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Japan's Economy: Monthly Outlook (July 2018)

1. Estimating the Impact of the US-China Trade War
2. Outlook for the Labor Market: The Big Picture
3. Has the Phillips curve lost its validity?

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Summary

- As was analyzed in detail in our previous report, “Japan’s Economy: Monthly Outlook (June 2018)”, estimated impact on the real economy of additional tariff measures scheduled to be implemented or now being considered by the US and China is expected to be limited, with China at -0.14%, US -0.15%, and Japan at -0.01%. On the other hand, the IMF, as well as other international organizations, has also issued an estimate, which sees a -2% decline in the global economy if the cost of global trade rises by 10%. The deviation between the two estimates is due to the difference in assumptions. The growth rate in the cost of global trade associated with US-China tariff measures is more likely to be no more than 0.26%. Hence, using the IMF estimate, the impact on global GDP would be -0.05%. Even when we include additional tariffs on steel and aluminum, as well as retaliatory tariffs, the impact on global GDP would still be only -0.07%.
- In conclusion, the main risk to Japan’s economy is not the US-China trade war. For Japan, what comes later is a life or death question – whether or not additional tariffs will be levied on automobiles. Additional tariffs of 20% would cause global GDP to decline by -0.1%, but the cost to Japanese corporations due to tariffs on automobiles and automobile parts would grow by more than 1.7 tril yen. Hence the upcoming trade negotiations on automobiles will be Japan’s moment of truth.
- With structural factors unique to Japan, the labor market is moving into a new phase. While the decline in working-age population as such began sometime during the middle of the 1990s, the shortage of manpower only became evident around 2010 as a result of progress in the hollowing out effect. But now corporations have begun to seek out a cheap underutilized labor force as a result of the relative decline in unit labor cost. Until now, the majority of this market was accounted for by women part-time workers. Over the past few years, the labor participation rate of women has improved considerably, centering on the age-range of 30 to 50, and it is difficult to hold down a head count any larger than this. As a result, corporations are now taking new approaches to acquiring more workers. These are (1) changing the status of non-regular employees to that of regular employee as a means of extending average work hours, and (2) using the underutilized work force, which includes younger workers, the elderly, and foreigners.

- While the shortage of manpower deepens, the average wage does not rise, which leads some to question the validity of the Phillips curve. However, if we look at wage growth according to the Phillips curve and perform a breakdown by age-group, we find that in current-day Japan, the Phillips curve is still valid. The essential problem is that the labor market is tight only in the younger age range, while the figure for the middle-aged slacks off considerably. In other words, a “generational mismatch” has occurred between the profile of human resources being sought (demand for labor) and the labor supply. The current condition of Japan’s labor market is represented by the fact that wage inflation and deflation is partially mixed.

1. Estimating the Impact of the US-China Trade War

Rumors of Trade War Exceed Reality

Trump’s theatrics continue. As was reported last month, 818 items had additional tariffs of 25% imposed starting on July 6, or the equivalent of 34 billion dollars in tariff measures against China. The remaining items (the equivalent of 16 billion dollars) are being considered for further investigation or public comment in the future, with additional tariffs apparently planned to be implemented in August. In response to the US announcement of these tariffs, the Chinese government immediately implemented retaliatory tariffs. These will also be effected by additional tariffs starting on July 6, the equivalent of 34 billion dollars in American products imported by China. Meanwhile, another 16 billion dollars in tariffs against US imports is being considered. In response to China’s retaliatory tariffs, President Trump announced additional tariffs of 10% on 200 billion dollars’ worth of Chinese products.

Estimate of -2% decline in global GDP tends to be repeated without reference to its original assumptions

As was analyzed in detail in our previous report, “Japan’s Economy: Monthly Outlook (June 2018)”¹, we provided an in-depth analysis of the impact of US and Chinese trade policies which are currently planned on Japan’s economy and on Japanese corporate earnings, and concluded that as of this point impact on both the US and the Chinese economy is limited. Influence on Japan’s economy is also expected to be small. But the degree of attention placed on this question remains extremely high, and it is casting a long shadow over business confidence and the financial markets².

