

## ANALYSIS

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## Japan Outlook: Challenges Ahead

### Introduction

Japan's growth engine shifted into a lower gear in 2018 following above-trend GDP growth in 2017. After an export-led expansion in 2017, rising global risks brought the Japanese economy back to reality. A good proportion of the slowdown domestically was due to deteriorating external conditions. Global growth cooled in 2018 because of slowing world trade, capacity constraints, and some tightening in financial conditions. Because of the trade war between China and the U.S., export growth from Japan slowed materially on the back of lower regional demand.

# Japan Outlook: Challenges Ahead

BY FARAZ SYED

Japan's growth engine shifted into a lower gear in 2018 following above-trend GDP growth in 2017. After an export-led expansion in 2017, rising global risks brought the Japanese economy back to reality. A good proportion of the slowdown domestically was due to deteriorating external conditions. Global growth cooled in 2018 because of slowing world trade, capacity constraints, and some tightening in financial conditions. Because of the trade war between China and the U.S., export growth from Japan slowed materially on the back of lower regional demand.

Overall, GDP growth slowed to 0.8% in 2018 after a 1.6% rise in 2017. The economy was also hampered by adverse weather and natural disasters, which caused supply disruptions. These included a typhoon, severe flooding, and a 6.6 earthquake that hit Hokkaido in the second half of last year. Given that potential GDP growth is 0.5% to 1%, overall growth last year was not as bad as initially feared.

While net exports contributed positively to growth in 2017, they provided a negligible contribution to growth in 2018 because of the slowdown in global trade. The economy was buttressed by private demand, namely consumption and business investment. Consumption rose on the back of solid labour market gains; the economy added 1.34 million jobs in 2018 after adding 650,000 jobs in 2017. Business investment rose in 2018 following the increased demand for manufactured goods in 2017.

Uncertainty clouds the outlook for 2019, and risks are tilted to the downside.

First, consumption is expected to be volatile. The tax hike scheduled for October means consumers, if they repeat history, will front-load purchases in the September quarter, and this will be followed by a sharp slowdown in the fourth stanza. The Shinzo Abe-led government has pledged to use part

of the tax collections for fiscal stimulus. Therefore, we expect public demand to rise in 2019 despite the tax hike (see Chart 1).

Second, export growth is unlikely to reignite even if trade war hostilities between the U.S. and China ease. The global trade slowdown will likely cause Japan's net exports to detract from overall growth.

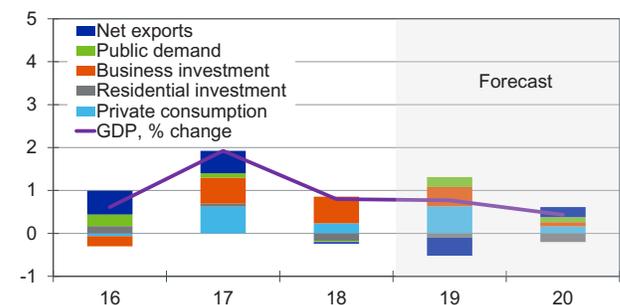
The outlook for business investment is also tilted to the downside, though construction and spending ahead of the 2020 Tokyo Olympics should partially offset the lower expenditure on manufacturing, which is a result of cooling export growth. Overall, we expect GDP to expand by 0.6% in 2019, followed by a slowdown to 0.4% in 2020.

## Gains under Abenomics

Despite the looming uncertainties and challenges in 2019, it is worthwhile recalling the gains made since Prime Minister Abe's economic policies of reforms and monetary and fiscal stimulus, known as Abenomics, were in-

Chart 1: Consumption Remains the Key

Contribution to real GDP growth, pts



Sources: Japan Cabinet Office, Moody's Analytics

roduced in 2013. Growth was languishing prior to Abenomics: From 2000 to 2012, nominal GDP fell 6.5%. Since 2013, nominal GDP has increased 11.5% (see Chart 2).

Higher growth has led to greater employment; there are 3.84 million new workers since the start of 2013. The number is especially impressive considering the population declined from 2012 to 2018. Moody's Analytics estimates that the total population fell by around 1.17 million during this period.

