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# Outlook for Japan's Economy in 2019

**Slowing down due to stagnant overseas demand and inventory adjustment. The key to growth in domestic demand is the price of crude oil and consumption tax hike countermeasures**

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## Summary

- Japan's economy in 2018 experienced a falling away of "2017 bonus factors", and currently remains in a lull. First of all, the inventory cycle is moving away from the accumulation phase and into a stock pile up phase. In either case, there is a strong possibility that an inventory adjustment phase will ensue. Meanwhile, exports are showing strong signs of peaking out in a reflection of the global economic slowdown.
- The 2018 global economy, much like Japan's economy, is experiencing a slowdown due to the falling away of "2017 bonus factors", including an upturn in the global inventory cycle, acceleration of China's economy in anticipation of the meeting of the National Congress of the Communist Party of China, and recovery of the European economy accompanying the shift to expansion, moving away from austerity measures. The US economy is offsetting the cyclical slowdown of the global economy somewhat through the effects of tax cuts, but at the same time, US interest rates have been on the rise due to the increase in the issuance of government bonds and the Fed's reducing its asset holdings. This ultimately acts as a drag on the global economy.
- Considering these factors, when we look ahead we see that there is a strong possibility that the global economy will continue to mark time. First of all, the effect of the US tax cut will eventually peter out, and global inventory adjustment will continue for some time. The increase in the cost of procuring capital in dollars may likely come to a halt for the time being, but the Eurozone may likely find itself in the same situation with the ECB ending its quantitative easing policy. On the other hand, the collapse in the price of crude oil is a positive factor for the global economy, especially the industrialized countries. It is quite possible that this could offset the large part of negative effects of the US and China raising tariffs (as long as it does not expand beyond the current scale).
- Japan's economic growth is expected to fall somewhat below the level of its potential growth, due to overseas demand marking time and inventory adjustment. The DIR baseline scenario for FY2018 is +0.9% in comparison with the previous year, with the FY2019 growth rate at +0.8%. The importance of domestic demand will increase relatively as overseas demand continues to do poorly, but there are both positive and negative factors in store for domestic demand in the future. One of the positive factors is the fall in the price of crude oil. On the other hand, the consumption tax hike planned for October 2019 will act as a negative factor on the growth rate. At the same time, however, government expenditure exceeding the amount in consumption tax increase is planned. Japan's economy will likely increase its dependence on domestic demand in 2019 that seen in 2018.

## Revised economic outlook: FY2018 +1.0%, FY2019 +0.8%

In light of the 2<sup>nd</sup> preliminary Jul-Sep 2018 GDP release we have revised our economic growth outlook. We now forecast real GDP growth of +0.9% in comparison with the previous year for FY18, and +0.8% in comparison with the previous year for FY19. Our outlook for Japan's growth rate is that it will continue marking time for the time being, after having peaked out in FY17 at +1.9%.

In some quarters there is a growing concern regarding the possibility of Japan's growth rate continuing to fall well below potential growth, possibly even moving into a recession. But as of this point the only thing that has been confirmed is that Japan's economic slowdown is cyclical one, with the factor of adjustment being the major one. This cyclical adjustment phase will eventually end, but on the other hand, it is also dangerous to be overly optimistic. In any case, there is no need to be excessively pessimistic.

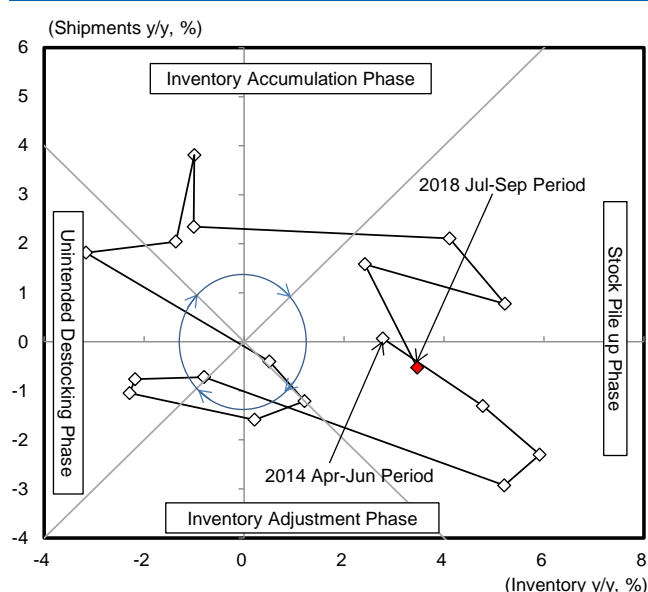
As will be covered in more detail later in this report, an increase in government expenditure is expected, which is large enough to offset the effects of the planned increase in consumption tax in October 2019. In addition, the consumption suppression effect of the rise in energy prices and prices of fresh foods will have run its course, and household real disposable income is expected to continue improving. Caution is still required in regard to trade issues, but expansion of the economy as such is expected to continue (though at a much slower rate than in 2017).

### The basic nature of Japan's economic slowdown in 2018: overseas demand marking time, and inventory adjustment

The reasons behind Japan's recent economic slowdown are simple. The two major factors behind positive growth in 2017 disappeared. The first positive factor was that the inventory cycle, but the cycle is now moving from the inventory accumulation phase to the stock pile up phase (Chart 1). In either case, it is now highly possible that an inventory adjustment phase will now ensue. The other major positive factor for 2017 was growth in exports, but now they are showing signs of peaking out, reflecting the slowdown in the global economy (Chart 2).

#### The Inventory Cycle

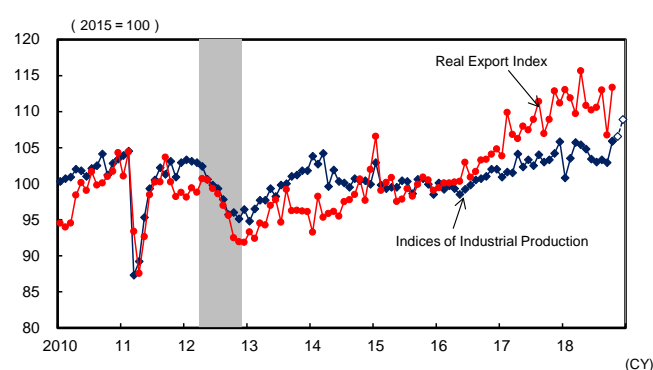
#### Chart 1



Source: Ministry of Economy, Trade, and Industry; compiled by DIR.

#### Japan's Real Exports and Industrial Production

#### Chart 2



Source: Bank of Japan, Ministry of Economy, Trade, and Industry, Cabinet Office; compiled by DIR.

Notes: 1) Shaded areas represent periods of economic recession.  
2) Most recent two months of data on industrial production from the METI production forecast survey.

## The basic nature of the 2018 global economic slowdown: inventory adjustment and fiscal austerity measures in EU and China

Why did Japan's exports (or the global economy), the main factor leading its economy in 2017, enter a downturn? Some say that the main factor in the decline in the global economy is apprehension regarding the US-China trade war, but the argument is not very convincing. The US and China only began actually implementing tariffs after July 6 this year, and additional tariffs affecting a broader range of goods were implemented on September 24. The direct influence of tariffs cannot yet be recognized in any economic statistics as of this point in time. We have to assume that the effects will appear further into the future.