The reason for this may be the expression itself – the words “trade war” elicit a whole series of frightening associations starting with the effects of worldwide protectionism in the 1930s, including the Smoot-Hawley Tariff Act, resulting in The Great Depression, followed by the Second World War. International organizations such as the OECD and the IMF have also raised the alarm against the rise of protectionism. According to the OECD’s estimates, if the cost of global trade rises by 10% as a result of the US, the EU, and China raising tariffs, global trade will decline by 6%, and global GDP

¹ For details see the DIR report by Shunsuke Kobayashi and Yota Hirono entitled “Japan’s Economy: Monthly Outlook (June 2018),” dated 26 June, 2018. https://www.dir.co.jp/english/research/report/jmonthly/20180626_020176.html

² This conclusion actually differs from the opinion of the writer of this report. The deterioration of business confidence and adjustments in the financial markets have their source in completely different factors. These include (1) a downward revision of economic outlooks due to overly high expectations regarding the growth rate of the global economy, (2) exit strategies of central banks (the decline in liquidity supply), and (3) uncertainty regarding the direction of government policy (what are the real motives of the White House?). Therefore, the most likely catalysts leading to the return of risk appetite would be (1) the removal of uncertainty regarding US politics, (2) downward revisions of outlooks for the global economy becoming more scarce, and (3) the doing away of fears that interest rates will rise after October, 2018. For details see the DIR report by Shunsuke Kobayashi and Yota Hirono entitled “Japan’s Economy: Monthly Outlook (April 2018): How will Japan’s economy and corporate performance fare in US-China tariff dispute? Root cause of turmoil in the financial markets.” (April 20, 2018.) https://www.dir.co.jp/english/research/report/jmonthly/20180420_020060.html

will decline by 1.4%³. Meanwhile, the IMF estimates that if trade prices rise by 10% due to tariffs and other costs, international trade will fall by 15% in five years, and in the long-term it will be forced downwards by 16%. Global production will decline by 1.75% in five years, and in the long-term will decline by 2%⁴.

Daiwa Institute of Research (DIR) Estimate: China -0.14%, US -0.15%, Japan -0.01%

However, using the DIR macro model to estimate the impact on the Japanese, US, and Chinese economies of additional tariff measures which have been announced as of this time, we arrive at a much smaller number than estimated by international organizations. If the US places tariffs on the equivalent of \$250 billion in goods imported from China (a tariff of 25% on \$50 billion worth of Chinese goods and another 10% on \$200 billion worth of goods), and at the same time China places a tariff of 25% on \$50 billion worth of goods imported from the US, the estimate would be as shown in Chart 1 (details in Chart 2).⁵

Based on these assumptions, in the case where growth in government revenue due to the increase in tariffs does not lead to increased government expenditure, downward pressure on GDP would be -0.14% for China, -0.15% for the US, and -0.01% for Japan. If the government helps out by increasing expenditure the effects will be even smaller, with China at -0.02%, the US at +0.00%, and Japan at -0.00%.