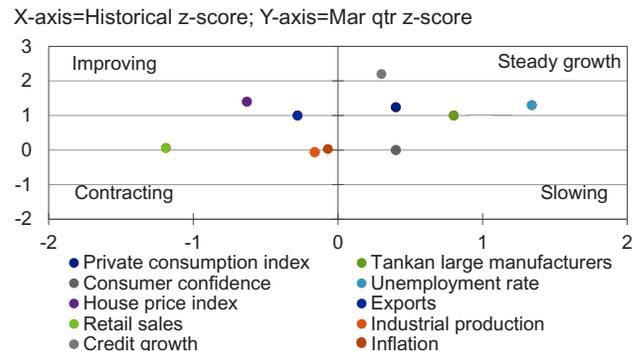
Moreover, increasing downside risks are unlikely to derail short-term growth prospects (see Chart 3). Partial demand indicators point to sustained improvements. Calculating the Z-score of high-frequency

**Chart 2: Success of Abenomics**



Sources: Economic & Social Research Inst., Moody's Analytics

**Chart 3: Demand Indicators Are Healthy**



Sources: Government of Japan, Moody's Analytics

indicators also suggests that the economy is in a reasonable spot. The Z-score captures the number of standard deviations above or below the mean. A positive Z-score for a particular demand indicator suggests that it is performing better than its average. Since 2013, the Z-scores, on average, point to steady growth or improvements across the high-frequency indicators. The current-quarter tracking for the Z-scores also suggests that the economy has not slowed dramatically in 2019. Consequently, March-quarter GDP will likely continue the upward trend from the previous quarter. GDP is expected to expand by 0.4% q/q in March, following a 0.5% expansion in the December quarter.

In an economy that is aging, with its human capital declining, GDP is unlikely to rise forever. Therefore, a contraction every so often can be expected, especially after 2017, when the economy expanded above potential. A more comprehensive barometer for

Japan's economy is GDP per capita or GDP per worker, both of which have consistently outpaced GDP growth (see Chart 4). This suggests that Japan's living standards will be maintained despite slow headline growth.

**Steady job growth**

Sustained labour market improvements have been the norm in Japan over the past two years. Employment rose 2.1% in 2018 and the industries that contributed most to employment were primarily services-related (see Chart 5).

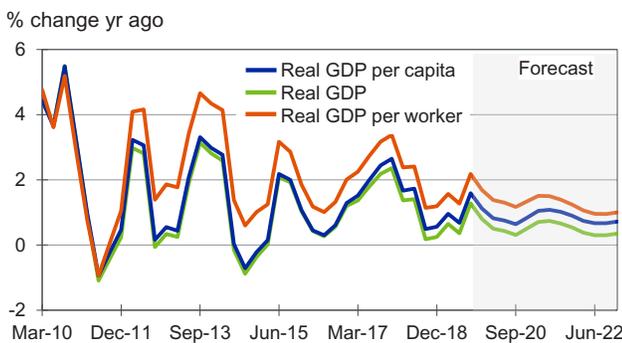
This is partly due to easing of Japanese immigration laws, which allows trainees and workers to enter the country in these industries if they have the designated skill set (see Chart 6). Though it is too early to wax lyrical about Japan opening its immigration, it does suggest that the government is aware of its aging population and willing to obtain an overseas skill set.

Overall, foreign workers are represented the most in research and medical industries, where there is a shortage of skilled labour. This trend is expected to persist over the coming year, as local labour supply is unlikely to fill the skills shortage. Japan's labour market has tightened, with the unemployment rate falling to 2.5% and the jobs-to-applicants ratio rising to 1.63 in January—163 jobs for every 100 job seekers.

Currently, business sentiment remains at its highest levels since prior to the Great Recession. Moreover, firms have not reported this level of insufficient employment (difficulty in filling jobs) since the early 1990s (see Chart 7). The negative relationship between sentiment and insufficient employment has persisted over the past few decades.