Most likely there will be damage to some degree in the future and this may be hindering economic activity somewhat, centering on corporate capital expenditure. But if that were the case, it would follow that capital expenditure should be affected most in the parties to the trade disagreement, but the slowdown in China's private sector capital expenditure is at most, just a bit sluggish in comparison to other major economic indices. Meanwhile in the US, no negatives can be confirmed in the corporate sector. It appears that most likely the 2018 global economic slowdown has been brought on by countries other than the US (Japan, Europe, the emerging nations, etc.).

The nature of the global economic slowdown is really quite simple – the economy just did too well in 2017, and now the tables have turned. As we have indicated in past outlooks for the Japanese economy, the year 2017 enjoyed some positive factors, including (1) an upturn in the inventory cycle centering on the US, (2) acceleration of China's economy in anticipation of the meeting of the National Congress of the Communist Party of China, and (3) recovery of the European economy accompanying the shift to expansion, moving away from austerity measures. These factors helped to speed up the growth rates of economies of various individual regions, as well as the global economy.

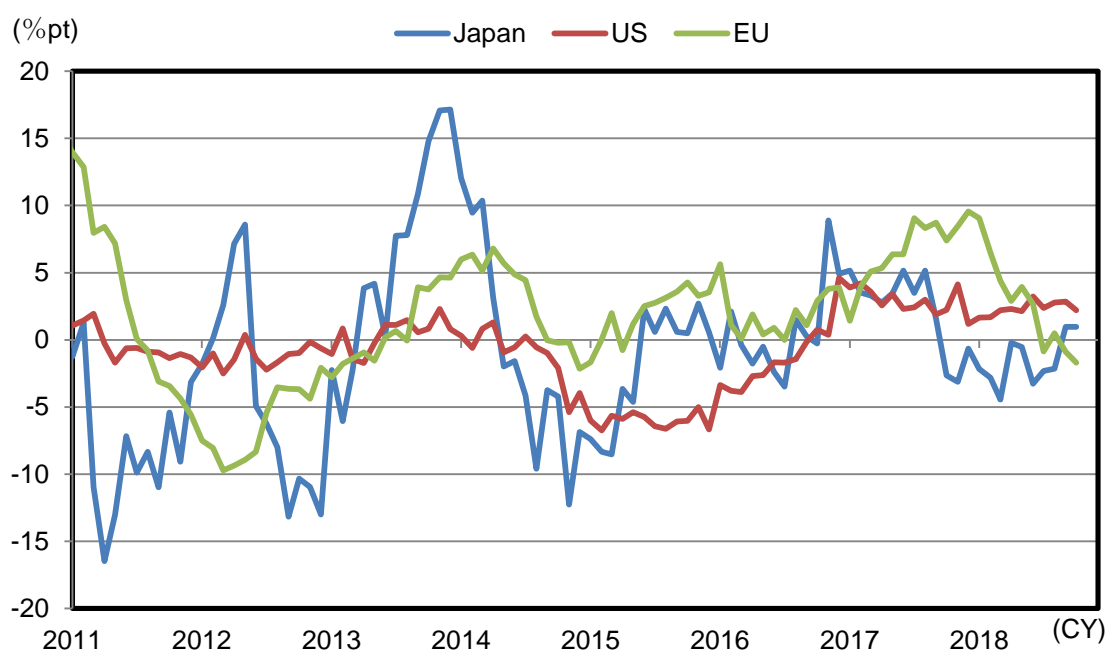
If we extend the temporal axis a bit, there is another important factor in the global economic acceleration of 2017 – that is the fact that it was a rebound from the slowdown of 2015-16. It was 2015 when the Greek government-debt crisis brought turmoil to the European capital markets. Also in 2015, capital flight from China caused that country's economy to stagnate<sup>1</sup>, and the global economy also to suffer slower growth. The after-effects were manifest in the form of global inventory and production adjustments in 2016 (Chart 3).

After the US presidential election of November 2016 hopes were raised regarding the increase of government spending. This in turn encouraged improvements in market sentiment on the global stock markets. Meanwhile, interest on the government bonds of the southern European countries, which had reached a high level, began to decline as the ECB's quantitative easing took effect, and the problem of government finances began to subside. In addition, in anticipation of the meeting of the National Congress of the Communist Party of China, the Chinese government implemented a fiscal expansion policy and monetary easing. These policy decisions encouraged more corporate activity in 2017 as well as household activity, and also helped to accelerate the global economy. One important point that should not be ignored is the fact that during the previous year, corporate inventories suffered from stock depletion, but recovery of inventory was helped along by the activation of production.

However, the "2017 bonus factors" are all gone now. The only thing left is the inventory that was built up. Therefore, the year 2018, and most likely 2019 as well, will re-enter an inventory adjustment phase. This appears to be the most appropriate baseline scenario.

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<sup>1</sup> Said capital flight also has behind it the strong US dollar and rising US interest rates. Hence we could say that leading up to this was the recovery in the US economy up till 2014, and the closing of the supply-demand gap.



Source: Major statistics from each of the above mentioned countries; compiled by DIR.

Notes: 1) Shipment and inventory balance = shipments (y/y) – inventory (y/y)

2) Average values were calculated for Japan's data in September and October 2018 as a means of producing an average for the factor of natural disasters

3) For EU only: production index y/y difference – inventory DI y/y difference.

## Essential factors behind US alone retaining economic strength in 2018: The tax cut effect and the supply/demand situation for US Treasuries

Another one of the special characteristics of the year 2018 is that as the global economy moves into a cyclical downturn, the US is managing to manifest accelerated growth. Of course, one could say that maintaining a strong economy is merely because of tax cuts, and you may be at least partly right. However, there are two more important factors in addition to the effect of tax cuts.

One is that the more the US budget deficit expands, the higher interest rises on US Treasuries, and this has the effect of monetary tightening (a credit squeeze) for the entire world. After October 2017 the Fed began to reduce its asset holdings (in the form of redemption of bond holdings) which had grown huge from its past policy of quantitative easing. This causes an increase in the volume of bonds circulating on the market, while at the same time causing a decrease in the distribution amount of dollar currency. Added to this is the tax cut. The tax cut causes the budget deficit to expand, which means an increase in the volume of bonds issued. Coupled with the reduction of asset holdings by the Fed, this causes interest on US Treasuries to rise, which in turn increases the cost of dollar financing worldwide. To put it more simply, while the US fiscal policy is a positive factor for the US economy, it is a negative factor for the global economy (Chart 4).