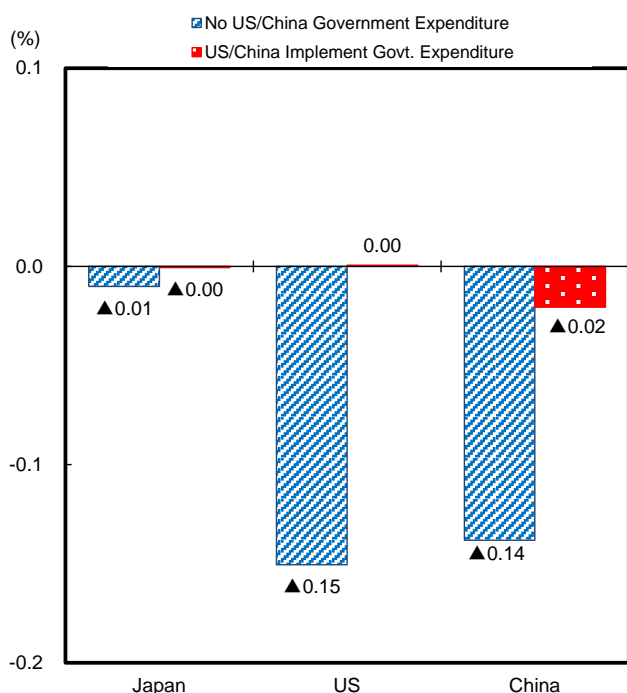
The impact on the real economy due to the US-China trade war will not necessarily be that large.

³ OECD, “Making Trade Work for All”, May 2017. <http://www.oecd.org/tad/making-trade-work-for-all.pdf> And in the OECD July 2018 report, “The Long View: Scenarios for the World Economy to 2060,” it states that if the global medium tariff rate rises by 3.5%pt, global per capita GDP will suffer long-term decline of 0.5%pt. The results of this estimate are in agreement with those of the IMF. https://www.oecd-ilibrary.org/economics/the-long-view_b4f4e03e-en

⁴ IMF, “World Economic Outlook, Subdued Demand: Symptoms and Remedies”, October 2016. https://www.imf.org/~media/Websites/IMF/imported-flagship-issues/external/pubs/ft/weo/2016/02/pdf_c1pdf.aspx

⁵ To explain how the model works in simple terms, first we assume that the increase in the tariff rate causes international competitiveness to fluctuate somewhat, and as a result, imports and exports are also caused to fluctuate. At the same time, real disposable income declines due to the rise in import prices bringing downward pressure on personal consumption. As a result of the downturn in domestic production, capex is also restrained. With these as our basic assumptions, we look at two cases – first where growth in government revenue due to the increase in tariffs does not lead to a resolution of the economic problems through increased government expenditure, and a second case where it does. Of course, we are only looking at the immediate effects on the Japanese, US, and Chinese economies here. There is still a possibility that there could be long-term effects, or that there could be a multiplier effect that becomes larger than our estimates suggest. However, if we consider the fact that while US-China trade could stagnate, Japan could increase substitution exports, thereby gaining the benefits of playing both ends of the game. We cannot ignore the possibility that the negative long-term multiplier effect could be offset by positives such as the substitution effect. For further detail, see the report mentioned in Note 1.

Estimated Effects of Tariffs (Summary)
Chart 1



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 Economies (Detailed Version)
Chart 2

Effects on Chinese Economy		Real GDP	Personal Consumption	Capex	Government Expenditure	Exports	Imports
No US/China Govt. Expenditure	Deviation Rate	▲0.14	▲0.25	▲0.05	0.00	▲0.30	▲0.25
	Contribution Rate		▲0.10	▲0.02	0.00	▲0.06	0.04
US/China Implement Govt. Expenditure	Deviation Rate	▲0.02	▲0.25	▲0.01	0.69	▲0.22	▲0.16
	Contribution Rate		▲0.10	▲0.00	0.10	▲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	▲0.07	▲0.46
	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	▲0.05	▲0.04
	Contribution Rate		▲0.18	0.00	0.18	▲0.01	0.01
Effects on Japan's Economy		Real GDP	Personal Consumption	Capex	Government Expenditure	Exports	Imports
No US/China Govt. Expenditure	Deviation Rate	▲0.01	▲0.00	▲0.00	▲0.07	▲0.11	▲0.10
	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	▲0.01	▲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 50 billion dollars' worth of Chinese imports and 10% on an additional 20 billion dollars, and China imposes tariff of 25% on 50 billion dollars' worth of imports from the US.
2) All figures are real. Rate of deviation from actual value (%) and rate of contribution to GDP (%pt).