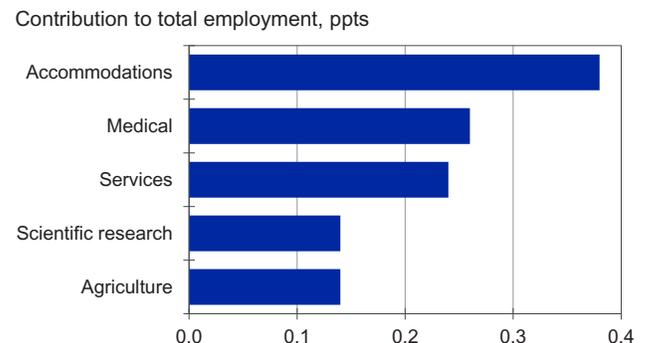
This is the longest sustained period where firms have reported insufficient employment—22 quarters compared with the

**Chart 4: Living Standards Remain Intact**



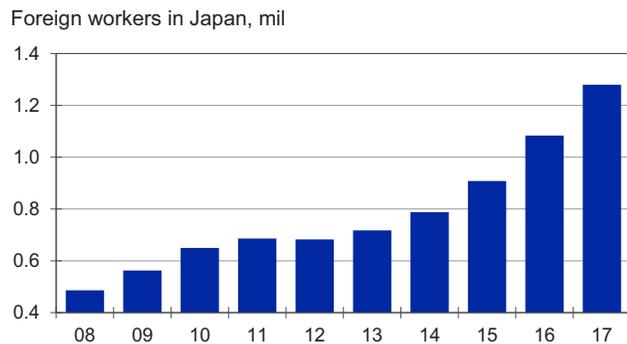
Sources: Japan Cabinet Office, Moody's Analytics

**Chart 5: Job Growth Shared**



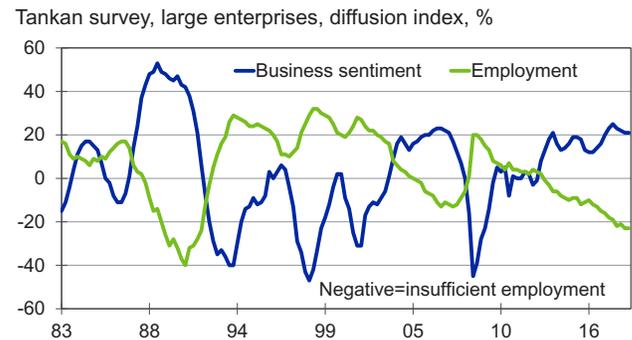
Sources: Japan Statistics Bureau, Moody's Analytics

Chart 6: More Open Immigration



Sources: Ministry of Health, Labour & Welfare; Moody's Analytics

Chart 7: A Tight Labour Market



Sources: BoJ, Moody's Analytics

previous high of 17. Although the relationship is expected to persist in 2019, business sentiment has slowed in the last two quarters. Overall, Moody's Analytics forecasts the unemployment rate to trend down, but job growth will likely decelerate compared with the previous two years as both business sentiment and insufficient employment slowly converge.

### Low wage increases

The tightening labour market has led to low wage increases, and that is unlikely to change. Although corporate savings across Japan remain high, the recent slowdown in export growth and lower profit margins have tempered sentiment (see Chart 8), which has translated to lower wages.

The shunto, or spring wage negotiations, delivered smaller wage increases this year compared with last. Large manufacturers agreed to increase wages for the sixth year in a row, although the increase fell short of the government's 3% to 5% goal. For example, Toyota—a bellwether for manufacturers—delivered an average monthly pay increase of ¥10,700, which is ¥1,000 lower than in 2018. Large electronics companies also delivered smaller wage increases.

The current level of wage growth will prevent Japan from falling back into deflation, but it is unlikely to boost inflation above the central bank's 2% target (see Chart 9). For inflation to reach the elusive 2% mark, wages will likely have to rise at least 3% on a consistent basis. There is little indication that this will occur over the coming year, with increased downside coming from the higher

consumption taxes. Companies remain wary of increasing worker wages because they are unconvinced that the growth momentum will last.

### Phillips curve redux

In early 2017, Moody's Analytics estimated an augmented Phillips curve relationship for Japan, to account for the determinants of persistently low inflation (see Table 1). Despite core inflation—currently running at 0.7 y/y—well below the Bank of Japan's 2% target, the findings suggest that quantitative easing, or the BoJ's accommodative policies, has helped lift prices and offset deflation pressures. But the BoJ's efforts have been hindered by swings in oil prices and global inflation. Japan's inflation effort is susceptible to exogenous shocks to domestic demand: The sales tax hike introduced by the government in April 2014 caused domestic demand to decline.