The other factor is adjustment of the take amongst allies in the zero-sum game of a US-China cold war. As was pointed out in our monthly outlook of October 2018<sup>2</sup>, China bashing by the US does not stop at tariffs. The containment of China by US allies has begun with certainty. Japan, the US, and the EU agreed to carry out WTO reforms, issuing a joint statement<sup>3</sup>, which includes the following passage

<sup>2</sup> DIR Report dated 26 October 2018, *Japan's Economy: Monthly Outlook (Oct 2018): The true nature of the US-China Trade War: The end of "the end of history" (or a new beginning?)*, by Shunsuke Kobayashi & Yota Hirono

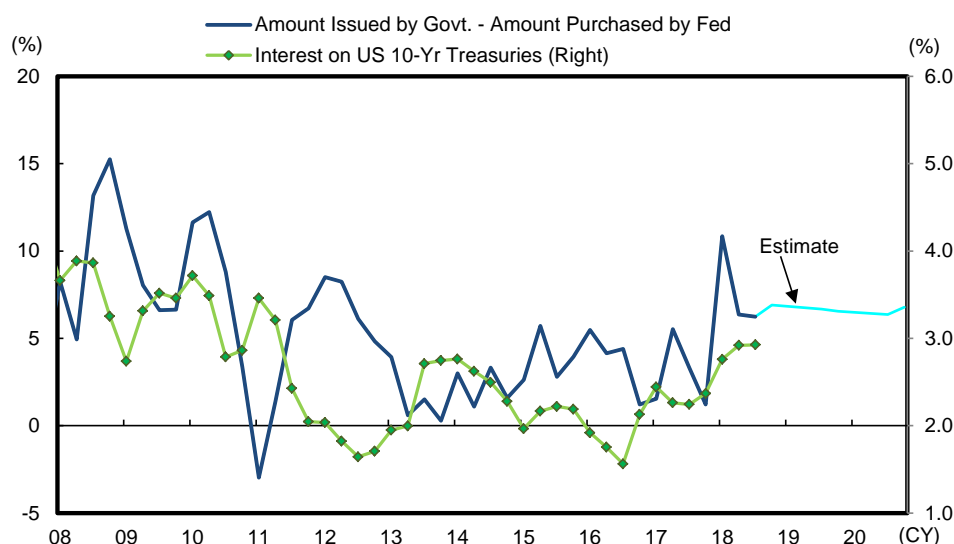
<sup>3</sup> The US-Japan joint statement of September 26, announced on the previous day, September 25, is even more detailed in content. See "Joint Statement on Trilateral Meeting of the Trade Ministers of the United States, Japan, and the European Union." <http://www.meti.go.jp/press/2018/09/20180925004/20180925004-2.pdf>

agreeing to “address unfair trading practices including intellectual property theft, forced technology transfer, trade-distorting industrial subsidies, distortions created by state-owned enterprises, and overcapacity” (joint statement of the US and Japan). The USMCA, a continuation of the NAFTA idea, includes provisions obligating member nations to inform other USMCA members and discuss the issue whenever they engage in trade negotiations with a country with a non-market economy<sup>4</sup>. Preparations have been made to continue a containment policy until China begins to promote a completely market oriented economy.

A cold war is a war of attrition. To maintain superiority in a war of attrition, provisions are essential. For this, the US can rely on its allies. Japanese investment in the US domestic automobile industry, the EU’s cutting of tariffs, Canada and Mexico increasing the ratio of their US domestic production. In other words, in the context of a US-China cold war there is a new world order, which can be expressed in simple terms as follows: while the US and China play a negative-sum game, the US and its allies play a zero-sum game in which the US is able to increase its take. This situation is expected to continue.

Although this is not one of the factors that will make the US the single strong economy in 2018, it is an important factor which suggests that there is a good possibility the US will continue to be the strongest economy through the year 2019 and beyond.

**Net Issuance of US Debt (as a Proportion of GDP) and Interest on US 10-Year Treasuries** **Chart 4**



Source: FRB, CBO, Haver Analytics; compiled by DIR.

Note: Data after 2018 calculated by DIR based on FRB and CBO outlooks.

### **The global economy in 2019: Negative effects of US-China cold war to be offset by collapse in the price of crude oil, but slowdown to continue due to inventory adjustment, monetary tightening, and dwindling of US tax cut effect**

Now, in view of the arguments presented up to this point, what is the outlook for the global economy in 2019? Our baseline scenario is that in cyclical terms, the global economy will move into an inventory adjustment phase.

Meanwhile, it is likely that interest on US Treasuries will remain high due to the deteriorating supply and demand situation explained previously. The pace of the Fed’s reduction of its asset holdings was set at 10 billion dollars per month maximum since its beginning in October 2017. The process has been accelerated once every three months by the monthly amount of 10 billion dollars, so that monthly maximum as of October 2018 was 50 billion dollars in asset reduction. Hence the decrease in the

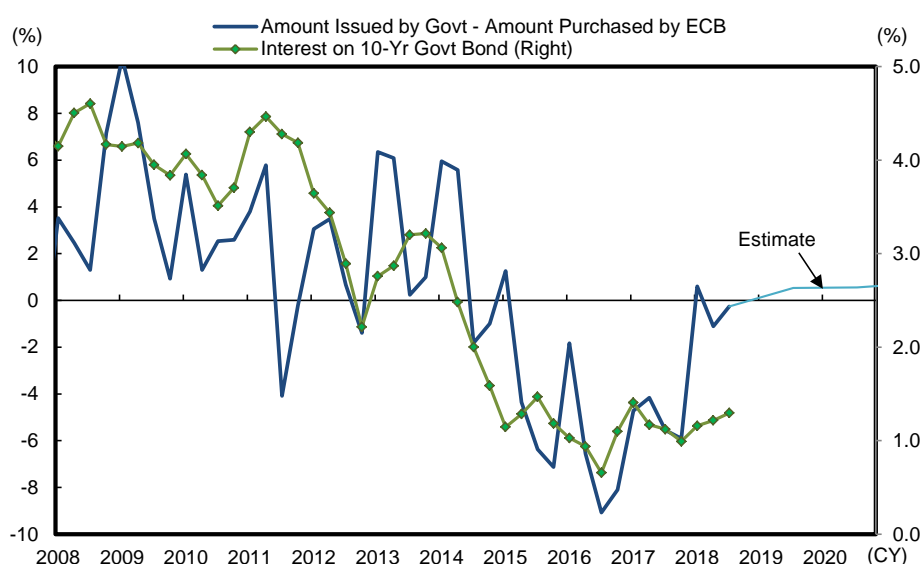
<sup>4</sup> For details see Article 32.10: Non-Market Country FTA in USMCA Chapter 32 - Exceptions and General Provisions.

distribution amount of dollar currency will continue until the Fed suspends asset reduction. It is safe to say that the pace of asset reduction has just about reached its peak at this time.

However, it is important to note that the EU may also experience the same phenomenon as the US in the future (Chart 5). The ECB implemented a quantitative easing policy involving asset purchases of 60 billion euros per month up until the end of 2017. Starting in January 2018, it began reducing purchases of assets by 30 billion euros per month, lowering this to 15 billion euros per month as of October this year. Plans are to suspend quantitative easing as of January 2019, and considerations are being made for an interest rate hike after summer of the same year. Added to this is the element of political uncertainty.

Italian-born Mario Draghi has served as ECB president since 2011, and provided support on the monetary policy side in handling the debt crisis in southern Europe during that time. His term will be up in 2019, and so far possible candidates named for his successor are from France and farther north. In other words, candidates are all from countries whose financial institutions have suffered the most from Draghi's negative interest policy. The problem of the worldwide increase in the cost of financing arose in 2018. It is important to note that the epicenter of this phenomenon may move from the US (the dollar) to Europe (the euro).

**Net Issuance of Eurozone Govt. Bonds (as a Proportion of GDP) and Interest on 10-Year Govt. Bond**  
Chart 5



Source: ECB, Eurostat, IMF, Haver Analytics; compiled by DIR.

Note: Interest on 10-year government bond is a weighted average for the Eurozone overall. Outlook beyond 2018 produced by DIR based on IMF and ECB outlooks.

