-deviation negative shock to the credit-to-GDP gap. The time horizon is in quarters.

4. Financial conditions in Japan can be significantly affected by global and domestic monetary policies, and, to some extent, global uncertainty. A VAR model with VIX, short- and long-term interest rates in the U.S. and Japan, and the FCI (without credit variables) is estimated to identify the impact of global uncertainty (measured by VIX) and the U.S. and domestic monetary policies. The 3-month and 10-year sovereign bond yields of the U.S. and Japan are used to capture monetary policy shocks in the two countries. The impulse response functions suggest that all the variables could have significant effects on financial conditions in Japan. Specifically, a one-s.d. increase in the VIX could lead to a tightening in the FCI by more than 0.1. More importantly, a 25-basis point (bp) increase in the 3-month interest rates of the U.S. and Japan could cause a significant tightening in the FCI by about 0.1 and 0.7 at the peak, respectively. Similarly, a 25-bp tightening in the 10-year U.S. and Japanese interest rates could tighten the FCI by more than 0.1 and 0.8 at the peak, respectively. Given that Japan's monetary policy is constrained by the effective lower bound (short end) and the low profitability of financial institutions (long end), the ability of domestic monetary policy to mitigate the global financial tightening in a scenario with disorderly tightening in the U.S. monetary policy and heightened global uncertainty could be limited.

Japan: Impulse Responses of FCI[1]



Sources: Haver Analytics; and IMF staff estimates.
[1] The FCI without credit is used as the FCI measure in the VAR model. The shocks presented in the panel charts are all one-standard-deviation shocks to VIX and the interest rates. The time horizon is in months.

Annex III. Model-Based Growth and Inflation Projections for Japan[1]

1. A simple New Keynesian model, often referred to as the Forecasting and Policy Analysis System (FPAS), with Japan-specific features, provides a useful framework for model-consistent projections and policy analysis of medium-term growth and inflation. The model is based on Berg et al. (2006), a small structural model capturing key features of monetary policy transmission with nominal and real rigidities.[2] Japan-specific features are introduced, which include: the existence of an effective zero-lower bound on the policy interest rate; separation of headline and core inflation; monetary policy with endogenously determined credibility; and a simplified fiscal policy block.[3]

2. In the FPAS model's median medium-term projection, real GDP growth is expected to stabilize at the estimated potential growth rate after several quarters of slowdown, following the planned consumption tax increase in 2019Q4. Drivers of Japan's growth over the medium term include favorable external demand and supportive monetary policy, which translate into a weaker Japanese yen and below-equilibrium real interest rates in the model. Projected fluctuations over the medium term are mostly due to the consumption tax increase in 2019Q4, which will lead to a temporary boost in growth prior to the fourth quarter of 2019. This will be followed by a sharp slowdown in subsequent periods—consistent with the consumption tax experience of 2014. The economy is projected to recover gradually from 2021 onward, and grow at Japan's potential growth rate of about 0.5 percent.

3. The FPAS model's median projection for CPI headline and CPI core inflation is expected to rise gradually over the medium-term, but remain below the Bank of Japan (BoJ) target over the forecast horizon. Headline and core inflation will reach about 1.5 percent over the medium-term. Demand recovery, with support from an accommodative monetary policy stance and (already) tight labor market conditions, contribute to a gradual rise in inflation. However, mostly backward-looking inflation expectations and limited scope for monetary policy to quickly re-anchor expectations at the 2 percent target will prevent inflation from reaching the BoJ's objective in the medium-term. Over time, inflation expectations are expected to become more forward-looking, provided there is a continuation of supportive monetary policy.

4. Risks to growth and inflation are tilted to the downside over the medium-term. Fan charts are used to quantify uncertainty and risks around the FPAS model's median projections (Figure A).[4] Risks to medium term growth and inflation are skewed to the downside reflecting both domestic and external

[1] Prepared by Gee Hee Hong (APD) and Yaroslav Hul (ICD).

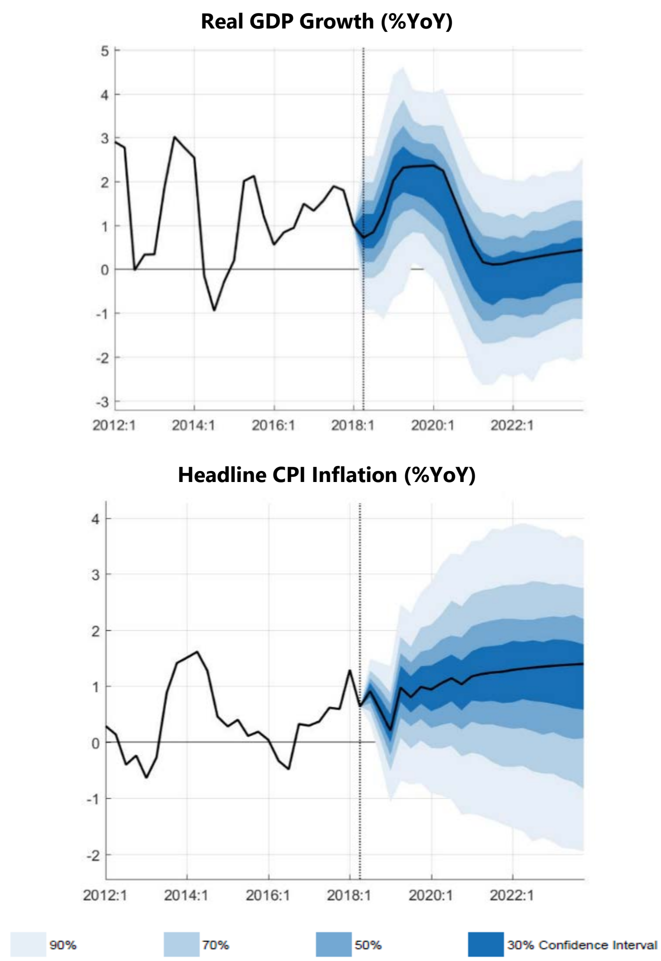
[2] For examples of the FPAS model's application to other countries, see "A Practical Model-Based Approach to Monetary Policy Analysis, Overview," IMF WP/06/080 by Berg et al. (2006) for Canada; and "Food Inflation in India: The Role for Monetary Policy", IMF WP 14/178 by Anand et al. (2014) for India.

[3] See forthcoming IMF Working Paper "Model-Based Inflation and Growth Projections for Japan" by Anand, Hong and Hul for more details.

[4] The degree of uncertainty is measured by the width of the fan chart, and the balance of risks is represented by the skewness and asymmetry around the median projection.

risks.[5] As a result, the FPAS model projects that **CPI headline and CPI core inflation (excluding VAT effects)** have less than a 15 percent chance of reaching the BoJ's 2 percent target in 2019 (14 percent for headline inflation and 9 percent for core inflation). By the end of 2023, the likelihood that both CPI inflation measures will reach the BoJ's 2 percent target is about 28 percent, while the likelihood that Japan will return to deflation (CPI inflation below zero) by 2020 is only about 21 percent. For **GDP growth**, the path fluctuates in 2019 and 2020, because of the consumption tax increase, and the likelihood that GDP growth will exceed 1 percent by the end of 2023 is about 25 percent. On the other hand, there is about 30 percent chance that Japan's GDP growth will fall below zero by end-2023.

Figure A. Japan: Growth and Inflation Projections over the Medium-Term[1]



[1] Real GDP growth calculated as year-on-year, annualized rate.

Source: IMF staff calculations.

[5] Domestic risks include weaker-than-expected domestic demand and concerns on the debt sustainability. External risks reflect geopolitical instability or trade tensions, which are channeled through yen appreciation from safe-haven flows and carry trade reversals.

Annex IV. Risk Assessment Matrix[1]

Overall Level of Concern		
	Likelihood (Over next 1–3 years)	**Impact and Policy Response**
➢ **Implementation of staff's credible, comprehensive and coordinated policy package**	**Low**. Implementation of a credible structural reform package combined with coordinated demand policies, effective income policies, and a credible medium-term fiscal framework to address debt sustainability concerns.	**High.** Higher expected growth and inflation. Public debt on a sustainable path and renewed confidence in domestic policies. Inflation expectations re-anchored at BoJ's inflation target and the current account in line with fundamentals. *Policy response:* The BoJ should lay out a credible exit strategy.
➢ **Rising protectionism and retreat from multilateralism**	**High**. Global imbalances and fraying consensus about the benefits of globalization lead to escalating and sustained trade actions and spreading isolationism. In the short term, increased uncertainty about growth triggered by escalating trade tensions leads to increased financial market volatility. Negative consequences for growth are, in turn, exacerbated by adverse changes in market sentiment and investment.	**High.** A backlash against global trade could have a significant growth impact through lower external demand and a widening of the output gap. Moreover, increased market volatility could also trigger a safe-haven appreciation of the yen, and lower equity prices and confidence in domestic policies. *Policy response:* Flexible policy responses should be considered, including further multilateral efforts to safeguard global trade and bilateral trade agreements.
➢ **Weaker-than-expected global growth** Slower than expected medium-term growth in the U.S. and Euro Area.	**Medium**. Capacity constraints in the U.S. become more binding and the economy pushes further through full employment, leading to a sharper-than-expected slowdown. Slow progress on structural reforms in the Euro area (including fiscal adjustment and legacy banking-sector problems) could raise debt sustainability concerns, push up borrowing costs, and undermine medium-term growth prospects.	**Medium**. Widening of the output gap due to lower external demand and depressed equity prices. Heightened uncertainty could also trigger a safe-haven-based yen appreciation, negatively affect inflation and confidence in domestic policies. *Policy response*: Despite limited policy space, the Japanese government should deploy additional measures on all policy fronts (including incomes policies) to restore growth and inflation momentum and maintain confidence in Abenomics.
Significant China slowdown and its spillovers	**Low/Medium**. Disorderly deleveraging adversely affects near-term growth (low likelihood). In the medium term, insufficient progress in deleveraging and rebalancing reduces growth, with additional credit stimulus postponing the slowdown, but making it sharper (medium likelihood).	**High**. Japanese exports would stall not only due to close trade links with China but also because of safe-haven-based yen appreciation causing a sharp correction in the stock market and sentiment. *Policy response*: Fiscal policy should provide a buffer against the external shock. Near-term policy space will depend on the existence of a credible fiscal consolidation plan. Ambitious structural reforms are also important to boost domestic demand.
➢ **Sharp tightening of global financial conditions**	**High.** Sharp tightening of global financial conditions causes higher debt service and refinancing risks; stress on leveraged firms, households, and vulnerable sovereigns; capital account pressures; and a broad-based downturn. Tighter financial conditions could be triggered by a sharper-than-expected increase in U.S. interest rates (prompted by higher-than-expected inflation) or the materialization of other risks.	**Medium**. Sharp tightening of global financial conditions could have a direct impact on growth through increased uncertainty, tighter domestic financial conditions, and higher financing costs for the government. There may also be indirect effects through financial and trade linkages with particularly vulnerable EMEs. *Policy response*: Domestic monetary policy space to mitigate the tightening is limited. Fiscal policy should provide the main buffer against any external shock, but policy space will depend on the existence of a credible fiscal consolidation plan.