To model the impact, the Phillips curve equation is utilised, with core inflation—the BoJ's preferred target—as the dependent variable. An augmented Phillips curve is used to measure the various determinants of inflation. This is helpful because we can account for the various shocks that could stifle the reflation effort.

Dummies can be used to separate these shocks. A dummy variable takes the value of either 0 or 1. Three separate dummies are utilised: first, the introduction of quantitative easing in 2013; second, a period of one year after the sales tax hike to account for a jump in inflation; and finally, a dummy to measure the impact on demand from the tax hike.

The results suggest that, all else being equal, quantitative easing has boosted core inflation by 0.7 percentage point on average. The impact of the 2014 sales tax hike is clear: After accounting for the initial jump in prices by 1.2 percentage points on average (the dummy from April 2014 to 2015), the sales tax has been deflationary. The impact remains persistent; even after five years, the model estimates that core inflation is 0.33 percentage point lower because of the sales tax hike in 2014.

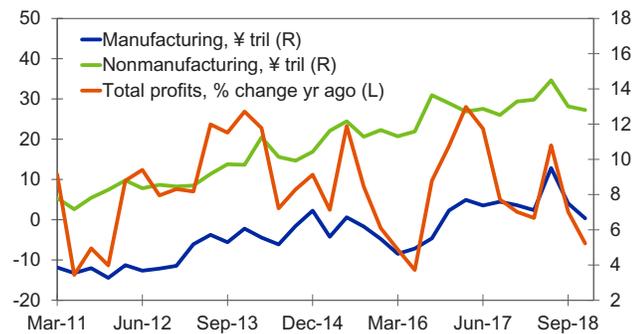
Moreover, the output gap, which is the difference between actual and potential GDP, is economically and statistically significant. If actual GDP falls 1 percentage point below potential GDP, then core inflation will decline by 0.94 percentage point, all else being equal.

A slowdown in global inflation and oil prices also dents Japan's inflation: A 1-percentage point decline in global inflation reduces Japan's core inflation by 0.28 percentage point. Similarly, a 10% drop in oil prices causes a 0.1-percentage point decrease in core inflation.

To measure how much past inflation influences current inflation in Japan, several lags of the core inflation are used. This serves as a proxy for backward-looking inflation expectations. The model suggests—after controlling for other variables—that the lags up to six months on inflation are both economically and statistically significant. This showcases the persistence of past inflation in Japan.

The Phillips curve relationship helps explain why the BoJ's reflation efforts have

Chart 8: Slowdown in Corporate Profits



Sources: Ministry of Finance, Moody's Analytics

Chart 9: Low Wages Prevent Deflation



Sources: Japan Cabinet Office, Moody's Analytics

struggled. Swings in oil prices and global inflation have a material impact on Japan's core inflation. For example, after rising sharply through mid-2018, oil prices dropped precipitously at the end of 2018. This implies that core inflation will likely decelerate in the short term, at least to 0.5% by midyear.

The Phillips curve also helps quantify the impact of the sales tax hike (see Chart 10). Core inflation will likely rise by 1.2% over the next year on the back of the sales tax

increasing from 8% to 10%. But after the sales tax hike is removed from the CPI by October 2020, inflation will likely be lower, as estimated by the Phillips curve. Given the malaise caused by the previous tax hikes, we expect the economy to take a hit when the sales tax is increased in 2019.

However, the degree of slowdown is unlikely to be as severe, because ¥2 trillion out of the ¥5 trillion from the revenue will be diverted to fiscal stimulus. Although Japa-

nese governments notoriously spend less on fiscal stimulus than originally planned, fiscal spending of some form will partially offset lower consumption. An increase in investment prior to Japan's Olympic Games in 2020 could also help.

On balance, the tax hike will likely lead to a decline in consumption, and the economy could slip into a small recession. However, a fallout similar to that of the previous tax hikes is unlikely.