## Economic impact of US-China cold war: Not devastating, but can't be ignored

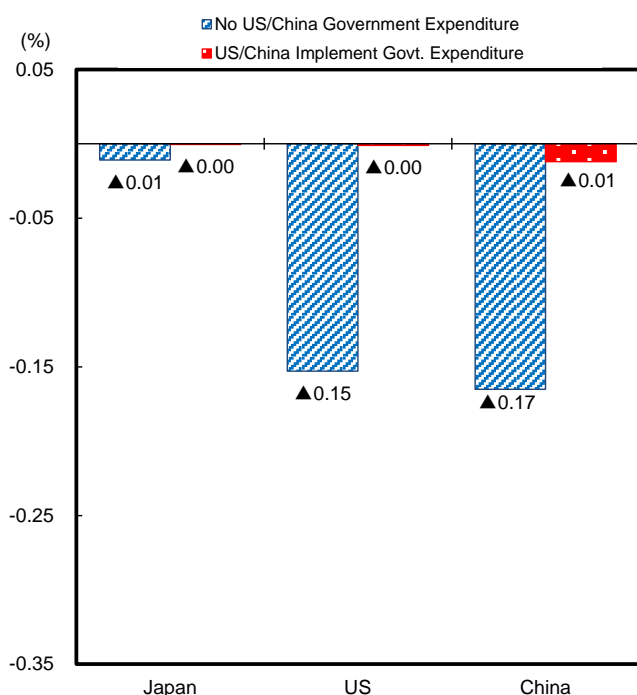
As was explained earlier in this report, the effects of the US-China cold war should become more apparent in the future. Using the DIR macro model, we estimated the economic impact of the US-China cold war (Charts 6-9). Charts 6 & 7 assume that US additional tariffs of 10% on the equivalent of 200 billion dollars in goods imported from China are left as is, while Charts 8 & 9 assume that the tariff rate is raised to 25%.

The question of which of these assumptions is closest to what happens in the future remains in flux at this time. However, as we pointed out in our monthly outlook for the Japanese economy in October



2018<sup>5</sup>, there is a very good possibility that the US-China cold war will continue for the mid to long-term.

**Estimation of Effects of Tariffs (Summary)**  
Chart 6



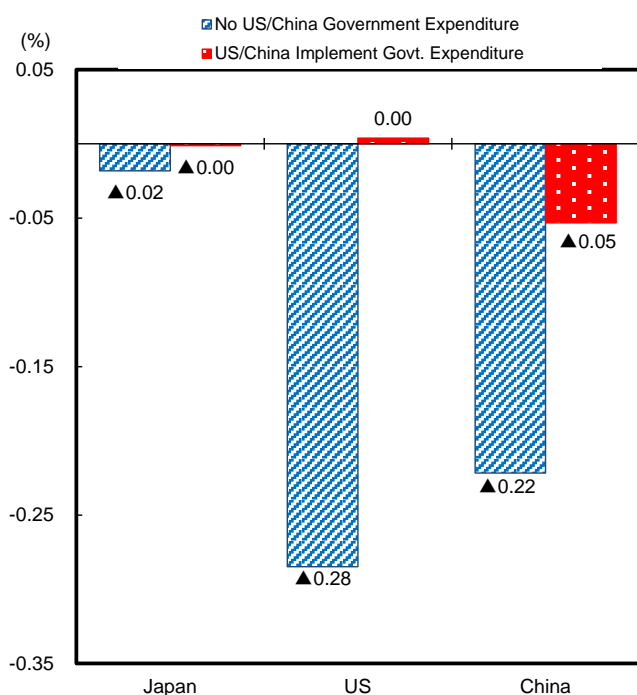
Source: Estimates produced using the DIR macro model.  
Note: All figures are real. Rate of deviation from actual value.

**Effects of Tariffs on Japan, US, and China (Detailed Version)**  
Chart 7

Effects on Chinese Economy		Real GDP	Personal Consumption	Capex	Government Expenditure	Exports	Imports
No US/China Govt. Expenditure	Deviation Rate	▲0.17	▲0.34	▲0.06	0.00	▲0.30	▲0.32
	Contribution Rate		▲0.13	▲0.03	0.00	▲0.06	0.06
US/China Implement Govt. Expenditure	Deviation Rate	▲0.01	▲0.34	▲0.00	0.93	▲0.22	▲0.20
	Contribution Rate		▲0.13	▲0.00	0.13	▲0.04	0.03
Effects on US Economy		Real GDP	Personal Consumption	Capex	Government Expenditure	Exports	Imports
No US/China Govt. Expenditure	Deviation Rate	▲0.15	▲0.26	▲0.20	0.00	▲0.09	▲0.47
	Contribution Rate		▲0.18	▲0.03	0.00	▲0.01	0.08
US/China Implement Govt. Expenditure	Deviation Rate	▲0.00	▲0.26	▲0.00	1.08	▲0.07	▲0.05
	Contribution Rate		▲0.18	▲0.00	0.18	▲0.01	0.01
Effects on Japan's Economy		Real GDP	Personal Consumption	Housing Investment	Capex	Exports	Imports
No US/China Govt. Expenditure	Deviation Rate	▲0.01	▲0.00	▲0.00	▲0.08	▲0.12	▲0.11
	Contribution Rate		▲0.00	▲0.00	▲0.01	▲0.02	0.02
US/China Implement Govt. Expenditure	Deviation Rate	▲0.00	▲0.00	▲0.00	▲0.00	▲0.00	▲0.00
	Contribution Rate		▲0.00	▲0.00	▲0.00	▲0.00	0.00

Source: Estimates produced using the DIR macro model.  
Notes: 1) Estimated effects assuming US imposes tariff of 25% on 50 billion dollars' worth of Chinese imports, plus another 10% on 200 billion dollars' worth of Chinese products, and China imposes tariff of 25% on 50 billion dollars' worth of imports from the US, and 7.4% on \$60 billion worth.  
2) All figures are real. Rate of deviation from actual value (%) and rate of contribution to GDP (%pt).

**Estimation of Effects of Tariffs (Summary)**  
Chart 8



Source: Estimates produced using the DIR macro model.  
Note: All figures are real. Rate of deviation from actual value.

**Effects of Tariffs on Japan, US, and China (Detailed Version)**  
Chart 9

Effects on Chinese Economy		Real GDP	Personal Consumption	Capex	Government Expenditure	Exports	Imports
No US/China Govt. Expenditure	Deviation Rate	▲0.22	▲0.34	▲0.08	0.00	▲0.57	▲0.38
	Contribution Rate		▲0.13	▲0.03	0.00	▲0.12	0.06
US/China Implement Govt. Expenditure	Deviation Rate	▲0.05	▲0.34	▲0.02	0.93	▲0.41	▲0.24
	Contribution Rate		▲0.13	▲0.01	0.13	▲0.09	0.04
Effects on US Economy		Real GDP	Personal Consumption	Capex	Government Expenditure	Exports	Imports
No US/China Govt. Expenditure	Deviation Rate	▲0.28	▲0.50	▲0.38	0.00	▲0.10	▲0.87
	Contribution Rate		▲0.35	▲0.06	0.00	▲0.01	0.14
US/China Implement Govt. Expenditure	Deviation Rate	0.00	▲0.50	0.01	2.07	▲0.08	▲0.08
	Contribution Rate		▲0.35	0.00	0.35	▲0.01	0.01
Effects on Japan's Economy		Real GDP	Personal Consumption	Housing Investment	Capex	Exports	Imports
No US/China Govt. Expenditure	Deviation Rate	▲0.02	▲0.01	▲0.00	▲0.13	▲0.19	▲0.18
	Contribution Rate		▲0.00	▲0.00	▲0.02	▲0.03	0.03
US/China Implement Govt. Expenditure	Deviation Rate	▲0.00	▲0.00	▲0.00	▲0.01	▲0.01	▲0.01
	Contribution Rate		▲0.00	▲0.00	▲0.00	▲0.00	0.00

Source: Estimates produced using the DIR macro model.  
Notes: 1) Estimated effects assuming US imposes tariff of 25% on 250 billion dollars' worth of Chinese imports, and China imposes tariff of 25% on 50 billion dollars' worth of imports from the US, and 7.4% on \$60 billion worth.  
2) All figures are real. Rate of deviation from actual value (%) and rate of contribution to GDP (%pt).