[1] The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path (the scenario most likely to materialize in the view of IMF staff). The relative likelihood of risks listed is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability of 30 percent or more). The RAM reflects staff 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. "Short term" and "medium term" are meant to indicate that the risk could materialize within 1 year and 3 years, respectively.

	Overall Level of Concern	
	Likelihood (Over next 1–3 years)	**Impact and Policy Response**
➢ **Bond market stress from a reassessment of sovereign risk in Japan**	**Medium**. Abenomics falters, resulting in an eventual return of depressed domestic demand and deflation, and leading to bond market stress.	**High**. Staff's DSA analysis shows that an increase in the sovereign risk premium would gradually worsen public debt dynamics. But such a shock could cause distress in the financial sector with possible knock-on effects on debt. *Policy response:* Fiscal policy would have to become more contractionary and the fiscal framework strengthened, which together with additional JGB purchases by the BoJ should help contain the immediate rise in bond yields.
➢ **A severe natural disaster hits Japan**	**Medium**. An earthquake or other natural disaster leads to serious production disruptions and adjustments in equity markets.	**High.** Growth and confidence would decline, together with safe-haven-based yen appreciation, and equity price adjustments could hamper domestic demand. Firms may increase production offshoring. Fiscal position could deteriorate significantly, increasing future adjustment needs and the risk of a jump in the risk premium. *Policy response*: The government should deploy additional fiscal and monetary stimulus to restore growth and inflation momentum and maintain confidence.

Annex V. Debt Sustainability Analysis

1. Japan's public debt is unsustainable under current policies. Gross and net public debt amounted to 238 and 155 percent of 2017 GDP, respectively. The debt-to-GDP ratio is projected to be stable over the medium term due to an improving primary balance and a negative interest-growth differential. However, beyond the medium term, the debt ratio will start to increase again amid demographic headwinds – rapid ageing and depopulation, reaching above 245 percent of GDP in 2030. While all debt profile indicators are below early warning benchmarks, Japan's extremely high financing needs point to vulnerabilities to shocks and changes in market perception. The absence of a credible fiscal framework (with annual supplementary budgets) implies the risk of future primary balance shocks.

Baseline and Realism of Projections

2. **Assumptions.** Macroeconomic projections and policy assumptions are consistent with the Japan macro-framework over the medium term (up to 2023). In the longer-run, Japan's demographic headwinds will undermine both macroeconomic and fiscal prospects. In order to capture these challenges, the time horizon for the DSA exercise is extended to 2030:

- *Growth.* Potential growth is projected to be around 0.5 percent over the medium term, and will gradually decrease to 0.1 percent by 2030, mainly reflecting a declining contribution from labor.
- *Fiscal policy.* The structural primary deficit is projected to narrow from 3.3 percent of GDP in 2018 to around 2 percent in 2023, due mainly to the two-percentage point increase in the consumption tax planned for October 2019 and the fading effects of past supplementary budgets. Over the long-run, age-related expenditures (pension, health, and long-term care) are projected to increase as a share of GDP, consistent with Japan's ageing and declining population, while other components are assumed to be constant as a share of GDP. To capture the effects from demographic headwinds, the time horizon is extended to 2030. As a result, the structural primary deficit will start to increase again, reaching 2.7 percent of GDP by 2030.[1]
- *Monetary policy and interest rate.* Monetary policy is assumed to remain accommodative over the medium-term, in line with market expectations. CPI inflation is assumed to rise gradually to around 1 percent. Based on these assumptions, the interest-growth differential is projected to remain negative. In the longer-run, interest rates on JGBs (Japanese Government Bonds) are assumed to increase gradually (nominal interest rate on 10-year JGBs is assumed to reach

[1] Without reform, age-related expenditures will continue to increase in percent of GDP beyond 2030 as the old-age dependency ratio (the ratio of individuals aged 65 years and over to individuals aged 15-64 years) will only stabilize by 2060. IMF Working Paper 18/249, "On Financing Retirement, Health, and Long-Term Care in Japan" discusses this cost of ageing in a long-time horizon based on a general equilibrium overlapping generation model. See 2018 Japan Selected Issues Paper, "Japan—Options for Healthcare Reform" for potential reform options to contain the growth of health spending.

2 percent by 2030).[2] However, the average real interest rate will only increase to 0.3 percent in 2030 (with the implied interest-growth differential of 0.1 percent), helped by the extended maturity of government bonds. The baseline does not assume an increase in risk premiums.

3. Financing Needs. Japan's gross financing needs (defined as the sum of the fiscal deficit and maturing debt) are estimated to be around 52 percent of GDP in 2017 – the highest among advanced economies. Gross financing needs will remain exceptionally large, but decline to around 45 percent of GDP in the medium-term, due to an improving primary balance and extended maturity of government bonds. The maturity structure is projected by building on the FY2018 Debt Management Strategy.

4. Debt Profile. No indicators exceed the early warning benchmarks. The 10-year bond yield has been stable at an extremely low level, with a negative spread against U.S. Treasuries. The external financing requirement stood at 8 percent of GDP in 2017, well below the early warning threshold. This reflects the fact that foreign holdings of JGBs are relatively low at around 10 percent. In addition, there are no direct exchange rate risks as all JGBs are denominated in yen, which is assumed to remain the case in the future.

5. Net Debt. Net debt is an important indicator for Japan, given the large financial assets held by the government (about 83 percent of GDP). It should be noted, however, that not all the financial assets are available to meet debt obligations or easy to liquidate. They include, for example, social security assets for future obligations. The financial-assets-to-GDP ratio is assumed to be stable over the projection period.[3]

6. Realism of Baseline Assumptions.

- Past assumptions on real growth, primary balance and inflation have been neither too optimistic nor pessimistic compared to peer countries.

- The projected 3-year adjustment in the cyclically adjusted primary balance (CAPB) is in a realistic range, with a percentile rank of 31 percent compared to the historical experience for high-debt market access countries. The CAPB level is in the lowest quartile. This baseline assumes fiscal contraction of around 0.7 percent of GDP in 2019 due to the fading effects of past supplementary budgets, and the planned consumption tax rate hike. However, as discussed in the main text, staff recommends avoiding premature fiscal tightening in the near-term. In addition, the past record of yearly supplementary budgets indicates the risk of primary balance shocks throughout the projection period.

[2] This assumption does not reflect staff's views on monetary policy, but instead aims at providing conservative fiscal projections for assessing debt sustainability risks.

[3] Relative to the previous DSA, net debt is higher by about 35 percent of GDP. This revision results from work to better align financial assets included in calculations of net debt to be better aligned with the GFSM. In particular, the change in net debt is primarily due to the previous inclusion of equity assets in net debt.

Shocks and Stress Tests

7. Stress tests illustrate the vulnerabilities of Japan's public debt position to various shocks and changes in market perceptions, given the unprecedented level of debt and high financing needs:

- *Fan chart.* The fan chart, which incorporates feedback effects between macroeconomic variables and relies on historical data to calibrate shocks, illustrates considerable uncertainty around the baseline. For example, under the worst quartile case, the debt-to-GDP ratio could reach around 260 percent of GDP in 2023—more than 25 percentage points higher than in the baseline. In addition, when the possibility of a positive primary balance shock is ruled out, the debt-to-GDP ratio could be even higher by about 4 percent of GDP in 2023.

- *Primary balance shock*. The impact is estimated to be modest relative to other shocks. The assumed shock is equivalent to half of the 10-year historical standard deviation of changes in the primary balance, compared to the baseline. It is also assumed that additional borrowing leads to an increase in interest rate of 25 basis points for every 1 percentage point of GDP worsening of the primary deficit. The gross debt-to-GDP ratio will be marginally higher by around 3 percent of GDP in 2023 than in the baseline.

- *Growth shock*. The shock immediately results in worsening debt dynamics with the second largest impact among the scenarios. Real output growth rates are reduced by one half of the 10-year historical standard deviation of changes in growth, for 2 consecutive years, starting in 2019. As a result, the primary balance deteriorates, leading to higher interest rates as in the primary balance shock scenario. Also, a decline in inflation is assumed at a rate of 0.25 percentage point per 1-point decrease in growth. The impact is significant, bringing the debt ratio to about 246 percent of GDP—around 9 percentage points higher than the baseline. This scenario highlights the importance of avoiding fiscal tightening in the near term with a view to mitigate potential negative shocks due to the planned consumption tax rate increase and maintain growth momentum.

- *Interest rate shock*. The effect of an interest rate shock becomes larger with the passage of time. A spike in JGB yields is an important tail risk. A shock based on the historical maximum real interest rate is assumed to occur in 2019 and remain for the rest of the period. Although increasing only gradually due to the weighted average of JGB maturity at around 7.8 years,[4] the effective interest rate is higher by more than 1 percentage point in 2023 when compared to the baseline, with the debt-to-GDP ratio higher by around 9 percentage points. The difference compared to the baseline does not appear large in the medium-term, but the impact will accelerate as the interest rate hike becomes fully reflected. In addition, such a shock could have a material effect on the financial sector with possible knock-on effects on the debt ratio, and could lead to distress in the financial sector (see next shock).

[4] Sources: Bloomberg L.P. and IMF staff calculations.

- *Interest rate and contingent liability shock.* The impact is by far the largest among the scenarios. A one-time capital injection equivalent to about 3.6 percent of banking sector assets (approximately 10 percent of regional banks assets) will increase government spending by around 6 percent of GDP. The interest rate is assumed to rise by 25bps for each percentage point increase in the primary deficit. This is also combined with the real GDP growth shock. As a result, the debt ratio will increase to around 260 percent of GDP in 2020, about 22 percentage points higher than in the baseline.

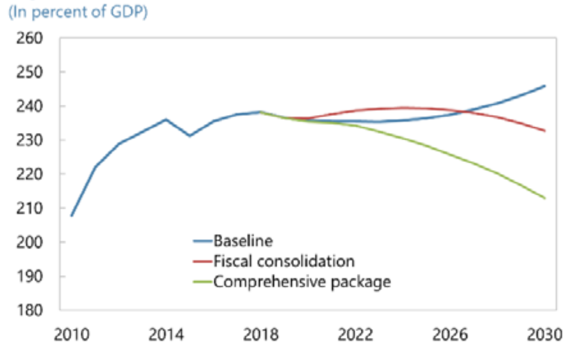
Longer-term Projections, Risks, and Reform Scenarios

8. Despite the relatively stable debt trajectory over the medium term, the debt-to-GDP ratios are projected to start increasing beyond 2023, reaching above 245 percent of GDP by 2030. This reflects rising age-related expenditures and gradual increases in the interest-growth differential. As one of the most important risks, the current favorable interest-growth differential hinges largely on domestic investors' home bias with high domestic saving, as well as large JGB purchases by the BoJ. This could be tested over time in the absence of a credible fiscal policy framework including a concrete medium-term fiscal consolidation plan.