Table 1: Japan's Augmented Phillips Curve, OLS Equation

Dependent variable: Core inflation\*

Method: Least squares

Sample (adjusted): 2006M07 2019M01

Included observations: 151 after adjustments

Variable	Coefficient	Std. Error	T-Statistic	Prob.
Constant	-0.81	0.09	-8.52	0.00
Core inflation, 3-mo lag	0.35	0.07	5.25	0.00
Core inflation, 6-mo lag	0.18	0.06	2.91	0.00
Output gap, 9-mo lag	0.94	3.43	2.47	0.01
Oil prices, 1-mo lag	0.01	0.00	4.34	0.00
Global inflation, 2-mo lag	0.28	0.04	6.53	0.00
Quantitative easing dummy	0.71	0.09	7.80	0.00
Sales tax dummy (for 12 mo after the sales tax)	1.20	0.16	7.70	0.00
Sales tax dummy (for entire period after the sales tax)	-0.33	0.10	-3.17	0.00
R-squared	0.90	Mean dependent var		0.29
Adjusted R-squared	0.89	S.D. dependent var		1.12
F-statistic	157.12			
Prob(F-statistic)	0.00			

\*All measures of inflation and prices are % change yr ago

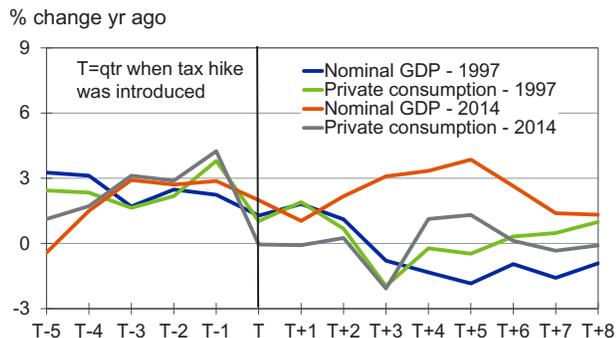
Source: Moody's Analytics

### Quantifying trade uncertainties

Export growth has slowed materially on the back of increased trade tensions. After rising more than 12% in 2017, merchandise exports slowed to around 4% in 2018. This stems largely from global growth, particularly in Japan's major export partner, China. Increased trade tensions have also weighed on regional sentiment across Asia as various governments recalibrate their trade deals.

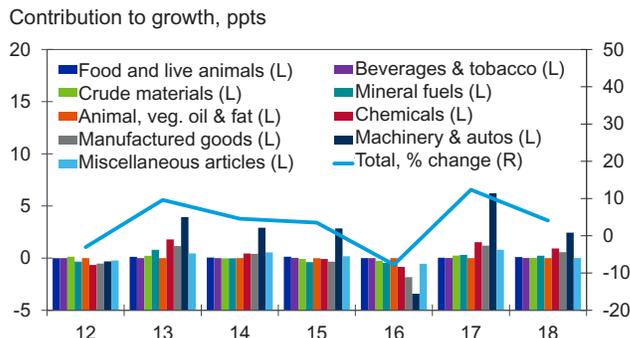
Although China and the U.S. have agreed to pause trade hostilities, uncertainty will continue until trade relations are normalized. President Trump's crusade against the U.S. trade deficit means that Japan will remain a target for anti-trade measures, as the U.S. has a \$69 billion deficit with Japan. Anxiety has increased following

**Chart 10: Tax Hikes Lead to Recession**



Sources: Economic & Social Research Inst., Moody's Analytics

**Chart 11: Autos Are the Export Engine...**



Sources: Japan Cabinet Office, Moody's Analytics

the February submission by U.S. Commerce Secretary Wilbur Ross on the results of the investigation into the effect of auto imports on U.S. national security. Japanese machinery and auto exports to the U.S. account for 15% of total Japanese export value.

Late last year, an agreement between Japan and the U.S. suggested that Japan will likely avoid a 25% tariff on autos. Abe also offered a \$20 billion investment in the U.S. auto sector, which was designed to calm Trump's fears about Japanese autos. However, it remains unclear whether Japan will lose or maintain its current access to the U.S. The Trump administration has not responded to Ross' submission, but a meeting with Abe in late April will likely include trade talks. If Trump is left uninspired, odds of an auto tariff will increase.

The contribution of the auto sector to the Japanese economy remains significant (see Chart 11). Machinery and auto exports have been the primary driver of

overall export growth since Abenomics. While manufactured goods and chemical goods have also been at the forefront of export growth, Japan's machinery and autos carry the burden. A large portion of machinery and autos also includes electronic goods.