<sup>5</sup> See report in Note 2.

## **Collapse in price of crude oil could offset negative impact of US-China tariffs**

Conversely, there are also some positive factors for the global economy beyond 2019, mainly the recent collapse of the price of crude oil, which is especially good news for advanced industrialized countries. The WTI crude oil futures price continued to rise after 2016, reaching the mid-seventies per barrel in April 2018. Currently it is at the mid-fifties per barrel, dropping nearly \$20/bbl.

Using IMF past calculations<sup>6</sup>, when the price of crude oil drops by \$10/bbl, the global economy is expected to be pushed up cumulatively by a maximum of around 0.2%pt (around 0.1%pt in a single year). Therefore, if the price of crude oil continues to decline by \$20/bbl in comparison to the April 2018 price, it could offset the negative impact of the US-China tariffs discussed in the previous section.

## **Will the US fiscal policy second round help accelerate the global economy?**

Another question that brings at least some hope is the second round of the US fiscal policy. There are many reasons why this should be discussed more seriously. Since the Democratic Party took the lower house in the US midterm elections, possibilities have increased that infrastructure investment, which the Republicans have continued to be against, may move forward. However, it is doubtful that this would be enough to conspicuously increase the growth rate of the global economy.

First of all there is the problem of revenue source which is often pointed out. In order to carry out investment in infrastructure cuts will have to be made elsewhere. Either that or find a way to increase revenue. Fiscal policy does not have any direct stimulating effect.

Secondly, the effects of the US tax cut will disappear in not too long. The US will be unable to avoid an economic slowdown unless it implements government spending large enough to offset it. According to Congressional Budget Office (CBO) calculations<sup>7</sup>, the effect of the tax cut in pushing up the growth rate is expected to be felt in 2019 as well as 2018. Most likely this reflects lead time. In either case, capital expenditure does not get counted in GDP until after the decision to cut taxes, after which corporations make decisions on what to do, then issue orders, select vendors, and actual projects get going. Therefore there is nothing odd about expecting the positive effect of the tax cut on GDP to remain in 2019. However, when we look at actual data, the New Orders Index of ISM Manufacturing Report on Business peaked out at the end of 2017 and has since then been in continual decline. Hence possibilities are great that despite the above mentioned lead time, the effects of the tax cut will most likely decline in 2019 in comparison to 2018.

Third, if enough government spending is implemented to offset the falling away of the tax cut effect, this will serve to expand the budget deficit, which would mean issuing more government bonds. As was explained previously in this report, this would cause the cost of dollar financing to increase even more. So even if the US can avoid a slowdown in its economic growth rate, this would have a negative effect on other economies. It is therefore quite possible that there will not necessarily be an overall positive effect on the global economy from US developments.

In light of the above reasoning, there is a good possibility that the growth rate of the global economy will continue to slow down through the year 2019. As long as the negative impact of the raising of US-China tariffs does not become any larger than it is now, there is a good possibility that the collapse in the price of crude oil could offset some of the damage. However, in cyclical terms, inventory adjustment will continue, and due especially to the credit squeeze centering on the US and Europe, the global economy will continue its moderate structural slowdown. It of course goes without saying that the effect of exports on pushing up the Japanese economy's growth rate will be limited for some time.

<sup>6</sup> IMF, "[World Economic Outlook \(WEO\) April 2016 -Too Slow for Too Long-](#)"

<sup>7</sup> CBO, "[The Budget and Economic Outlook: 2018 to 2028](#)"



## **Outlook for the Japanese economy in 2019: Price of crude oil and consumption tax hike countermeasures will decide between expansion & contraction**

Considering the above arguments, the outlook for Japan's economy in 2019 shows high probability that expansion will continue, though at a pace falling below that of Japan's potential growth rate. The major factors here are the fact that overseas demand is marking time, and inventory is in an adjustment phase. The importance of domestic demand will increase relatively as the contribution of overseas demand to economic growth continues to decline, but there are both positive and negative factors in store for domestic demand in the future. One of the positive factors is the fall in the price of crude oil. On the other hand, the consumption tax hike planned for October 2019 will act as a negative factor on the growth rate.

First we look at the price of crude oil. The import value of crude oil and unrefined oil entering Japan totaled 7.2 trillion yen on a performance basis in 2017. The WTI crude oil futures price averaged \$50/bbl in 2017. In a simple calculation, when the import price of crude oil rises 40%, import value of crude oil rises by around 2.9 trillion yen. Nominal GDP is then expected to be pushed down by the same amount. There was concern that when the WTI crude oil futures price temporarily hit the mid-seventies (\$/bbl) in mid-2018 that the effect would be a negative factor bringing down Japan's economic growth rate. However, the WTI crude oil futures price is currently at a lower level in the mid-fifties (\$/bbl), and if it settles at a lower price, the negative effect will evaporate.

On the other hand, the consumption tax hike planned for October 2019 will act as a negative factor on the growth rate. The tax rate will be raised by 2%pt at that time, and is expected to bring in an increase of around 5.6 trillion yen in tax revenue for the government (meaning an increase in household burden). But at the same time, a reduced tax rate will also be introduced, thereby reducing tax revenue by around 1.0 trillion yen and lightening household burden. Free preschool and advanced education for those who qualify is expected to reduce tax revenue further at around 1.4 trillion yen and lightening the burden of households. Ultimately, tax revenues are expected to increase by around 3.2 trillion yen (meaning an increase in household burden).

Therefore, roughly speaking, the effects of the collapse of the price of crude oil and increased household economic burden as a result of the increase in consumption tax are about the same<sup>8</sup>. If these two factors offset each other, the only major factors influencing the future of Japan's economy would be inventory adjustment and overseas demand. We therefore feel that a more probable outlook for Japan's economy is that it will settle into a growth rate just below that of the potential growth rate.

Of course, the discussion here touches upon only the direct effects of fluctuations in the price of crude oil and the increase in consumption tax. In the following section we discuss the influence of these factors on Japan's economy in further detail.

### **Fluctuation of \$20 in the WTI price would have an effect of 1.6 trillion yen on corporate earnings (manufacturing 0.4 tril yen, non-manufacturing 1.1 tril yen)**

As for the price of crude oil, we consider the effects of price change on the corporate sector using an input-output table. A crude oil price fluctuation would be a negative factor for effecting profits in the corporate sector. Japan depends on imports for the majority of its energy needs. A lot of corporations benefit from low crude oil prices. A low in crude oil prices causes the variable cost ratio to decrease, which in turn decreases the break-even point for most corporations, causing profitability to improve.