9. Therefore, a well-specified fiscal framework is essential to anchor medium and long-term debt trajectory. As discussed in the main text, staff recommends maintaining a neutral fiscal stance in 2019 and 2020 and starting gradual adjustment from 2021 with annual consolidation of about 0.5 percent of GDP in the structural primary balance. This will stabilize public debt at the current level by 2030. Importantly, if accompanied by a comprehensive policy package with accelerated structural reforms, this will moderately bring down the debt-to-GDP ratio.

Japan: Gross Public Debt under Reform Scenarios

(In percent of GDP)



Sources: IMF staff estimates and projections.

Japan Public Sector Debt Sustainability Analysis (DSA) - Baseline Scenario

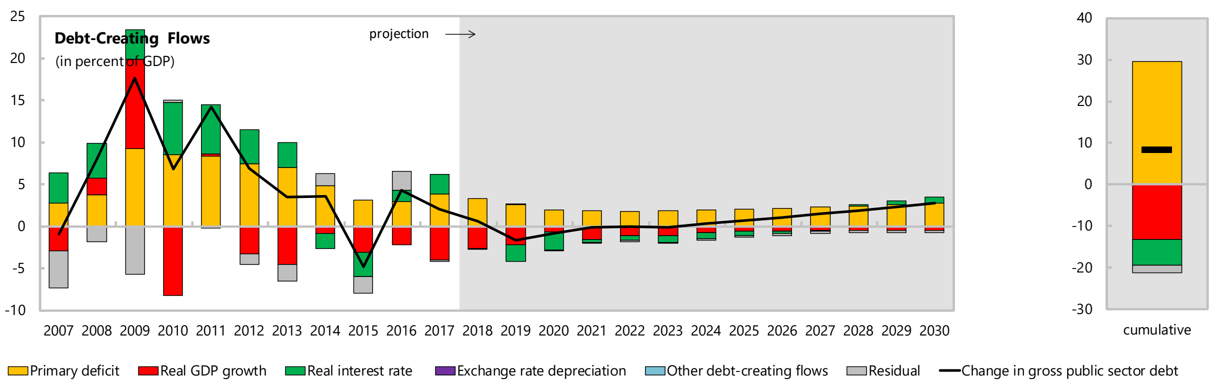
(in percent of GDP unless otherwise indicated)

Debt, Economic and Market Indicators [1/]

	Actual			Projections													As of October 23, 2018		
	2007-2015 [2/]	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Sovereign Spreads		
Nominal gross public debt	213.2	235.6	237.6	238.2	236.6	235.8	235.6	235.6	235.4	236	236.5	237.5	239.0	240.9	243.2	245.9	EMBIG (bp) 3/		-299
Public gross financing needs		53.5	52.0	49.0	47.1	48.3	45.9	44.6	44.9	44.8	45.5	44.6	42.9	44.2	44.4	46.2	5Y CDS (bp)		24
Net public debt	132.4	152.8	154.9	155.7	154.8	154.2	154.0	153.9	153.8	154.2	154.9	155.9	157.4	159.2	161.5	164.3			
Real GDP growth (in percent)	0.5	1.0	1.7	1.1	0.9	0.3	0.7	0.5	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	Ratings	Foreign	Local
Inflation (GDP deflator, in percent)	-0.3	0.3	-0.2	0.8	1.5	1.5	0.7	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Moody's	A1	A1
Nominal GDP growth (in percent)	0.1	1.2	1.5	1.9	2.4	1.8	1.4	1.3	1.4	1.3	1.2	1.2	1.2	1.2	1.2	1.2	S&Ps	A+u	A+u
Effective interest rate (in percent) [4/]	1.1	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.3	Fitch	A	A

Contribution to Changes in Public Debt

	Actual			Projections														
	2007-2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	cumulative	debt-stabilizing
Change in gross public sector debt	6.1	4.3	2.1	0.6	-1.6	-0.8	-0.2	0.0	-0.1	0.4	0.7	1.1	1.5	1.8	2.3	2.8	8.3	primary
Identified debt-creating flows	7.8	2.1	2.2	0.6	-1.6	-0.8	-0.1	0.1	-0.1	0.5	0.9	1.3	1.7	2.1	2.5	3.0	10.1	balance [9/]
Primary deficit	6.1	2.9	3.8	3.3	2.6	2.0	1.9	1.8	1.8	2.0	2.0	2.1	2.3	2.4	2.6	2.7	29.5	0.3
Primary (noninterest) revenue and gr	29.6	32.8	31.9	31.8	32.0	32.7	32.8	32.8	32.8	32.8	32.8	32.9	32.9	33.0	33.0	33.0	425.4	
Primary (noninterest) expenditure	35.7	35.8	35.7	35.2	34.6	34.7	34.6	34.5	34.6	34.8	34.9	35.0	35.2	35.4	35.6	35.8	454.9	
Automatic debt dynamics [5/]	1.7	-0.8	-1.6	-2.8	-4.2	-2.8	-1.9	-1.7	-1.9	-1.5	-1.1	-0.9	-0.6	-0.3	-0.1	0.3	-19.4	
Interest rate/growth differential [6/]	1.7	-0.8	-1.6	-2.8	-4.2	-2.8	-1.9	-1.7	-1.9	-1.5	-1.1	-0.9	-0.6	-0.3	-0.1	0.3	-19.4	
Of which: real interest rate	2.8	1.4	2.4	-0.1	-2.0	-2.1	-0.3	-0.6	-0.8	-0.7	-0.5	-0.3	-0.1	0.2	0.4	0.8	-6.3	
Of which: real GDP growth	-1.1	-2.2	-4.0	-2.7	-2.2	-0.7	-1.6	-1.1	-1.1	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-13.1	
Exchange rate depreciation [7/]	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Please specify (1) (e.g., drawdown o	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Please specify (2) (e.g., ESM and Eur	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Residual, including asset changes [8/]	-1.8	2.2	-0.1	0.0	0.0	0.0	-0.1	-0.2	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-1.8	



Source: IMF staff.

1/ Public sector is defined as general government.

2/ Based on available data.

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

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

5/ 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).

6/ 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.

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

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

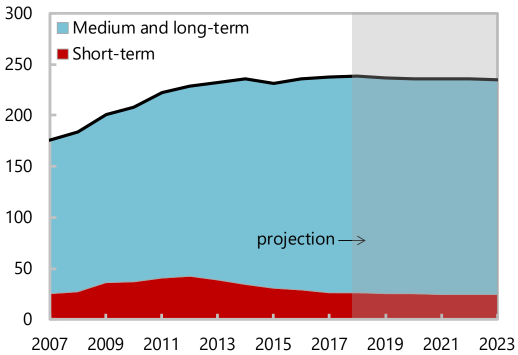
9/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year.

Japan Public DSA - Composition of Public Debt and Alternative Scenarios

Composition of Public Debt

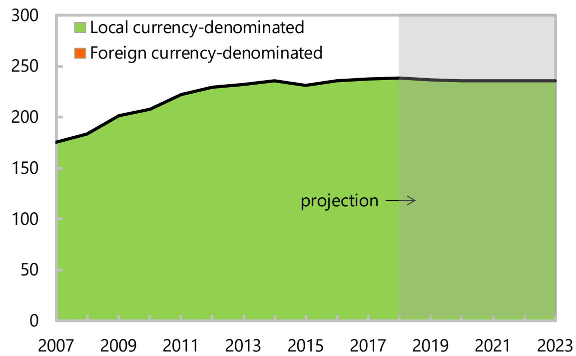
By Maturity

(in percent of GDP)



By Currency

(in percent of GDP)

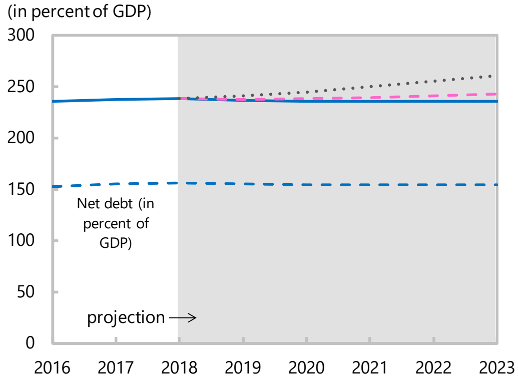


Alternative Scenarios

Baseline Historical Constant Primary Balance

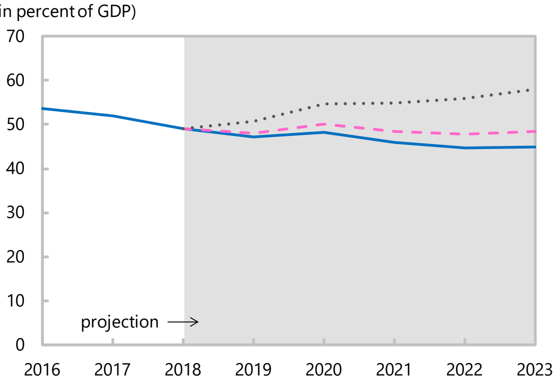
Gross Nominal Public Debt

(in percent of GDP)



Public Gross Financing Needs

(in percent of GDP)



Underlying Assumptions

(in percent)

Baseline Scenario	2018	2019	2020	2021	2022	2023
Real GDP growth	1.1	0.9	0.3	0.7	0.5	0.5
Inflation	0.8	1.5	1.5	0.7	0.8	1.0
Primary Balance	-3.3	-2.6	-2.0	-1.9	-1.8	-1.8
Effective interest rate	0.7	0.6	0.6	0.6	0.6	0.6
Constant Primary Balance Scenario						
Real GDP growth	1.1	0.9	0.3	0.7	0.5	0.5
Inflation	0.8	1.5	1.5	0.7	0.8	1.0
Primary Balance	-3.3	-3.3	-3.3	-3.3	-3.3	-3.3
Effective interest rate	0.7	0.6	0.6	0.6	0.6	0.6

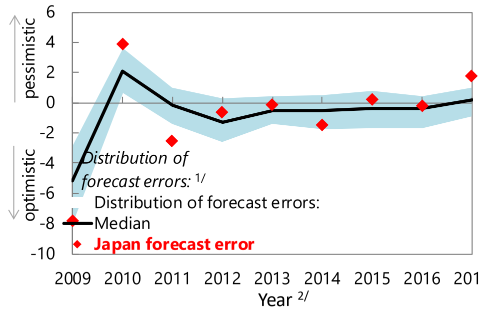
Historical Scenario	2018	2019	2020	2021	2022	2023
Real GDP growth	1.1	0.5	0.5	0.5	0.5	0.5
Inflation	0.8	1.5	1.5	0.7	0.8	1.0
Primary Balance	-3.3	-5.9	-5.9	-5.9	-5.9	-5.9
Effective interest rate	0.7	0.6	0.9	1.0	1.1	1.3

Source: IMF staff.