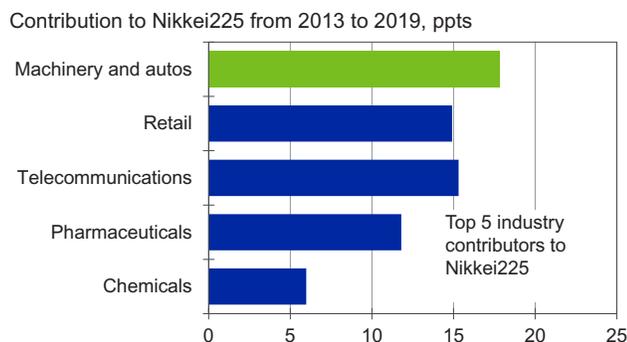
Moody's Analytics looked at industry data in the Nikkei225 to gauge the importance of autos (see Chart 12). Collating the various subsectors into the broad category of machinery and autos, the findings suggest that this sector contributed the most to the stock market index from 2013 to 2019. During this period, the stock market more than doubled. To further focus the analysis on autos, companies related to electronic goods were omitted from the category, where possible. The bottom line is that trade frictions related to auto exports will hurt the overall economy. The stock market maintains an important source of wealth in Japan. The BoJ reports

that various studies show a 10% drop in stock prices can cause private consumption to fall by around 0.3%.

Therefore, a 25% tariff slap on Japanese auto exports would dent corporate profits, reduce investment in autos, cause the stock market to fall, and hurt overall consumption. This would be a first-order effect, with other consequences filtering through the economy. This impact can be quantified by using the Moody's Analytics Global Macroeconomic Model.

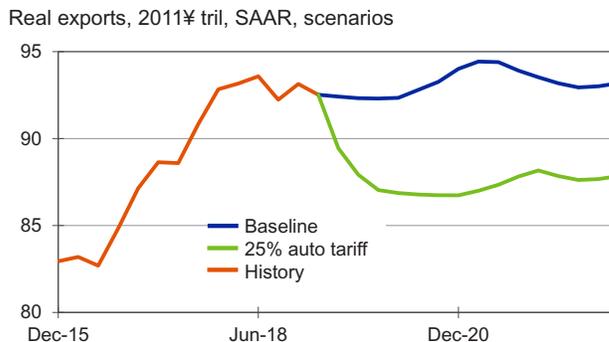
Comparing the baseline scenario and the 25% auto tariff scenario, the Japanese economy will perform suboptimally if a tariff is imposed (see Chart 13). Since auto exports to the U.S. account for 15% of total exports, real exports of goods and services will likely slump by around 6% peak to trough. This is based on a fall in auto exports and also worsening trade ties between the two economies. For simplicity, a retaliatory tariff is not considered.

**Chart 12: ...Buttressing the Stock Market**



Sources: Bloomberg, Moody's Analytics

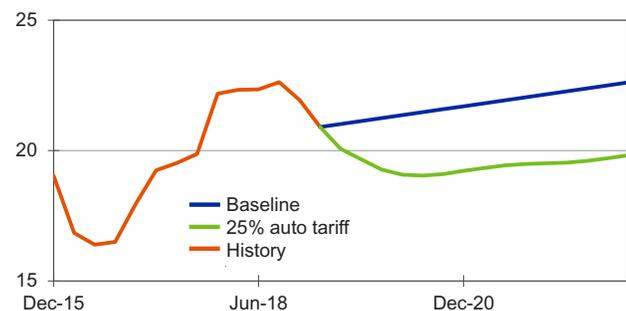
**Chart 13: Exports Collapse Under Tariffs**