Assumptions used in estimates by international organizations are unrealistic

Judging by the arguments in the previous section it may appear that there is a major discrepancy between the DIR estimates and the results of the IMF and the OECD. However, the reason for the deviation between the estimates is quite clear. The assumptions used are completely different.

Chart 3 summarizes the available data, and estimates that the growth rate in the cost of global trade in association with the increases in US and Chinese tariffs is 0.26% (see ① in the chart). In other words, the assumption used in the estimates of international organizations that the cost of global trade will rise by 10% is 40 times more than the one found in Chart 3. This is such a large figure that it is completely unrealistic.

According to the IMF model, impact of US-China trade war on the global economy is -0.05%pt

Using the result of the IMF estimate, we perform a linear calculation of the impact of an 0.26% increase in the cost of trade on the global economy. This gives us a result of -0.05%pt. This value is pretty much the same as the one calculated by DIR in the previous section. When we multiply the actual portion of the global economy which the US and Chinese economies each account for, we obtain the figure -0.06%pt. If we also include the negative effects of other countries in the calculation, the ultimate effect would be somewhat larger than this. Therefore, we can say that the estimated value proposed by DIR is a more rigorous outlook than the estimate value produced by the IMF.

Of course, we cannot ignore the possibility that tariffs will not stop at the point currently decided upon. It is quite possible that China could implement additional retaliatory tariffs, and the US could raise tariffs on countries other than China, with retaliatory tariffs then being implemented by said countries.

Impact on global economy of tariffs on steel and aluminum seen at -0.02%pt

Next, as a thought experiment, let's take a look at the extent to which these factors will increase the cost of global trade. First, we look at the increase in the tariff on steel and aluminum, which has already been decided on. This is expected to increase the cost of global trade by 0.04%. If the various countries affected by this tariff implement retaliatory tariffs, this would again increase the cost of global trade by another 0.09%. Using the IMF's estimated value to calculate the effect on the global economy of these hypothetical tariffs, we arrive at -0.02%pt. (See ② in Chart 3.)

Tariff hike on automobiles would trigger decline of -0.10%pt in global economy

What will happen if a 20% tariff is levied on automobiles imported to the US as is now being considered? This would increase the cost of global trade by 0.24%. If the various countries affected by this tariff implement retaliatory tariffs, this would again increase the cost of global trade by another 0.49%. Using the IMF's estimated value to calculate the effect on the global economy of these tariffs, we arrive at -0.10%pt. This is twice the affect of the US-China trade war. Hence it is to be feared more than any other of the currently planned measures. (See ③ in Chart 3.)

Even when we add up all of the negative effects it still comes to only -0.17%

However, even when we add all of these items up, the cost of global trade is estimated to be pushed up by only 0.83%, while the global GDP would decline by -0.17%pt (Chart 3, ①+②+③).

If Europe abolishes its automobile tariff, global economy will be pushed up by +0.01%pt

Another possibility is what if Europe refuses to play this game of chicken that the US has thrust upon other nations? If this happens, there may be hope that Europe would abolish its tariff on automobiles, currently at 10%. If Europe abolishes its automobile tariff, the global cost of trade would decline by 0.02%, and the global economy would be pushed up by +0.00%pt (Chart 3, ⑤).

If this possibility becomes reality, the influence of tariff measures currently planned or being implemented would temporarily be limited, and it would be possible to keep the problem within the range of "damage being unevenly distributed in the industry and country in question", and "secondary damage."