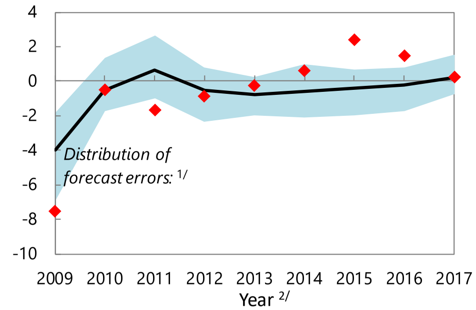
Japan Public DSA - Realism of Baseline Assumptions

Forecast Track Record, versus all countries

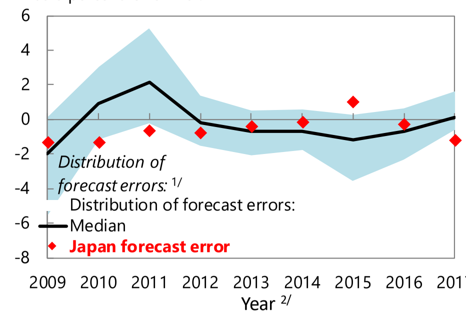
Real GDP Growth
(in percent, actual-projection)
Japan median forecast error, 2009-2017: **-0.23**
Has a percentile rank of: **55%**



Primary Balance
(in percent of GDP, actual-projection)
Japan median forecast error, 2009-2017: **-0.28**
Has a percentile rank of: **60%**

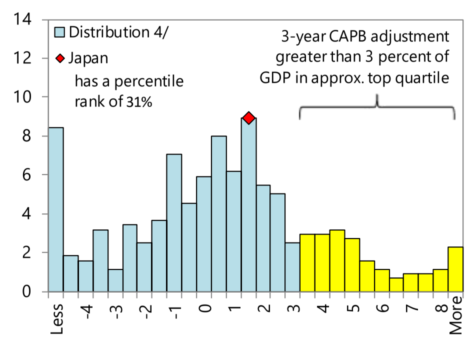


Inflation (Deflator)
(in percent, actual-projection)
Japan median forecast error, 2009-2017: **-0.64**
Has a percentile rank of: **36%**

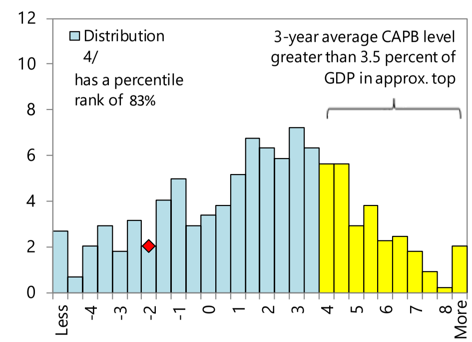


Assessing the Realism of Projected Fiscal Adjustment

3-Year Adjustment in Cyclically-Adjusted Primary Balance (CAPB)
(Percent of GDP)

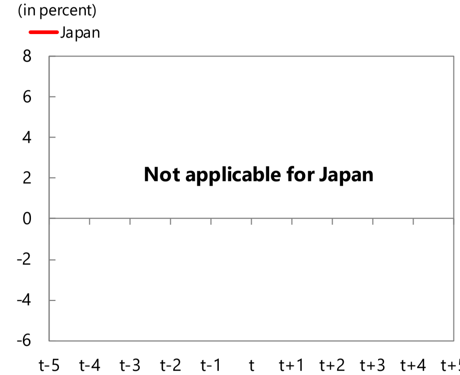


3-Year Average Level of Cyclically-Adjusted Primary Balance (CAPB)
(Percent of GDP)



Boom-Bust Analysis 3/

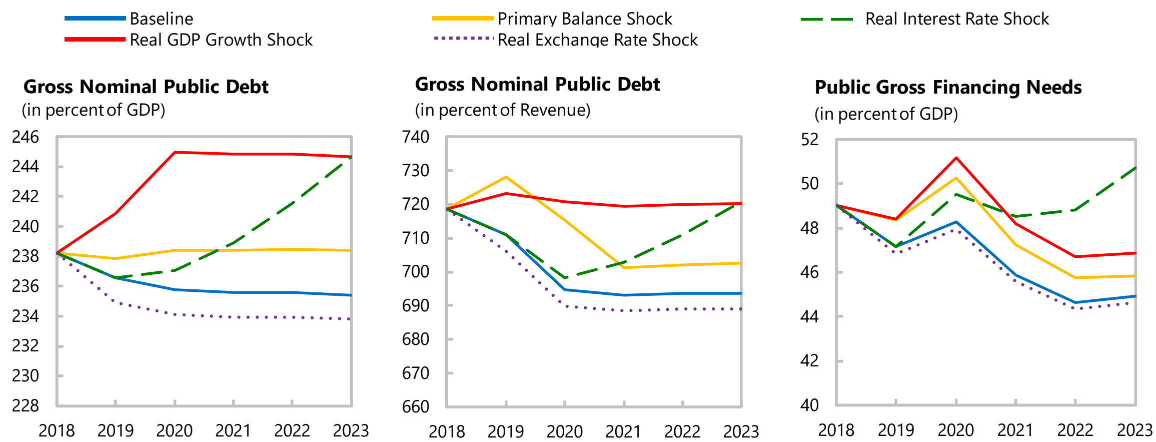
Real GDP growth
(in percent)



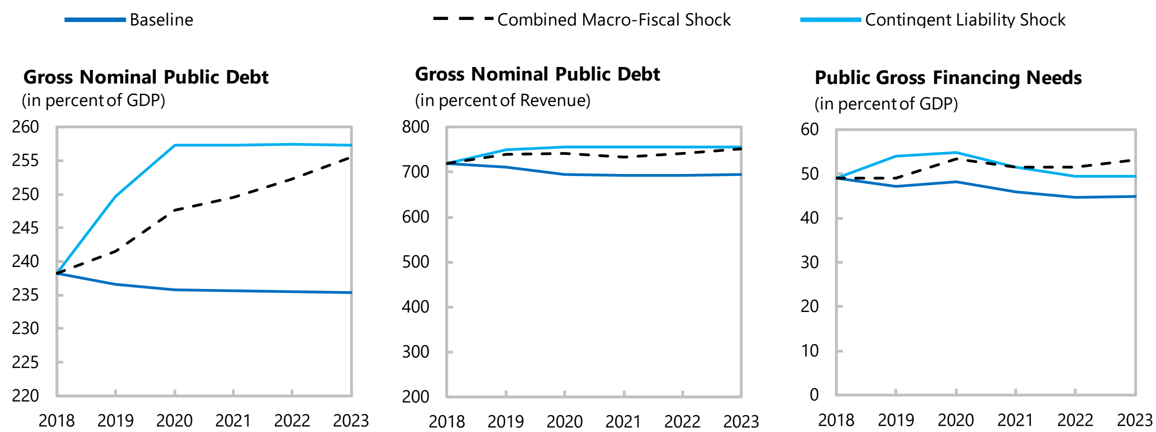
Source : IMF Staff.
1/ Plotted distribution includes all countries, percentile rank refers to all countries.
2/ Projections made in the spring WEO vintage of the preceding year.
3/ Not applicable for Japan, as it meets neither the positive output gap criterion nor the private credit growth criterion.
4/ Data cover annual obervations from 1990 to 2011 for advanced and emerging economies with debt greater than 60 percent of GDP. Percent of sample on vertical axis.

Japan Public DSA - Stress Tests

Macro-Fiscal Stress Tests



Additional Stress Tests



Underlying Assumptions

(in percent)

Primary Balance Shock	2018	2019	2020	2021	2022	2023
Real GDP growth	1.1	0.9	0.3	0.7	0.5	0.5
Inflation	0.8	1.5	1.5	0.7	0.8	1.0
Primary balance	-3.3	-3.8	-3.2	-1.9	-1.8	-1.8
Effective interest rate	0.7	0.6	0.6	0.7	0.6	0.6
Real Interest Rate Shock						
Real GDP growth	1.1	0.9	0.3	0.7	0.5	0.5
Inflation	0.8	1.5	1.5	0.7	0.8	1.0
Primary balance	-3.3	-2.6	-2.0	-1.9	-1.8	-1.8
Effective interest rate	0.7	0.6	1.1	1.4	1.7	1.9
Combined Shock						
Real GDP growth	1.1	-0.3	-1.0	0.7	0.5	0.5
Inflation	0.8	1.2	1.2	0.7	0.8	1.0
Primary balance	-3.3	-3.8	-3.7	-1.9	-1.8	-1.8
Effective interest rate	0.7	0.6	1.1	1.5	1.7	1.9

Real GDP Growth Shock	2018	2019	2020	2021	2022	2023
Real GDP growth	1.1	-0.3	-1.0	0.7	0.5	0.5
Inflation	0.8	1.2	1.2	0.7	0.8	1.0
Primary balance	-3.3	-3.1	-3.1	-1.9	-1.8	-1.8
Effective interest rate	0.7	0.6	0.6	0.6	0.6	0.6
Real Exchange Rate Shock						
Real GDP growth	1.1	0.9	0.3	0.7	0.5	0.5
Inflation	0.8	2.2	1.5	0.7	0.8	1.0
Primary balance	-3.3	-2.6	-2.0	-1.9	-1.8	-1.8
Effective interest rate	0.7	0.6	0.6	0.6	0.6	0.6
Contingent Liability Shock						
Real GDP growth	1.1	-1.6	-2.2	0.7	0.5	0.5
Inflation	0.8	0.8	0.9	0.7	0.8	1.0
Primary balance	-3.3	-8.0	-2.0	-1.9	-1.8	-1.8
Effective interest rate	0.7	0.6	0.8	0.7	0.7	0.7

Source: IMF staff.