Sources: Economic & Social Research Inst., Moody's Analytics

**Chart 14: Stock Market Suffers**

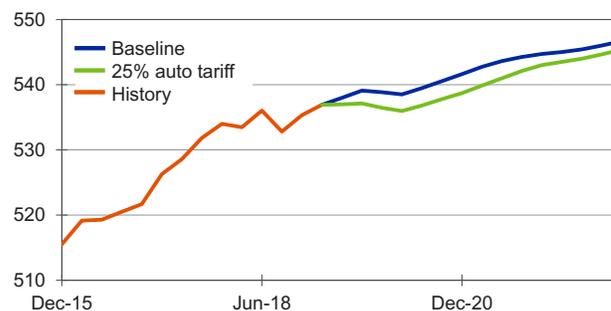
Nikkei225 index, ths, scenarios



Sources: Economic & Social Research Inst., Moody's Analytics

**Chart 15: Growth Falls Below Baseline**

Real GDP, 2011¥ tril, SAAR, scenarios



Sources: Economic & Social Research Inst., Moody's Analytics

A fall in exports reverberates through the stock market (see Chart 14). The Nikkei225 declines on the back of lower sentiment, declining export receipts, and an overall drop in profits. Since machinery and autos led the rise over the past few years, they also lead the stock market fall. Overall, equity values decrease almost 15% peak to trough in the five quarters after the tariff introduction.

The negative wealth shock from the tariff also hurts private consumption. Similar to previous studies noted by the BoJ, Moody's Analytics estimates that private consumption, on average, is around 0.2% lower than the baseline until 2021. Consequently, GDP growth is also lower compared with the baseline (see Chart 15). While GDP rises 0.6% under the baseline, the first year of the tariff causes growth to decelerate to 0.3% in 2019. In the second year, the trade environment remains feeble and GDP growth rises only 0.05% with the auto tariffs, compared with 0.35% under the baseline.

**BoJ tightening not on radar**

The BoJ is expected to keep its policy levers unchanged in the short to medium term. This follows tweaks to its monetary policy operations in July, when the central bank paved a path towards tighter policy. The BoJ formally introduced 'forward guidance' to keep interest rates low. Second, it committed to implementing greater flexibility by allowing the 10-year Japanese government bond yield to move 'upwards' and 'downwards'. With global bond yields rising, this is to allow for upward bias in Japanese government bonds (see Chart 16). The BoJ also lowered the 'policy rate balance', or excess reserves, to which the -0.1% interest rate is applied.

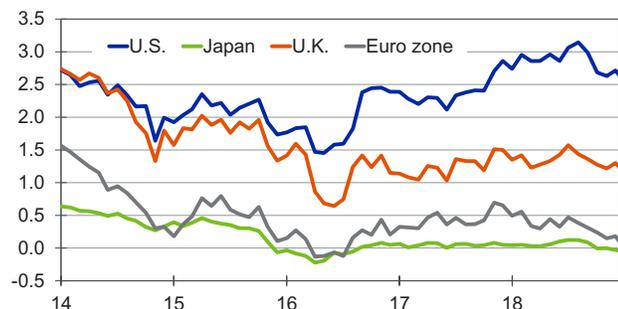
In summary, the BoJ has laid the groundwork for tightening policy, but this is unlikely to occur over the next two years. In early 2019, the BoJ has turned more dovish. Growth and inflation slippage means that the central bank is unlikely to lift the short-

term policy rate until after 2020. The dissenters have also turned more dovish. First, they want further monetary easing so that the JGB yields are lowered further. Second, they believe that the odds of hitting the 2% inflation target are low. Finally, they want greater clarity around forward guidance.

The BoJ's latest policy wrangling raises questions on when the central bank will actually begin tapering. Official tapering announcements are unlikely in 2019 because the central bank has already slowed its pace of asset purchases: The increase in the monetary base has decelerated sharply. Rather than hitting the ¥80 trillion annualized monthly target, the BoJ is purchasing at a much slower rate. This has led financial markets to deem the BoJ's purchases as 'stealth tapering'. That said, the looming uncertainties suggest that the BoJ will continue with accommodative monetary policy. Despite stealth tapering to allow for greater flexibility in the 10-year yield, the

**Chart 16: Yield Spreads With U.S. Widen**

10-yr government bond yield, %



Sources: Federal Reserve Economic Data, Moody's Analytics

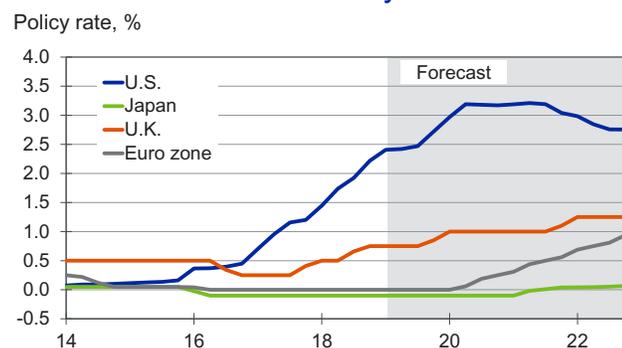
**Chart 17: BoJ Persisting With 0% JGBs**