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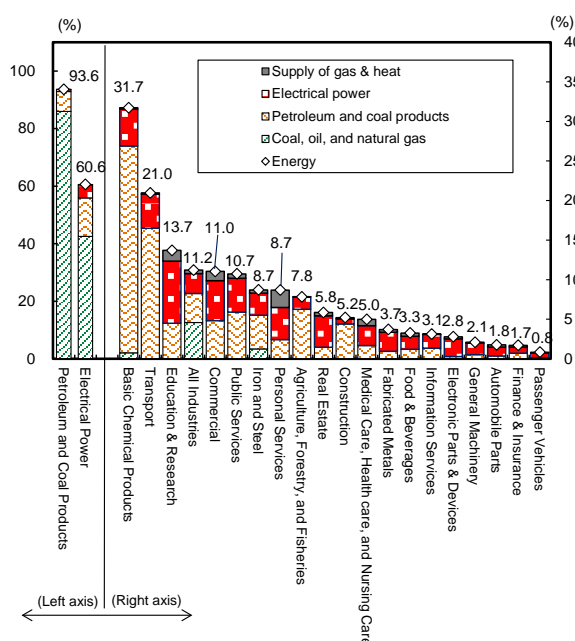
<sup>8</sup> We must of course keep in mind that in many cases long-term contracts exist associated with the import of energy resources, so fluctuations in the spot price do not have much of a direct effect on Japan's economy in the short-term.

At the same time, the extent of the effect also depends on the cost structure of particular industries and corporations. The extent of influence is not uniform across all industries and businesses. Chart 10 shows the percentage of intermediate inputs accounted for by energy inputs for all industries. As indicated by the chart, there are only two industries in Japan which carry out direct inputs in crude oil. These are petroleum & coal products, and electrical power. The vast majority of Japanese corporations do not have direct inputs in crude oil, but rather in refined petroleum and coal products and electrical power. Hence most corporations do not experience the immediate effect of low crude oil prices. The advantage of a crude oil price low is first experienced at the point of price pass-through in the form of the decreasing cost of petroleum and coal products and electrical power.

Based on this input-output structure, we estimated the effects of crude oil price lows on corporate earnings (operating surplus) shown in Chart 11. Our result on an all industry basis finds that the effect in monetary terms would be 1.6 trillion yen. Looking at results by industry, we see that manufacturing is estimated to 0.4 trillion yen in earnings fluctuation, while non-manufacturing would be at 1.1 trillion yen.

Our assumptions in these estimates were that the price of crude oil decreases or falls by 20%, with the average WTI price at around \$95/bbl – the average price in 2011. In terms of actual amounts, we assume that the pattern to be in keeping with the price rise between the beginning of the year and the month of October, followed by a collapse of the price of crude oil of the extent that was recently seen. However, since these estimates use the input-output structure as it stood in 2011, as well as the average value of price pass-through of that year, results should be taken with a certain grain of salt.

**Percentage of Intermediate Inputs Accounted for by Energy Inputs in All Industries**  
Chart 10



Source: Ministry of Economy, Trade, and Industry; compiled by DIR.  
Note: Figures for 2011 are estimates based on the input-output structure.

**Effect of 20% Decrease in Price of Crude Oil on Corporate Earnings (Operating Surplus)**  
Chart 11

	Amount Y bil	Rate of Change %
All Industries	1,557	1.9
Manufacturing	422	3.9
Food & Beverages	22	0.6
Textiles & Clothing	3	7.3
Lumber, Wood Products, and Furniture	3	1.5
Pulp, Paper, and Paper Products	13	3.4
Printing, Plate-Making & Bookbinding	3	0.6
Chemicals	205	14.5
Petroleum and Coal Products	-39	-26.2
Plastic Products	5	3.7
Ceramics, Stone, and Clay Products	21	5.2
Iron and Steel	122	25.8
Non-ferrous Metals	7	6.2
Fabricated Metals	7	2.2
General Machinery	11	1.0
Electrical Machinery	5	1.6
Information and communication electronics equipment	2	1.5
Electronic Parts and Devices	6	7.1
Transport Equipment	18	2.3
Precision Machinery	1	1.0
	5	1.7
Non-manufacturing	1,135	1.5
Agriculture, Forestry, and Fisheries	31	0.9
Mining	6	22.8
Coal, Crude Oil, Natural Gas	-13	-125.0
Recyclable Resource Collection & Processing	1	5.7
Construction	93	20.7
Electrical Power	203	24.8
Wholesale & Retail	140	0.9
Finance & Insurance	8	0.1
Real Estate	8	0.1
Transport	212	10.1
Information and communication	21	0.5
Public Sector	58	-
Education & Research	46	45.2
Medical Care, Insurance, Social Insurance & Nursing Care	44	1.7

Source: Ministry of Economy, Trade, and Industry, Bank of Japan; compiled by DIR.  
Note: Figures for 2011 are estimates based on the input-output structure.

## Fluctuation of \$20 in the WTI price would cause real GDP to fluctuate by 0.22%, with nominal GDP at 0.97%

In addition to the effects on the corporate sector outlined in the previous section, fluctuations in the price of crude oil also affect real income and thus the household sector as well. Here we make use of the DIR macro-economic model to perform an overall analysis of the influence on the entire Japanese economy. Results are shown in Chart 12. According to the results of our simulation, if the price of crude oil were to fluctuate by \$20/bbl, real GDP between the first year and the third year would fluctuate as follows: 0.22% in the first year, 0.26% in the second year, and 0.24% in the third year.

Looking at results by demand component, we see that a decrease in the price of crude oil would bring an increase in personal consumption due to the increase in real wages, while housing investment would also be expected to increase. In addition, the increase in corporate earnings would bring upward pressure on capital expenditure. Meanwhile, household income would increase as a portion of the decline in corporate earnings would become manifest in the form of an increase in real wages. The increase in corporate income would also contribute to an increase in household demand.

As for prices in general, the price of imports would decrease, bringing downward pressure on the corporate goods price index (CGPI) and core CPI, causing the domestic demand deflator to decrease. This would cause the import deflator (a deductible item) to decrease considerably, in turn causing the GDP deflator to increase. As a result, nominal GDP would be forced upwards more than real GDP. Hence nominal GDP between the first year and the third year would be forced downwards as follows: 0.97% in the first year, 0.90% in the second year, and 0.98% in the third year.

Therefore, if the WTI crude oil futures price were to hit a high in the mid-seventy dollar range (\$/bbl), Japan's 2019 real GDP could be pushed down by somewhere between 0.22% and 0.26%, while nominal GDP could be pushed downwards by between 0.90% and 0.98%. However, the price of crude oil has recently been going through a correction phase, so if the WTI crude oil futures price settles on the low side of the mid-fifty dollar range (\$/bbl), the Japanese economy could instead receive positive influence to the same degree as described above.