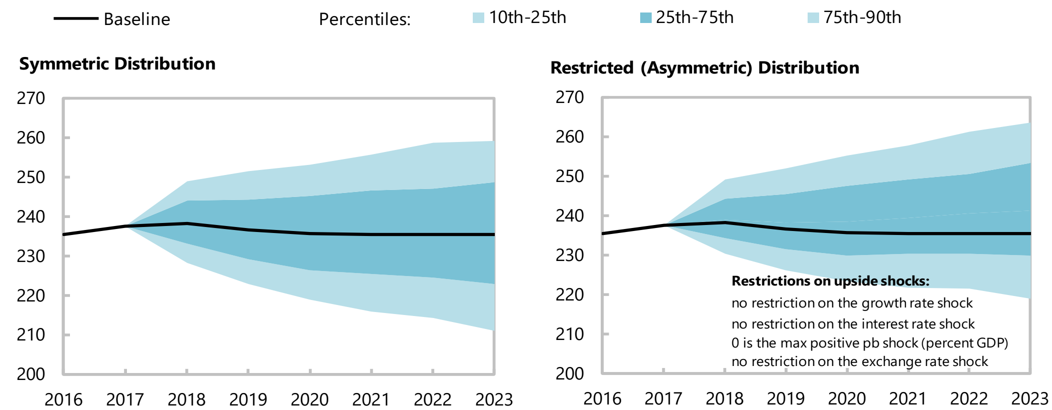
Japan Public DSA Risk Assessment

Heat Map

Debt level 1/	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability shock
Gross financing needs 2/	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability Shock
Debt profile 3/	Market Perception	External Financing Requirements	Change in the Share of Short-Term Debt	Public Debt Held by Non-Residents	Foreign Currency Debt

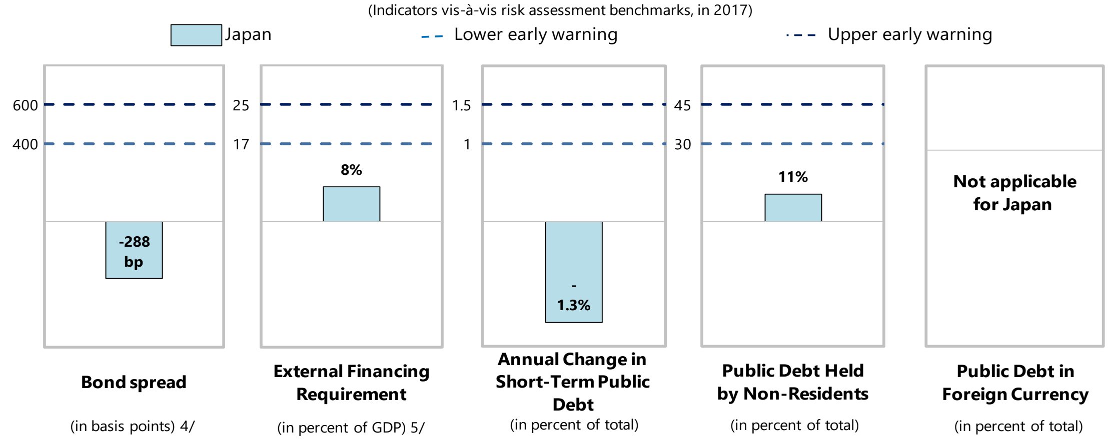
Evolution of Predictive Densities of Gross Nominal Public Debt

(in percent of GDP)



Debt Profile Vulnerabilities

(Indicators vis-à-vis risk assessment benchmarks, in 2017)



Source: IMF staff.

1/ The cell is highlighted in green if debt burden benchmark of 85% is not exceeded under the specific shock or baseline, yellow if exceeded under specific shock but not baseline, red if benchmark is exceeded under baseline, white if stress test is not relevant.

2/ The cell is highlighted in green if gross financing needs benchmark of 20% is not exceeded under the specific shock or baseline, yellow if exceeded under specific shock but not baseline, red if benchmark is exceeded under baseline, white if stress test is not relevant.

3/ The cell is highlighted in green if country value is less than the lower risk-assessment benchmark, red if country value exceeds the upper risk-assessment benchmark, yellow if country value is between the lower and upper risk-assessment benchmarks. If data are unavailable or indicator is not relevant, cell is white.
Lower and upper risk-assessment benchmarks are:

400 and 600 basis points for bond spreads; 17 and 25 percent of GDP for external financing requirement; 1 and 1.5 percent for change in the share of short-term debt; 30 and 45 percent for the public debt held by non-residents.

4/ Long-term bond spread over U.S. bonds, an average over the last 3 months, 25-Jul-18 through 23-Oct-18.

5/ External financing requirement is defined as the sum of current account deficit, amortization of medium and long-term total external debt, and short-term total external debt at the end of previous period.

Annex VI. Progress on 2017 FSAP Key Recommendations

Fund Recommendations	Time Frame[1]	Update on Progress
Cross-Cutting Issues		
Further raise corporate governance standards to bolster independence of board and oversight functions from senior management across banking and insurance sectors (JFSA).	NT	The JFSA published the revised Corporate Governance Code in June 2018, which requires that a company should appoint a sufficient number of independent directors (rather than just disclose a roadmap for doing so as in the previous version) if the company believes that it needs to appoint at least one-third of directors as independent directors based on a broad consideration of factors. The revised Corporate Governance Code also holds companies more accountable for cross-shareholdings by requiring them to annually assess whether or not to hold each individual cross-shareholding and disclose the results of the assessment. The revised Code requires that the board should appoint and dismiss a CEO through objective, timely and transparent procedures.
Further develop internal processes to support full risk-based supervision for banks, insurers, and securities firms (JFSA, SESC).	I	The JFSA finalized the revised JFSA's Supervisory Approaches in June 2018, moving from backward-looking, element-by-element compliance checks to a substantive, forward-looking, and holistic framework. To ensure an effective implementation of the new supervisory approaches, the JFSA is also enhancing its own governance and quality control of supervision, making effective use of feedbacks from outside the JFSA, and restructuring its internal organization, human resource policy, and IT infrastructure, according to the revised JFSA's Supervisory Approaches.
Consider enhancing independence of JFSA and BoJ in key supervisory issues (PM, MoF, JFSA, BoJ).	MT	Under consideration by the authorities.
Systemic Risks		
Develop own supervisory stress testing model for both solvency and liquidity risk analysis for banks, and for solvency risk analysis for insurers, as well as stress test large exposures periodically (JFSA).	NT	In its revised supervisory approaches published in June 2018, the JFSA stated that it will explore how to benefit better from supervisory stress tests with common scenarios (universal tests), with due regard to the possible unintended consequences from the use of common scenarios.
Continue conducting liquidity stress testing regularly for significant foreign currencies and require banks to hold sufficient counterbalancing capacity, particularly high-quality liquid assets (JFSA).	I	The JFSA stated in its "Providing Better Financial Services in the Era of Transition" published in September 2018 that it will promote securing stable foreign currency funding and enhancing foreign currency liquidity management in the three megabank groups.
Financial Sector Oversight		
Give JFSA the power to set capital requirements for banks based on specific risk profiles (Gov).	I	The authorities provided the following information: The JFSA continues to encourage the banks with soundness concern to improve management through the "Early Warning System" where the JFSA engages in deep dialogues regarding prospects and business models of specific banks. The JFSA will review the

[1] I-Immediate" is within one year; "NT-near-term" is 1–3 years; "MT-medium-term" is 3–5 years.

		Early Warning System to further improve its effectiveness. Also, the JFSA may, when it finds necessary, request a bank to submit an improvement plan for ensuring soundness in management of that bank, or order a change to the submitted improvement plan, or order other measures necessary for the purpose of supervision.
Take further steps to implement an economic-value-based solvency regime for insurers (JFSA).	NT	The JFSA plans to incorporate the idea of economic-value-based solvency assessment in its supervision and inspection, while working towards the introduction of economic-value-based solvency regulation in line with the development of the Insurance Capital Standard by the IAIS.
Introduce more specific periodic reporting requirements and more proactive investigations into related party transactions (JFSA).	I	The authorities provided the following information: The JFSA requires the approval when banks conduct the transaction with related party when arm's length rule may apply and there is no such approval during 2017. In addition, the JFSA imposes business scope restrictions on banking groups and prevents contamination of heterogeneous risks. Therefore, the effect of the related party transaction toward the soundness of bank business is limited and JFSA does not plan the current treatment.
Ensure robust supervision of the systemically important securities firms by ensuring access to sufficient number of experienced staff and onsite monitoring of overseas operations (JFSA, SESC).	I	The authorities provided the following information: The JFSA has been continuously monitoring the business governance, profit trend, and risk management for Japanese major securities firms in the timely manner through Securities Firms Monitoring Office (hereinafter "SFMO"). SFMO has the 14 staff for monitoring major securities firms, at the end of October, 2018. The staff has deep and wide knowledge and experience for monitoring securities firms, and all the staff has experience of supervision or inspection of securities firms. Also, with the overseas operation of major securities firms, SFMO carried out on-site visits to overseas offices 4 times in 2017 (New York, London (twice), Singapore), and 5 times in 2018 (New York (twice), London, Hong Kong SAR (twice)). Thus, JFSA conducts seamless monitoring regardless of domestic and overseas for Japanese major securities firms.
Enhance recovery plan further by including extreme stress scenarios while ensuring continuity of critical services and mitigating contagion risks through clearing members (JSCC).	I	The authorities provided the following information: The JSCC implemented replenishment regime of JSCC's Settlement Guarantee Reserve (i.e., Skin in the Game). Also, the JSCC documented its existing recovery arrangements as the enhanced "Recovery Plan based on PMFI" of JSCC as its internal rules. The JSCC implemented temporary utilization scheme of cash portion of clearing fund to cash settlement for listed products.
Address recovery planning issues on regulation for central counterparties (JFSA).	I	Under consideration by the authorities.
Macroprudential Policy		
Clarify the mandate of the Council for Cooperation on Financial Stability (JFSA, BoJ).	NT	The JFSA and BoJ have been holding bi-annual meetings of the Council for Cooperation on Financial Stability to exchange views on the current situation of the financial system and the market among senior

		officials, including the Commissioner of the JFSA and the Deputy Governor of the BoJ.
Consider proactively enhancing the macroprudential tool box, including sectoral tools (JFSA).	NT	The JFSA prefers to implement to contain potential systemic risk through microprudential approach, while introducing some macroprudential policies such as countercyclical buffers.
Continue to broaden and deepen the scope of systemic risk assessments (JFSA, BoJ).	NT	The JFSA has expanded the coverage of its intensive monitoring of stress testing exercise to some D-SIBs and other large banks in addition to Japanese G-SIBs (three megabanks) for systemic risk assessment.
Crisis Management, Resolution, and Financial Safety Nets		
Strengthen resolution framework by removing ambiguities in the choice of tools, introducing a statutory bail-in power, clarifying triggers to enable early entry into resolution, and ensure that the role for the courts does not hinder effective resolution (JFSA).	NT	The JFSA has made efforts to limit financial institutions' need for temporary public funding such as various work to improve financial institutions' resolvability.
Consider broadening the perimeter of institutions to establish loss-absorbing capacity (JFSA).	NT	The JFSA has expanded the scope of the requirements on Total Loss Absorbing Capacity (TLAC) to one D-SIB.
Encourage earlier prompt corrective action and provide a clearer path to resolution (JFSA).	NT	The authorities provided the following information: The JFSA continues to encourage the banks with soundness concern to improve management through the "Early Warning System" where the JFSA engages in deep dialogues regarding prospects and business models of specific banks. The JFSA will review the Early Warning System to further improve its effectiveness.
Enhance crisis preparedness and coordination via an interagency crisis management forum (MoF, Minister for FS, BoJ, JFSA, DICJ).	NT	The authorities provided the following information: The JFSA has been making efforts to enhance crisis management and inter-agency collaboration through regular monitoring practices including information-sharing between authorities.
Establish an orderly resolution regime, following international guidance, for central counterparties and other FMI operators (JFSA).	MT	Under consideration by the authorities.
Strengthen framework for the provision of emergency liquidity assistance and tighten preconditions for the use of temporary public funding in resolution (MoF, BoJ).	NT	Under consideration by the authorities.
Financial Intermediation		
Continue engaging with banks on implications of macroeconomic and demographic trends and take actions on a timely basis when viability concerns are identified for individual institutions (JFSA).	I	Based on the JFSA's "Providing Better Financial Services in the Era of Transition" published in September 2017, the JFSA has analyzed the actual state of the rapidly ageing society as well as circumstances and issues that the retiring and retired generations are facing, and published an interim report titled "Financial Services in the Aging Society" in July 2018. Moreover, the JFSA's "Providing Better Financial Services in the Era of Transition" published in September 2018, also stated that the JFSA will: • Appropriate planning and implementation of business strategies by managers and effective governance by the Board of Directors are essential for stable revenue base and long-term