Baseline, 10-yr Japanese government bond yield, %



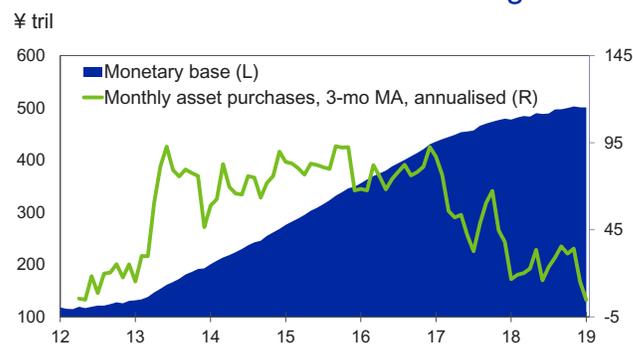
Sources: Ministry of Finance, Moody's Analytics

Chart 18: Last to Lift Policy Rates



Source: Moody's Analytics

Chart 19: BoJ Varies Its Purchasing Pace



Sources: BoJ, Moody's Analytics

BoJ will continue to persist with a 0% target for the JGB and be the last of the major central banks to lift policy rates (see Charts 17 and 18).

To augur a sense of policy rate expectations, alternative scenarios from the Moody's Analytics global model can be used to calculate the expected value based on different scenario probabilities. For example, an upside, downside and baseline scenario, with three different probabilities, determine the expected value of the different policy rate outcomes. This is somewhat similar to policy rate market pricing, but instead based on a Moody's Analytics suite of alternative scenarios.

In the constant probability scenarios, the baseline constitutes 40%, while the upside and downside scenarios have a

probability weight of 30% each. Table 2 showcases the results of the expected value based on different scenarios. An upside scenario for Japan would constitute the avoidance of auto tariffs, various trade war hostilities easing, and the tax hike having a negligible impact on the economy. Under the upside scenario, the BoJ will lift the policy rates in late 2019 and early 2020.

The downside scenario includes increased fractions in global trade, characterized by a slower U.S. and Chinese economy. This would dent Japan's exports further, leading to a recession in 2019 and 2020. Under this scenario, the BoJ will continue to persist with negative interest rates through the medium- to long-term horizon. The expected value for the three

discrete outcomes suggests that negative interest rates are expected to persist. The average expected value of the outcomes over four years is -0.05. The overwhelming evidence is that the BoJ will persist with monetary easing and negative interest rates over the short to medium term (see Chart 19).

The currency remains a crucial part of the consideration for the BoJ, too. A high-octane U.S. economy has wet the sails of 10-year Treasuries, which has helped widen the interest rate differential between Treasuries and JGBs. Higher U.S. rates will likely keep downward pressure on the yen, especially when yield curve control will cap the 10-year JGB. Moody's Analytics forecasts that the yen will remain in a tight range of ¥110 to ¥115 per dollar.

Table 2: Probability-Weighted Policy Rate Forecast

	Baseline (BL)	Probability of BL	Upside (S1)	Probability of S1	Downside (S3)	Probability of S3	Expected value = P*(BL)+*P(S1)+*P(S3)	
2019	-0.10	40%	-0.10	30%	-0.10	30%	-0.10	
2020	-0.10	40%	-0.05	30%	-0.10	30%	-0.08	
2021	-0.02	40%	0.06	30%	-0.10	30%	-0.02	
2022	0.05	40%	0.10	30%	-0.10	30%	0.02	

Source: Moody's Analytics

## About the Author

**Faraz Syed** is an economist in the Sydney office of Moody's Analytics. He covers national and metropolitan economic issues across the Asia-Pacific region. He previously worked as an analyst at the Australian Bureau of Agricultural Resources, Economics and Sciences, where he was responsible for exchange rate forecasting and economic analysis on Australia's key trading partners. Faraz received his bachelor's degree in economics (honours) from Macquarie University and is working on his master's degree in econometrics.

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