Effect of \$20/bbl Decrease in Price of Crude Oil on Japan's Economy

Chart 12

		Real GDP %	Real Personal Consumption %	Real Housing Investment %	Real Capital Expenditure %	Real Exports %	Real Imports %	Nominal GDP %	GDP Deflator %
\$20/bbl Decrease in Price of Crude Oil	1st year	0.22	0.35	0.67	0.86	0.17	1.10	0.97	0.74
	2nd year	0.26	0.45	1.02	0.96	0.18	1.32	0.90	0.64
	3rd year	0.24	0.39	0.82	1.04	0.18	1.25	0.98	0.74

		Current Account Balance / Nominal GDP %pt	Import Prices %	Export Prices %	CGPI %	Core CPI %	Industrial Production %	Indices of Tertiary Industry Activity %	Indices of All Industry Activity %
\$20/bbl Decrease in Price of Crude Oil	1st year	0.89	-7.52	-0.89	-1.19	-0.42	0.42	0.22	0.24
	2nd year	0.87	-7.59	-0.89	-1.22	-0.62	0.50	0.26	0.29
	3rd year	0.97	-7.60	-0.89	-1.25	-0.58	0.48	0.25	0.28

Source: Compiled by DIR.

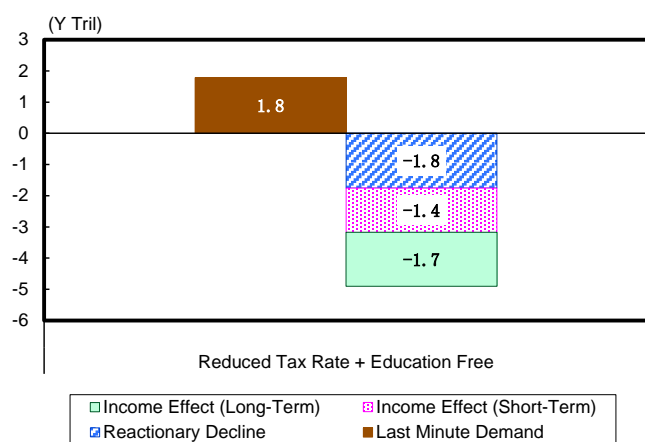
## Effects of consumption tax hike: after the initial last-minute demand, a negative income effect will occur, lasting from the second half of FY2019 through the first half of FY2020

Next we examine the effects of the consumption tax hike planned for October 2019 on personal consumption. The results of our estimates using the DIR macro model are shown in Charts 13 & 14. The macro model utilizes a consumption function estimated using past trends in consumption. The macro model utilizes a consumption function, which is estimated from trends in consumption since the increase in consumption tax implemented in April 2014.

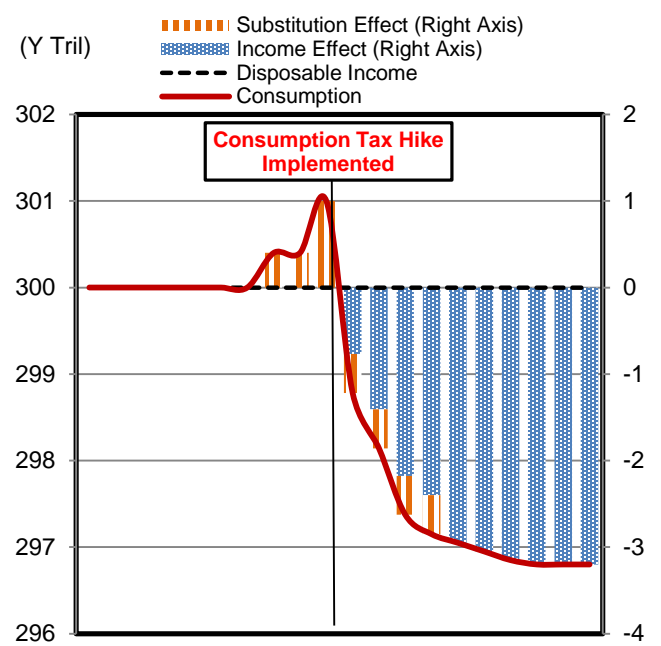
The results of estimates tell us that there are a wide variety of possible effects depending on the assumptions used. At this time the case with the highest probability of being implemented is the consumption tax hike with reduced tax rate + free preschool and advanced education. The substitution effect is expected to be ±1.8 trillion yen. And most importantly, the income effect is set at -3.2 trillion yen.

Naturally, the ratchet effect is also at work, so the negative effect on households in the form of real income is not immediately reflected in consumption. The negative effect which is generated immediately after the tax hike is expected to be at around -1.4 trillion yen. This means that the full extent of the FY2019 consumption suppression effect will not become manifest right away. The consumption suppression effect could cause a drag on the economy all the way through FY2020 and beyond.

**Effects of Increase in Consumption Tax**  
Chart 13



**Effects of Increase in Consumption Tax: (Time Series)**  
Chart 14



Source: Cabinet Office; compiled by DIR.

- Notes: 1) The income effect as estimated here reflects the short-term effects based on marginal propensity to consume. It is possible that a negative income effect will occur which in the long-term is equivalent to tax burden x average propensity to consume - income effect (short-term). For this reason the same effect was used. Meanwhile, the long-term income effect is expressed in real terms making use of the predicted value of prices as of the point when the tax hike occurs (2019Q4).
- 2) Last-minute demand is generated in 2019 Q1-Q3, and reactionary decline is assumed to be during 2019 Q4-2020 Q3.
- 3) Preschool education is completely free for ages 3-5, but for ages 0-2 it may be limited to households that are untaxed. Advanced education may also be free for households exempt from local taxes. For amounts, we referred to the Bank of Japan report "Outlook for Economic Activity and Prices, April 2018."
- 4) These estimates are based on certain assumptions, and figures should be taken with a certain grain of salt.

Source: Compiled by DIR.

## Overview of tax hike countermeasures: Expenditures to expand beyond extent of tax hike itself. Spending increase favors public investment

A variety of countermeasures are to be put in place as a means of keeping the effects of the increase in consumption tax on the economy under control. Countermeasures are included mostly in the FY2019 initial budget proposal. Overall measures are total around 2.0 trillion yen, or an increase in expenditures equivalent to six months of the tax hike effect (October 2019 to March 2020). In other words an amount which is larger than new tax revenue gained.

According to the budget, general account expenditure for the overall FY2019 budget which includes the economic measures comes to around 101.5 trillion yen (exceeding the FY2018 initial budget of 97.7 trillion yen by around 3.8 trillion yen). Taking a look at the contents, we see that in addition to the above mentioned consumption tax hike countermeasures, there are some basic items that are already well-known, such as the natural increase in social security (0.48 tril yen), enhancement of social programs including free preschool education (0.72 tril yen), increase in local allocation tax grants (0.47 tril yen), and an increase in debt servicing costs (0.21 tril yen for issuance of government bonds).

However, looking at the detailed contents of consumption tax hike countermeasures, we see that households will not gain much in direct benefits, as most of it is going to the construction related industries, with the majority of the expected 1.30 trillion yen expected to be spent on public investment, especially projects related to disaster prevention and mitigation, and national resilience to natural disasters.

On the other hand, there are some policies being suggested which are expected to have a direct effect on easing the situation just before and after the consumption tax hike (in other words smoothing out the peaks and valleys caused by last-minute demand and reactionary decline). These include support for automobile purchases, support for housing purchases, reward points for users of cashless payment systems, and issuance & sale of premium gift certificates.

A summary of each of the major economic measures is provided below.

First, in the area of automobile purchases, the tax based on environmental performance which is paid at purchase (0-3% of the purchase price depending on fuel consumption)<sup>9</sup> will be reduced for a period of one year after the consumption tax is increased (Oct. 2019). The rate of the tax cut will be 1%. Furthermore, the yearly tax paid on automobile ownership will be permanently reduced by a maximum of 4,500 yen starting when the consumption tax is increased.