Estimates of Effects of All Tariff Measures on Cost of Trade and Global Economy

Chart 3

① Tariffs Totaling \$250 bil for US, and \$50 bil for China				Effect on Global Economy			
	US	China	Total	OECD	IMF In 5-Yrs	IMF Long-Term	
Amount of Change in Tariff (Bil Dlr)	325.0	125.0	450.0	Rate of Change in Cost of Trade (%)	0.26	0.26	0.26
Rate of Change in Global Import Prices (%)	0.2	0.1	0.3	Change in Global Trade Volume (%pt)	-0.15	-0.39	-0.41
				Change in Global GDP (%pt)	-0.04	-0.04	-0.05

② US Tariff Hike on Steel and Aluminum				Effect on Global Economy			
	Steel	Aluminum	Total	OECD	IMF In 5-Yrs	IMF Long-Term	
Amount of Change in Tariff (Bil Dlr)	58.4	16.4	74.8	Rate of Change in Cost of Trade (%)	0.04	0.04	0.04
Rate of Change in Global Import Prices (%)	0.0	0.0	0.0	Change in Global Trade Volume (%pt)	-0.03	-0.06	-0.07
				Change in Global GDP (%pt)	-0.01	-0.01	-0.01
Case in Which Equal Amount in Retaliatory Tariffs is Implemented							
				Rate of Change in Cost of Trade (%)	0.09	0.09	0.09
				Change in Global Trade Volume (%pt)	-0.05	-0.13	-0.14
				Change in Global GDP (%pt)	-0.01	-0.01	-0.02

③ US Tariff Hike on Automobiles				Effect on Global Economy			
	Passenger Vehicles	Automobile Parts	Total	OECD	IMF In 5-Yrs	IMF Long-Term	
Amount of Change in Tariff (Bil Dlr)	310.0	115.3	425.3	Rate of Change in Cost of Trade (%)	0.24	0.24	0.24
Rate of Change in Global Import Prices (%)	0.2	0.1	0.2	Change in Global Trade Volume (%pt)	-0.15	-0.36	-0.39
				Change in Global GDP (%pt)	-0.03	-0.04	-0.05
Case in Which Equal Amount in Retaliatory Tariffs is Implemented							
				Rate of Change in Cost of Trade (%)	0.49	0.49	0.49
				Change in Global Trade Volume (%pt)	-0.29	-0.73	-0.78
				Change in Global GDP (%pt)	-0.07	-0.08	-0.10

Total Negative Effect (①+②+③)				Effect on Global Economy			
			Total	OECD	IMF In 5-Yrs	IMF Long-Term	
				Rate of Change in Cost of Trade (%)	0.83	0.83	0.83
				Change in Global Trade Volume (%pt)	-0.50	-1.24	-1.32
				Change in Global GDP (%pt)	-0.12	-0.14	-0.17

④ China Lowers Tariffs on Sundries and Automobiles				Effect on Global Economy			
	Sundries	Automobiles	Total	OECD	IMF In 5-Yrs	IMF Long-Term	
Amount of Change in Tariff (Bil Dlr)	-52.4	-45.9	-98.4	Rate of Change in Cost of Trade (%)	-0.06	-0.06	-0.06
Rate of Change in Global Import Prices (%)	0.0	0.0	-0.1	Change in Global Trade Volume (%pt)	0.04	0.09	0.10
				Change in Global GDP (%pt)	0.01	0.01	0.01

⑤ EU Lowers Tariffs on Automobiles				Effect on Global Economy			
		Automobiles	Total	OECD	IMF In 5-Yrs	IMF Long-Term	
Amount of Change in Tariff (Bil Dlr)		-43.5		Rate of Change in Cost of Trade (%)	-0.02	-0.02	-0.02
Rate of Change in Global Import Prices (%)		0.0		Change in Global Trade Volume (%pt)	0.01	0.04	0.04
				Change in Global GDP (%pt)	0.00	0.00	0.00

Total Positive Effect (④+⑤)				Effect on Global Economy			
			Total	OECD	IMF In 5-Yrs	IMF Long-Term	
				Rate of Change in Cost of Trade (%)	-0.09	-0.09	-0.09
				Change in Global Trade Volume (%pt)	0.05	0.13	0.14
				Change in Global GDP (%pt)	0.01	0.02	0.02