		fiscal soundness, as well as better financial intermediation to increase productivities of regional companies and thus contribute to the development of the regional economy. • In building sustainable business models, it is important for management to work on these efforts with timeline in mind. • The JFSA will conduct on-site and off-site monitoring to secure long-term financial soundness of regional financial institutions into the future and urge those with serious problems to take early responses.
Encourage banks to evolve risk management practices in line with new business activities (JFSA).	NT	According to the JFSA's "Providing Better Financial Services in the Era of Transition" published in September 2018, the JFSA will continue the dialogue with banks for improving their risk management to maintain their financial soundness in both scenarios of continued low interest rate environment and rise of interest rates. Moreover, the JFSA will also promote prompt response of risk management to changes in global economy and financial market environment through utilizing stress tests in the three megabank groups.
Encourage regional and *Shinkin* banks to review measures such as cost reduction, consolidation, income diversification, and fee structures to address medium term profitability concerns (JFSA, Gov).	NT	According to the JFSA's "Providing Better Financial Services in the Era of Transition" published in September 2018, the JFSA will conduct on-site and off-site monitoring in an integrated manner to ensure soundness of regional financial institutions into the future. Specifically, the JFSA will urge the regional financial institutions with serious problems to take early responses.
Lower coverage of credit guarantees (SME Agency).	MT	Since April 2018, the coverage of credit guarantees to SMEs from Safety Net Program No. 5 was lowered from 100 percent to 80 percent, while a new Safety Net Guarantee program was established for the event of a substantive crisis with 100 percent guarantee.

Annex VII. Assessment of Japan's External Sector

<table>
<tr><th></th><th>Japan</th><th>Overall Assessment</th></tr>
<tr><td>Foreign asset and liability position and trajectory</td><td>Background. The net international investment position (NIIP) has remained at about 60 percent of GDP over 2013-17, with assets reaching 184 percent and liabilities reaching 124 percent in 2017. In the medium term the NIIP is projected to rise to about 77 percent with current account (CA) surpluses, before gradually stabilizing due to population aging.
Assessment. Vulnerabilities are limited (equity and direct investment comprise a rising share of liabilities, now at 36 percent of total). Assets are diversified geographically and by risk classes. The NIIP generated net annual investment income of 3.6 percent of GDP in 2017.</td><td rowspan="7">Overall Assessment:
The 2018 external position is projected to be broadly consistent with medium-term fundamentals and desirable policies.

A continued accommodative stance by the Bank of Japan is consistent with the objective of reflating the economy, and needs to be accompanied by bold structural reforms and a credible and specific medium-term fiscal consolidation plan to maintain an external position consistent with medium-term fundamentals.

Potential policy responses:
A more forceful and coordinated policy package is needed to raise growth and inflation in a sustainable manner. This includes structural measures to boost wages, increase labor supply, reduce labor market duality, enhance risk capital provision, reduce barriers to entry in some industries, and accelerate agricultural and professional services sector deregulation. Fiscal consolidation should proceed in a gradual manner anchored by a credible medium-term fiscal framework. These 'desirable' policies are expected to support growth, imports and prices, and maintain an external position in line with fundamentals over the medium term.</td></tr>
<tr><td>Current account</td><td>Background. In line with growing national savings, the CA surplus has risen since 2013, reaching 4 percent of GDP in 2017, driven mainly by an improvement in the trade balance which was largely underpinned by lower energy prices. In 2017, the CA surplus increased by 0.1 percent of GDP relative to 2016, due to an improvement in the income balance, as the fall in the goods balance was offset by a higher services balance. The CA surplus is expected to shrink in 2018 to 3.6 percent of GDP, reflecting smaller income and goods trade balances. Japan's CA is positive because of high corporate saving in excess of domestic investment opportunities, and a sizable income account owing to its large NFA position. The income balance continues to account for most of the current account surplus (90 percent in 2017 and over 95 percent in the first half of 2018).
Assessment. The 2017 CA assessment uses the EBA model, where the estimated cyclically-adjusted CA of 3.6 percent of GDP is adjusted upward by 0.1 percent to reflect temporary factors (elevated energy imports with the nuclear power plant shutdown). EBA estimates the 2017 cyclically-adjusted CA norm at 3.2 percent of GDP, with a standard error of 1.3 percent of GDP. Staff estimates a 2017 CA norm range between 1.9 and 4.5 percent of GDP. The underlying 2017 CA gap midpoint is therefore assessed to be 0.5 percent of GDP (with CA gap range between -0.8 and 1.8), delivering that the 2017 CA is in line with the CA level consistent with fundamentals and desirable policies. Using 2018 projections, the EBA model estimates the 2018 cyclically-adjusted CA norm at 3.3 percent of GDP, with a standard error of 1.2 percent of GDP. Staff estimates a 2018 CA norm range between 2.0 and 4.5 percent of GDP. The projected CA gap midpoint in 2018 is therefore assessed to be 0.2 percent of GDP (with CA gap range between -1.1 and 1.4), preliminarily delivering that the projected 2018 CA is in line with the CA level consistent with fundamentals and desirable policies. However, the large unexplained portion of the EBA CA gap suggests that important bottlenecks to investment and consumption remain.</td></tr>
<tr><td>CA Assessment:
2018 projections</td><td><table><tr><td>Projected CA</td><td>3.6</td><td>Cycl. Adj. CA</td><td>3.5</td><td>EBA CA Norm</td><td>3.3</td><td>EBA CA Gap</td><td>0.2</td><td>Staff Adj.</td><td>0.0</td><td>Staff CA Gap</td><td>0.2</td></tr></table></td></tr>
<tr><td>Real exchange rate</td><td>Background. After depreciating substantially during 2013-15, the average real effective exchange rate (REER) appreciated substantially during 2016. In 2017, the average REER weakened by 4.9 percent relative to 2016, reflecting a significant nominal yen depreciation at the end of 2016 related in part to rising global interest rates following the U.S. election. Estimates through September 2018, show that the REER has depreciated by 0.2 percent relative to the 2017 average while it has appreciated by 2.9 percent relative to end-2017.
Assessment. The EBA REER Index and Level models estimate the 2017 average REER to be 17-18 percent lower than the level consistent with fundamentals and desirable policies, mainly from a large unexplained residual. Because of absent Japan-specific factors in the model, less weight is given to the EBA REER models. Using the staff-assessed 2017 CA gap range as reference and a staff-estimated semi-elasticity of 0.14 yields an indicative range for the 2017 REER gap as -13 to 6 percent with a midpoint of -4 percent. Taking into consideration that this broad REER gap range is due to the low semi-elasticity, the 2017 REER is assessed as in line with the level consistent with fundamentals and desirable policies. Following a parallel method using the projected 2018 CA gap range, the 2018 REER is preliminary assessed as in line with the level consistent with fundamentals and desirable policies.</td></tr>
<tr><td>Capital and financial accounts: flows and policy measures</td><td>Background. Portfolio outflows continued during most of 2017 – though at a slower pace than in 2016 – as institutional investors continued to diversify overseas and FDI outflows continued. Net short yen positions have prevailed since Q2 2017, but after end-March net positions are balanced.
Assessment. Vulnerabilities are limited (inward investment tends to be equity-based and home bias of Japanese investors remains strong). So far there have been no large spillovers from Yield Curve Control to financial conditions in other economies (interest rates, credit growth). If outflows from Japan accelerate, they could provide an offset to tighter domestic financial conditions in the region due to normalization of policy rates in other advanced economies.</td></tr>
<tr><td>FX intervention and reserves level</td><td>Background. Reserves are about 25 percent of GDP, on legacy accumulation. There has been no FX intervention in recent years.
Assessment. The exchange rate is free floating. Interventions are isolated (last in 2011) to reduce short-term volatility and disorderly exchange rate movements.</td></tr>
<tr><td>Technical Background Notes</td><td></td></tr>
</table>

INTERNATIONAL MONETARY FUND

JAPAN

November 6, 2018

STAFF REPORT FOR THE 2018 ARTICLE IV CONSULTATION—INFORMATIONAL ANNEX

Prepared By	Asia and Pacific Department (In consultation with other departments)

CONTENTS

FUND RELATIONS

(As of September 30, 2018)

Membership Status: Joined: August 13, 1952; Article VIII

General Resources Account:

	SDR Million	Percent Quota
Quota	30,820.50	100.00
IMF's Holdings of Currency (Holdings Rate)	26,505.84	86.00
Reserve Tranche Position	4,315.32	14.00
Lending to the Fund		
New Arrangements to Borrow	3,414.07	

SDR Department:

	SDR Million	Percent Allocation
Net cumulative allocation	12,284.97	100.00
Holdings	13,423.80	109.27

Outstanding Purchases and Loans: None

Latest Financial Arrangements:

Type	Date of Arrangement	Expiration Date	Amount Approved (SDR Millions)	Amount Drawn (SDR Millions)
Stand-By	Mar 11, 1964	Mar 10, 1965	305.00	0.00
Stand-By	Jan 19, 1962	Jan 18, 1963	305.00	0.00

Overdue Obligations and Projected Payments to Fund [1]

(SDR Million; based on existing use of resources and present holdings of SDRs):

	Forthcoming				
	2018	**2019**	**2020**	**2021**	**2022**
Principal					
Charges/Interest		**0.20**	**0.20**	**0.20**	**0.20**
Total		**0.20**	**0.20**	**0.20**	**0.20**

[1] When a member has overdue financial obligations outstanding for more than three months, the amount of such arrears will be shown in this section.

Exchange Arrangement:

Japan maintains a free floating exchange rate regime. There has been no foreign exchange intervention in recent years (last in 2011). The ministry of finance publishes foreign exchange intervention information on its website. The exchange system is free of restrictions on the making of payments and transfers for current international transactions, with the exceptions of restrictions imposed solely for the preservation of national or international security that have been notified to the Fund pursuant to Executive Board Decision No. 144–(52/51).

Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) Framework:

Japan underwent an assessment of its AML/CFT framework against the AML/CFT standard by the Financial Action Task Force (FATF) and the Asia/Pacific Group (APG) in 2008. Significant deficiencies were identified, notably with respect to customer due diligence (CDD) requirements, transparency of legal entities, the criminalization of terrorist financing and the freezing of terrorist assets. Since the 2014 Article IV mission, Japan has made significant progress in its commitment to strengthening its AML/CFT legal framework through the FATF standards, notably by enacting the Amendment Act on Prevention of Transfer of Criminal Proceeds, the Act to Amend the Terrorism Financing Act, and the Terrorist Assets Freezing Act. Japan will continue to be monitored by the FATF on its progress including the issuance of subsidiary legislations to implement the enacted Acts.