At the same time, the eco-car tax reduction effecting the automobile acquisition tax will be applied at a lower rate (April-September 2019) as a means of keeping last-minute demand under control just before the increase in consumption tax. Moreover, the eco-car tax reduction effecting the automobile weight tax will get less of a reduction beginning in May 2019. These steps are expected to have a neutral effect on the economy, with net tax reduction expected to be no more than around 0.05 trillion yen.

Next is housing, where a purchase support policy is to go into effect after the consumption tax hike goes into effect. First of all, the reduced tax on home purchases which is now in effect will get a three-year extension<sup>10</sup> on its period of validity (now ten years after purchase), bringing the new period of validity to a period of thirteen years. The amount of the tax reduction during the three-year extension will be the lesser of the following two methods of calculating the tax refund – 2% of the price of the building divided by 3, or 1% of the balance of the housing loan refunded at the end of each year.

<sup>9</sup> The current automobile acquisition tax paid upon purchase will be abolished when the consumption tax increase goes into effect.

<sup>10</sup> The cost of this extension is not included in FY2019 budget.

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Homes that are occupied between the time the consumption tax hike goes into effect October 2019 and end December 2020 will qualify for the program. The total tax reduction is expected to be around 0.11 trillion yen.

Meanwhile, the current housing subsidy supporting purchasers of homes will be made applicable to a broader range of incomes while the benefit payout will also be increased. The annual income criterion will be increased from under 5.1 million yen to under 7.75 million yen, with maximum payout increased from 300,000 yen to 500,000 yen. The period for the increase will be until end December 2021. Overall it would reach a scale of around 0.08 trillion yen. A new version of the housing points system, in which building an eco-home with a certain performance level, or having an existing home remodeled with eco-home characteristics will earn the buyer/owner points, is to be established. Qualifying home contracts and terms are as follows. Custom-built homes and remodeling projects: contract signed and construction started between April 2019 and March 2020; standard homes (housing developments etc.): purchase contracts signed between date of cabinet decision through March 2020. Terms of delivery: after October 2019. The new program is reach a scale of 0.13 trillion yen.

As for the point redemption policy for consumers utilizing cashless payment systems, redemption would be 5% from small and medium-sized retail stores, and 2% from major franchise chain stores. Period of implementation is from the time the consumption tax hike goes into effect (Oct. 2019) till June 2020 (a period of nine months). The program is estimated to reach a scale of 0.28 trillion yen on the basis of the budget. However, the scale of point redemption will depend on the extent to which consumers shift their focus to small and medium-sized retail stores, as well as the extent of growth in the ratio of cashless payments. Hence this estimate needs to be viewed with a certain grain of salt.

Now we come to the premium gift certificate program. This program focuses on low income persons (households that qualify for a residence tax exemption), and households with children between ages 0-2 years. Households that qualify can purchase a maximum of 25,000 yen worth of gift certificates for only 20,000 yen. If there are a large number of children in the qualifying age bracket, the number of purchases may be equivalent to the number of children. The valid period of the gift certificates will last from the time the consumption tax hike goes into effect (Oct. 2019) till March 2020 (a period of six months).



## Japan's Economic Outlook No.199 Update

	FY17	FY18 (Estimate)	FY19 (Estimate)	CY17	CY18 (Estimate)	CY19 (Estimate)
<b>Main economic indicators</b>						
Nominal GDP (y/y %)	2.0	0.9	1.9	1.7	0.9	2.0
Real GDP (chained [2011]; y/y %)	1.9	0.9	0.8	1.9	0.8	1.1
Domestic demand (contribution, % pt)	1.4	0.9	0.7	1.3	0.7	1.1
Foreign demand (contribution, % pt)	0.4	-0.0	0.2	0.6	0.1	-0.0
GDP deflator (y/y %)	0.1	0.0	1.1	-0.2	0.1	0.9
Index of All-industry Activity (y/y %)*	1.8	0.8	1.1	1.6	0.8	1.2
Index of Industrial Production (y/y %)	2.9	0.8	1.8	3.1	0.8	1.9
Index of Tertiary Industry Activity (y/y %)	1.0	0.9	0.9	0.7	0.9	1.1
Corporate Goods Price Index (y/y %)	2.7	2.2	2.5	2.3	2.4	1.8
Consumer Price Index (excl. fresh food; y/y %)	0.7	0.9	1.0	0.5	0.9	0.9
Unemployment rate (%)	2.7	2.4	2.5	2.8	2.4	2.4
Government bond yield (10 year; %)	0.05	0.08	0.10	0.05	0.07	0.10
Balance of payments						
Trade balance (Y tril)	4.6	2.6	4.7	5.0	2.3	3.9
Current balance (\$100 mil)	1,968	1,780	1,953	1,957	1,745	1,871
Current balance (Y tril)	21.8	20.3	22.5	22.0	19.3	21.1
(% of nominal GDP)	3.9	3.7	4.0	4.0	3.5	3.8
<b>Real GDP components</b> (Chained [2011]; y/y %; figures in parentheses: contribution, % pt)						
Private final consumption	1.0 (0.6)	0.6 (0.4)	0.4 (0.2)	1.1 (0.6)	0.4 (0.2)	0.9 (0.5)
Private housing investment	-0.7 (-0.0)	-4.3 (-0.1)	1.5 (0.0)	2.1 (0.1)	-5.8 (-0.2)	2.8 (0.1)
Private fixed investment	4.6 (0.7)	3.5 (0.6)	1.5 (0.2)	3.9 (0.6)	3.7 (0.6)	2.2 (0.4)
Government final consumption	0.4 (0.1)	0.6 (0.1)	0.7 (0.1)	0.3 (0.1)	0.6 (0.1)	0.7 (0.1)
Public fixed investment	0.5 (0.0)	-2.4 (-0.1)	1.5 (0.1)	0.7 (0.0)	-2.2 (-0.1)	0.6 (0.0)
Exports of goods and services	6.4 (1.1)	2.4 (0.4)	2.5 (0.4)	6.8 (1.1)	3.3 (0.6)	2.4 (0.4)
Imports of goods and services	4.1 (-0.6)	2.4 (-0.4)	1.5 (-0.3)	3.4 (-0.5)	2.8 (-0.5)	2.5 (-0.4)
<b>Major assumptions:</b>						
<b>1. World economy</b>						
Economic growth of major trading partners	4.2	3.8	3.6	4.1	4.0	3.6
Crude oil price (WTI futures; \$/bbl)	53.6	63.3	55.0	50.9	65.3	55.0
<b>2. US economy</b>						
US real GDP (chained [2012]; y/y %)	2.4	3.0	2.2	2.2	2.9	2.5
US Consumer Price Index (y/y %)	2.1	2.4	2.3	2.1	2.5	2.2
<b>3. Japanese economy</b>						
Nominal public fixed investment (y/y %)	2.3	-0.7	3.0	2.4	-0.6	2.1
Exchange rate (Y/\$)	110.8	111.6	113.0	112.2	110.4	113.0
(Y/€)	130.3	129.1	128.0	127.2	130.2	128.0

Source: Compiled by DIR.

Note: Due to rounding, actual figures may differ from those released by the government.

\* Excl. agriculture, forestry, and fisheries.

Estimate: DIR estimate.