Grand Total				Effect on Global Economy			
			Total	OECD	IMF In 5-Yrs	IMF Long-Term	
				Rate of Change in Cost of Trade (%)	0.74	0.74	0.74
				Change in Global Trade Volume (%pt)	-0.44	-1.11	-1.18
				Change in Global GDP (%pt)	-0.10	-0.13	-0.15

Total of Tariffs Already Decided (①+②+④)				Effect on Global Economy			
			Total	OECD	IMF In 5-Yrs	IMF Long-Term	
				Rate of Change in Cost of Trade (%)	0.24	0.24	0.24
				Change in Global Trade Volume (%pt)	-0.14	-0.36	-0.38
				Change in Global GDP (%pt)	-0.03	-0.04	-0.05

Source: US Census Bureau, General Administration of Customs of the People's Republic of China, Eurostat, Ministry of Finance, FRB, OECD, IMF, World Bank, UN Comtrade, various news sources; compiled by DIR.

Notes: 1) US import content deducted from ④ and ⑤.

2) Data from China consists of 2016 performance values. Data from all other countries consists of 2017 performance values.

The main risk to Japan's economy is the automobile tariff

For Japan, the matter of greatest concern is the tariff now being considered by the US and which it may place on automobiles. President Trump ordered an investigation on May 23 regarding imports of automobiles and automobile parts based on Article 232 of the Trade Expansion Act of 1962. A concrete tariff rate and list of items affected will be revealed after the investigation is complete, but it has been reported that the tariff rate of 2.5% currently applied to passenger vehicles could increase to as much as a maximum of 20%.

Items which may be affected by an additional tariff and amounts in exports to the US are shown in Chart 4. Passenger vehicles, with a current tariff rate of 2.5%, have an export value of 4.5 tril yen, while automobile parts total 961.4 bil yen (figures based on 2017 performance). Together this totals 5.5 tril yen worth of Japanese exports which may be subject to additional tariffs. Assuming that all of these items are hit with an across-the-board tariff of 20%, the amount of increase in tariffs is estimated at 0.95 tril yen.

Meanwhile, the export value of passenger vehicles produced by Japanese automobile manufacturers in third countries, including Mexico and Canada, is also great. According to estimates produced by DIR, exports of Japanese passenger vehicles from third countries total 4.0 tril yen, an amount comparable to the 4.5 tril yen in autos exported directly from Japan. If exports from third countries, all NAFTA member countries, have tariffs increased from the current 0% to 20%, the amount of increase in tariffs will come to 0.8 tril yen. Add this to the amount of increase in tariffs on direct exports from Japan and you get 1.6 tril yen. The impact would literally be several orders of magnitude above what we currently experience. If we include the cost of increase in tariffs on automobile parts exported directly from Japan the amount comes to 1.75 tril yen, and Japan gets an even bigger hit when we include parts exported from third countries.

Hence the upcoming trade negotiations on automobiles will be Japan's moment of truth.

Effects of US Automobile Tariffs on Japanese Automobile Sales		Chart 4		
		Volume (Units)	Amount (¥100 Mil)	Amount of Tariff Hike (¥100 Mil)
①	Japanese cars sold in domestic US	6,641,216		
②	Japanese cars produced in domestic US	3,773,993		
③	Japanese cars exported from factories in domestic US	423,415		
④	Direct exports from Japan (excluding parts)	1,743,695	45,431	7,839
①-[②-③]-④=⑤	Exports from third countries	1,546,943	40,305	8,061
④+⑤	Total automobile exports to the US by Japanese manufacturers	3,290,638	85,736	15,900
⑥	Exports Automobile Parts from Japan		9,614	1,682
④+⑤+⑥	Total Automobile Related Exports of Japanese Corporations to US		95,350	17,582

Source: Automotive News, Haver Analytics, JAMA, Ministry of Finance; compiled by DIR.