Article IV Consultation:

The 2017 Article IV consultation discussions were held during June 6–20, 2017; the Executive Board discussed the Staff Report (IMF Country Report No. 17/242) and concluded the consultation on July 26, 2017. The concluding statement, staff report, selected issues paper, and press release were all published.

FSAP:

A mandatory FSAP has been conducted in time for the 2017 Article IV consultation, in line with the five-year cycle for members or members' territories with financial sectors that are determined to be systemically important pursuant to Decision No. 15495-(13/111), adopted December 6, 2013. The Financial System Stability Assessment (FSSA) report for the 2017 assessment has been published (Country Report No.17/244) and is available on the web at: https://www.imf.org/en/Publications/CR/Issues/2017/07/31/Japan-Financial-System-Stability-Assessment-45151.

Technical Assistance: None

Resident Representatives: None

STATISTICAL ISSUES

Economic and financial data provided to the Fund are considered adequate for surveillance purposes. Since April 2016, Japan has adhered to the Special Data Dissemination Standard (SDDS) Plus and it meets the SDDS Plus specifications for the coverage, periodicity, and timeliness of data. Japan is also progressing in the implementation of the G-20 Data Gaps Initiative (DGI-2) recommendations. It started reporting quarterly General Government Gross Debt data in April 2018. Plans are to disseminate General Government Operations in line with the SDDS Plus by 2021 and to report the global Security Financial Transactions data to the Financial Stability Board by end-2018. Japan has committed to address the limited data availability to compile Securities Statistics and sectoral accounts. The last mission on the Observance of Standards and Codes (data ROSC) took place in 2005 with a report published in March 2006 (available at https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Japan-Report-on-the-Observance-of-Standards-and-Codes-ROSC-Data-Module-19054). “

Japan: Table of Common Indicators Required for Surveillance (as of October 19, 2018)					
	Date of Latest Observation	Date Received	Frequency of Data[6]	Frequency of Reporting[6]	Frequency of Publication[6]
Exchange Rates	Oct. 2018	Oct. 2018	D	D	D
International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1]	Sept. 2018	Oct. 2018	M	M	M
Reserve/Base Money	Sept. 2018	Oct. 2018	M	M	M
Broad Money	Sept. 2018	Oct. 2018	M	M	M
International Investment Position	2018Q2	Sept. 2018	Q	Q	Q
Central Bank Balance Sheet	10/10/2018	10/12/2018	Every 10 days	Every 10 days	Every 10 days
Consolidated Balance Sheet of the Banking System	Aug. 2018	Oct. 2018	M	M	M
Interest Rates[2]	Oct. 2018	Oct. 2018	D	D	D
Consumer Price Index	Sept. 2018	Oct. 2018	M	M	M
Revenue, Expenditure, Balance and Composition of Financing[3] – General Government[4]	2016	Jan.2018	A	A	A
Revenue, Expenditure, Balance and Composition of Financing[3] – Central Government	2016	Jan. 2018	A	A	A
Stocks of Central Government and Central Government-Guaranteed Debt[5]	2018Q2	Aug. 2018	Q	Q	Q
External Current Account Balance	Aug. 2018	Oct. 2018	M	M	M
Exports and Imports of Goods and Services	Aug. 2018	Oct. 2018	M	M	M
GDP/GNP	2018Q2	Sept. 2018	Q	Q	Q
Gross External Debt	2018Q2	Sept. 2018	Q	Q	Q

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

Statement by the IMF Staff Representative
November 21, 2018

This statement contains information that has become available since the staff report was circulated to the Executive Board. This information does not alter the thrust of the staff appraisal.

1. **On November 14, Japan's Cabinet Office released its preliminary estimate of real GDP growth for the third quarter (July–September) at -1.2 percent (annualized), down from 3.0 percent in the second quarter.** The decline in GDP can be attributed largely to several natural disasters affecting Japan, including typhoons in the Osaka area, and an earthquake in Hokkaido. With protracted closures of several important shipment hubs, the typhoon disrupted supply chains, affecting both private investment and exports. Private consumption also contracted, due partly to a disaster-driven surge in fresh food prices. On December 10 the revised preliminary estimate for third quarter growth will be released. Headline CPI inflation continues to increase gradually, recording 1.2 percent (year-on-year) in September, supported by energy and food prices. However, price pressures from domestic demand remain subdued, with core CPI inflation (excluding fresh food and energy) remaining flat at 0.4 percent.

2. **Responding to the string of natural disasters, Japan's Diet passed a supplementary budget on November 7.** This supplementary budget amounts to ¥0.9 trillion (about 0.2 percent of GDP), most of which will be allocated for disaster recovery expenditure. Staff expects that the supplementary budget will have an effect next year, supporting 2019 growth.

3. **After declining in the second quarter, the external current account (CA) surplus recovered in the third quarter**, with a balance (about US$50 billion) equal to the average CA balance over the first half of 2018. The main driver was a larger income balance, due to lower income debits. Meanwhile the trade balance turned to deficit, mostly due to increased goods imports and lower exports—the latter caused by the typhoon-related closure of Kansai International Airport and the Hokkaido earthquake that together disrupted export and tourism receipts. The yen has appreciated (in real effective terms) by almost 2 percent as of September 2018, relative to end-2017. Since the beginning of 2018, equity markets have fallen by 4.2 percent, and the 10-year government bond yield has increased by 7 basis points to 0.11 percent.

4. **Japan has expanded its trade agreements.** On November 6, Japan's Cabinet submitted legislation to the Diet that would ratify a free trade agreement with the European Union, aiming to bring the pact into force by February 1, 2019. The agreement would create a bloc covering about 28 percent of global GDP. Further, on October 31, Australia became the sixth country, after Japan, Mexico, Singapore, New Zealand and Canada, to ratify the terms of the eleven-nation Comprehensive and Progressive Agreement for Trans-Pacific Partnership. As a result, the Agreement will come into force on December 30.

Statement by Masaaki Kaizuka, Executive Director for Japan, Yoshihito Saito, Senior Alternate Executive Director, and Norihiro Komura, Advisor to the Executive Director
November 21, 2018

1. We appreciate a set of excellent papers, including Selected Issues, based on fruitful policy discussions between staff led by the Managing Director herself and the Japanese authorities during the Article IV Consultation this year.

2. **The 2018 Article IV Consultation focuses on the macroeconomic effects of demographic changes on the Japanese economy.** The authorities recognize that an aging and shrinking population, which can be called "a national challenge," is the most important challenge for Japan. Thus, we highly appreciate that staff analyzes the effects in the staff reports, including Selected Issues which covers and digs into a wide range of topics related to demographic changes. While we cannot touch all of them in this statement, every valuable work by the team surely helps us to tackle the challenge.

3. **The authorities will further accelerate various reforms to ease medium- and long-term constraints on economic growth from demographic changes under the current favorable environment created by Abenomics.** The government of Japan (GOJ) shows their main policies in *Basic Policy on Economic and Fiscal Management and Reform* every year. As we elaborate on it in detail later, this year the *Basic Policy on Economic and Fiscal Management and Reform 2018 (Basic Policy 2018)* centered on demographic changes and specified a set of reform agenda with the subtitle of "Realizing Sustainable Economic Growth by Overcoming the Decreasing Birth Rate and Aging Population." As this *Basic Policy 2018* clearly shows, we broadly share staff's recommendations, including mutually-supported policies, and steady implementation of structural reforms, especially labor market reforms, to boost productivity and raise potential growth under demographic changes.

Recent Developments, Outlook, and Risks

4. **The Japanese economy has improved moderately but on a continuous basis over a long period. The fruits of the economic recovery have been brought to a full range of society.** The authorities have conducted Abenomics which consists of "three arrows," aggressive monetary policy, flexible fiscal policy, and growth strategy including structural reform. Abenomics over the past six years has significantly improved the Japanese economy. The economy has expanded moderately but on a continuous basis over a long period, which would be the second longest since World War II. Against this backdrop, the fruits of the economic expansion have been brought to a full range of society. Corporate profits have achieved a historical record high. Expansion in the corporate sector has spread to the household sector as improvements in employment and income conditions clearly demonstrate. For example, the active job openings-to-applicants ratio has reached a 44-year record- high level and have exceeded one in every

prefecture for two years, and the unemployment rate hit a record 25-year low, 2.3%. Labor force participation rate of female (15-64 years old) and older workers have increased and reached at 69.4% and 23.5%, respectively.

5. **The economy continues on an expanding trend.** The (first preliminary) quarterly estimates of real growth rate for July – September 2018 marked -0.3% (quarter-to-quarter). The negative figures are attributed to a temporary drop of private consumption and decline in exports by the several natural disasters in this period. Thus, the GOJ considers that the economy continues on a steadily growing trend.

6. **The authorities will keep monitoring risks for the Japanese economy.** In particular, external risks, including trade tensions, developments of the Chinese economy, vulnerabilities in Emerging Markets, and geopolitical tensions, call for continued attention. In addition, as we mention below, the authorities well recognize the importance of taking all possible measures to contain demand fluctuations caused by the consumption tax rate hike from 8% to 10% to stabilize the economy.

Policy Mix

7. **We share the staff's view on the importance of mutually-supportive policies. Abenomics has brought in certain fruits mentioned above by conducting mutually-supportive monetary policy, fiscal policy, and structural reforms.** The authorities will strengthen and accelerate Abenomics, including growth strategy and structural reforms, taking into consideration complementarities and synergies among policies.

Growth Strategy and Structural Reforms

8. **Growth strategy, including structural reforms, is the central part of Abenomics. The GOJ has speedily implemented many structural reforms, including "bedrock regulation" reforms.** Staff assesses that gaps remain and implementation has been slow while the GOJ has appropriately specified reform areas. The GOJ has conducted a wide range of important reforms, including the "work-style reform," greater labor participation of female and older workers, acceptance of highly-skilled foreign professionals, corporate governance reforms, and trade liberalization and FDI promotion under the current administration. Thus, the GOJ does not think implementation has been slow while it will further accelerate structural reforms going forward.

9. **At the same time, structural reforms are still halfway. The GOJ will further promote structural reforms to boost productivity and raise potential growth for mitigating constraints on economic growth from demographic changes. Furthermore, the fruits of the economic recovery have been brought to a full range of society.** The Box.3 quantifies macroeconomic effects of demographic changes on the

economy and examines whether and how structural reforms can mitigate those effects. The results clearly illustrate the importance of full implementation of structural reforms, especially labor market reforms. As we mentioned above, the GOJ specified a set of reform agenda in the *Basic Policy 2018* with the subtitle of "Realizing Sustainable Economic Growth by Overcoming the Decreasing Birth Rate and Aging Population" as well as the *Growth Strategy 2018* in this June. While we explain the specific reform agenda in the next three paragraphs, their basic concept is the followings: Under the adverse demographic changes, reforms to strengthen the supply side are the most critical to raise potential growth by reducing constraints on economic growth. On the labor force, the GOJ will promote investment in human resources by greater labor participation of female and older workers and free early childhood education ("human resources development revolution"). On the productivity, the GOJ will take measures to enhance productivity, including promotion of AI and robots which the Selected Issues mentions, and strengthening corporate-governance ("realization and expansion of Supply System Innovation"). The work-style reform remains essential. Moreover, it is imperative to spread the fruits of economic growth from urban to rural, and from large companies to SMEs.

10. **In particular, as staff gives them a top priority, labor market reforms are critically important. The GOJ will implement necessary reforms steadily.** First and foremost, the GOJ continues to promote the "work-style reform." The *Work Style Reform Bills* have been enacted in this June. Those bills include several clauses to rectify problems of work-style and labor market in Japan, including the establishment of a limit on overtime work with introduction of penalty in case of breach and the elimination of the irrational gap of the working conditions between regular and non- regular workers ("equal pay for equal work"). The GOJ will ensure effective implementation of the bills, for example, by developing a guideline and takes note the staff's other recommendations, such as strengthening a training to non-regular workers and introducing job descriptions, which would complement the bills. The GOJ will make continuous efforts to enhance labor supply of female and older workers based on the *Basic Policy 2018.*

11. **The GOJ will continue to implement product market and corporate reforms, which are staff's second priority.** As we mentioned above, the GOJ will take measures to enhance productivity. Specifically, their priority areas include promoting the use of new technologies, such as AI, robots, and IoT, supporting smooth business successions, developing a guidance for corporate governance, and promoting the Regulatory Sandboxes System.

12. **The GOJ will further promote open and rule-based, multilateral trade and investment system, which is in line with staff's third priority.** Keeping and improving the trade system based on free and fair rules are the source of growth for the global economy. As Japan achieved rapid economic growth through free trade after WWII, the GOJ commits to take a leading role to promote free and fair rules of trade

and investment. In this regard, by proceeding with negotiations in mega agreements, including TPP11, Japan-EU EPA, and RECEP, the GOJ contributes to expand open and rule-based market in the global economy. TPP11 is scheduled to enter in force in this December, and Japan and EU reached an agreement in principle for Japan-EU EPA in this July.

Fiscal policy

13. **The GOJ firmly maintains the basic principle "without economic revitalization, there can be no fiscal consolidation," under the *New Plan to Advance Economic and Fiscal Revitalization* formulated in this June. The GOJ will accelerate and expand the three pillars reform, overcoming deflation and revitalizing the economy, expenditure reforms, and revenue reforms.**

14. **For fiscal consolidation, the GOJ aimed to achieve the primary surplus of the central and local governments by FY 2020 and steady reduction on the debt to GDP ratio under the *Plan to Advance Economic and Fiscal Revitalization* developed in 2015.** On the expenditures side, the GOJ formulated budgets in line with the benchmarks for general expenditures as set in the plan. On the revenue side, it is expected that central and local tax revenue for FY 2018 would record at high levels. However, improvements of the primary balance have been delayed compared to the initial assumptions because of a more moderate growth of tax revenues, as well as the impact of the postponement of the consumption tax rate from 8% to 10%. In addition, the GOJ decided to change the use of revenues from the consumption tax rate hike to preserve stable financial resources for the “human resources development revolution” mentioned above. Against this backdrop, it became difficult to achieve the target of the primary surplus by FY 2020. Also, while the rise in the public debt to GDP ratio has been moderate, it has not yet reached the point of steady reduction.

15. **Therefore, based on the developments mentioned above, the GOJ now aims for the primary surplus of the central and local governments by FY 2025 which would be more realistic while firmly maintaining the aim to achieve steady reduction on the debt to GDP ratio under the *New Plan to Advance Economic and Fiscal Revitalization* formulated in this June. To achieve the new fiscal consolidation target, the GOJ considers it imperative to put social security reforms as a center of consideration.** In this vein, staff emphasizes the importance of specification of fiscal consolidation measures to enhance the credibility of the target. In this regard, the GOJ will comprehensively review progress focusing mainly on the social security reforms in FY 2020 and specify policy measures in social security, including modalities to balance between benefits and burdens. It should be noted that the GOJ will start to take actions, including scheduling and implementation of reforms, within FY 2019 – FY 2021. Related to this point, we appreciate staff’s helpful work on the financing options for age-related expenditures and reform options for health care system.

Regarding the credibility of the fiscal consolidation target, we agree with staff on the importance of realistic macro-fiscal projections. However, the current framework can deliver them via the Council on Economic and Fiscal Policy (CEFP) and the Fiscal System Council (FSC) without making an independent fiscal institution. Following input from CEFP, the GOJ revised *Economic and Fiscal Projections for Medium to Long Term Analysis* in this January with more realistic assumptions based on the previous economic performances.

16. **The consumption tax rate is scheduled to be increased from 8% to 10% on October 1, 2019 as stipulated by law. Based on our previous experience with the 3% consumption tax rate increase in 2014, we will mobilize a wide range of measures and make every effort to contain demand fluctuations before and after the tax rate increase, along with supports for low-income households. To this end, the GOJ will take temporal and special measures in the initial budgets for FY 2019 and FY 2020.** The consumption tax rate hike is necessary to preserve stable financing sources for establishing a social security system for all generations. The GOJ has already announced the introduction of reduced tax rate, the enhanced relief of long-term care insurance premiums for the low-income elderly, and the provision of supporting benefits for pensioners to ease low-income households' burden, as well as the provision of greater supports for child-rearing generations by modifying use of the revenues generated by the consumption tax rate hike. Furthermore, while the upcoming hike is 2% which is smaller than the last one, the GOJ will take adequate measures to contain demand fluctuation before and after the tax increase. Related to this point, the GOJ will take tax and budgetary measures to create advantages for purchases of consumer durable goods, including automobiles and housing, after October 1, 2019. The staff report pointed out that mitigating measures are yet to be fully specified. The GOJ will take temporary and special measures in the initial budgets for FY 2019 and FY 2020. Because the GOJ usually decides the Draft of initial budget in December each year, the GOJ will specify and show specific mitigating measures for FY 2019 soon. In addition, while staff mentions that our growth projections do not provide guidance on the size of mitigating measures to offset the impacts of consumption tax rate increases, specific size and items of mitigating measures will be determined in the process of formulating budgets. Finally, as staff recommends, the GOJ will clearly communicate with public on the necessity of the consumption tax rate hike and mitigating measures.

Monetary Policy

17. **With a view to persistently continuing with powerful monetary easing, the Bank of Japan decided to strengthen its commitment to achieving the price stability target by introducing forward guidance for policy rates, and to enhance the sustainability of "Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control" in this July.** Specifically, as a forward guidance for policy rates, the BOJ publicly made clear to maintain the current extremely low levels of

short- and long-term interest rates for an extended period of time, taking into account uncertainties regarding economic activity and prices including the effects of the consumption tax hike scheduled to take place in October 2019. In addition, the BOJ decided to conduct market operations and asset purchases in a more flexible manner in order to enhance the sustainability of QQE with Yield Curve Control. For example, while the target level of the long-term yields was maintained at around zero percent, the BOJ made it clear that the actual yields might move upward and downward to some extent mainly depending on developments in economic activity and prices. The policy is in line with staff's recommendation that monetary policy should remain accommodative while putting a premium on policy sustainability. In fact, since the policy decision was made, the degree of market functioning has improved with the BOJ conducting JGB purchases in a flexible manner.

18. **The BOJ will continue with QQE with Yield Curve Control, aiming to achieve the price stability target of 2 percent, as long as it is necessary for maintaining that target in a stable manner.** The BOJ will examine the risks considered most relevant to the conduct of monetary policy and conduct its policy in an appropriate manner, taking account of developments in economic activity and prices as well as financial conditions.

Financial Sector

19. **We welcome that staff finds that Japan' financial sector remains stable. The authorities will closely monitor financial risks while continuously improving supervisory approaches. Related to this point, we would like to emphasize that progress in implementation of FSAP recommendations including on macroprudential policies and resolution has been made.** Although staff mentions that "implementation of other main FSAP recommendations – particularly on macroprudential policies and resolution – is incomplete" in paragraph 5, we reiterate that progress in macroprudential policies and resolution has been made based on the FSAP recommendations as mentioned in paragraph 28. For example, the authorities have expanded the coverage of their intensive monitoring of stress testing exercise to some D-SIBs and other large banks in addition to Japanese G-SIBs (three megabanks) for systemic risk assessment and expanded the scope of the requirements on Total Loss Absorbing Capacity (TLAC) requirement to one D-SIB.

20. **As staff appropriately points out, financial institutions, especially regional financial institutions, need to improve their financial services considering changes in its surrounding environment.** The environment has been significantly changing due to acceleration of digitalization, demographic changes, and prolonged low-interest rate. Financial institutions should improve their financial services suited to these changes. To support their efforts, the JFSA set the priorities such as responding to the acceleration of digitalization, promoting long-term personal asset building, vitalizing capital market and securing market integrity and transparency, and securing effective

financial intermediation and financial stability. For regional financial institutions, the JFSA has formed and sent experts teams to local finance bureau to better capture regional economies through deep dialogues with regional financial institutions and to improve financial intermediation function.

External Sector

21. **Reducing excess global imbalances is critical to sustain the global economic growth.** It is important for the Fund to continuously refine EBA methodology, which is a multilateral monitoring tool to assess individual countries' CA balances. In this regard, we welcome efforts on EBA methodological update this year.

22. **We agree with staff's assessment that the 2017 CA balance and the projected 2018 CA balance are broadly in line with fundamentals and desired polies, as well as related policy recommendations.** As we have mentioned above, the authorities will promote fiscal consolidation as well as structural reforms, including labor market reforms. We welcome the fact that staff does not apply the adjustor related to increased energy imports due to shut downs of nuclear power reactors for the preliminary 2018 CA external assessment. Also, we highly appreciate candid and close dialogue between staff and the authorities for the Article IV Consultation as well as the EBA methodological update.

23. **The authorities are still concerned about REER assessment using the CA gap calculated from the EBA methodology.** First of all, exchange rates are determined by capital transactions rather than trade balance. Given the sensitiveness of capital transactions to interest rate differentials, it is extremely difficult to identify the appropriate level of REER. Linking CA assessment with REER assessment automatically causes a more fundamental problem especially in a country where income balance dominates in CA balances. Furthermore, developments of global value chains have also weakened the linkage between trade balance and REER.

    Being mindful of these limitations, the Fund should not pursue to identify the appropriate level of REER for free-floating currencies, especially in the case of income balances dominating in CA balances, like Japanese yen. Instead of identifying the appropriate level of REER, we consider that the EBA should be used to identify the appropriate level of CA, find out structural problems which contribute to CA gaps, and recommend structural policies to solve them. We would like to continue discussions on this point.

Supply-Side of Corruption

24. **The GOJ acknowledges the importance of supply-side issues to address corruption. Therefore, they decided to volunteer to have its legal and institutional framework assessed in the Article IV Consultation.** Japan becomes the first case of this initiative, together with the United Kingdom which was discussed earlier this week. The OECD

Phase 3 recommendations in the OECD Working Group on Bribery pointed out several points regarding enforcement of foreign bribery offences. The GOJ has steadily implemented the above recommendations as the staff report shows.