Notes: 1) Volume and amount based on 2017 results. However, export amount from third countries estimated by multiplying unit price of direct exports with number of units.

2) Amount of tariff hike assumes (4): 2.5% ⇒ 25% and (5): 0% ⇒ 25%, (6): 2.5% ⇒ 20%.

2. Outlook for the Labor Market: The Big Picture

The shortage of manpower (or labor shortage) is a term which became common sometime after 2010, but now, after a number of years have gone by, we can see that the decline in working-age population began much earlier, sometime around the middle of the 1990s. This came to be called by the name “labor shortage” after more than twenty years passed, and most attempts to explain the labor shortage, strangely enough, base their arguments on the decline in working-age population.

On the other hand, though it is called a labor shortage, the number of employees in Japan (as shown in Chart 5) has continued to grow against all expectations. Meanwhile, the unemployment rate has fallen to just over 2%. In addition to the labor shortage, another term we hear is “full employment”, and yet the growth rate in wages is sluggish. It would be inappropriate to come up with an outlook for Japan’s labor market at this point without properly dealing with the paradoxes of the past. In fact, it would be harmful.

In this report we perform an analysis of Japan’s labor market from a broad perspective, taking a look at the big picture in laying the foundations for a constructive argument.

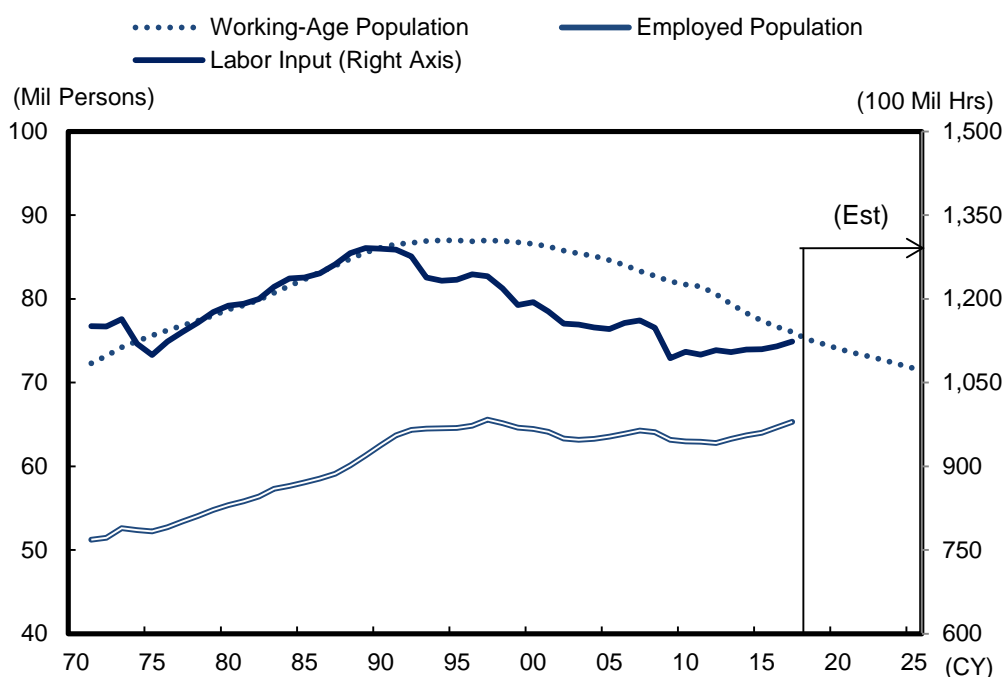
Japan’s “lost twenty-years” (1990 – 2010) were a loss for domestic employment

First of all, taking another look at Chart 5, we can get a sense of the long-term development in Japan’s labor market. Working-age population and total labor input pretty much move in tandem with each other. However, around 1990 correlation between the two breaks down, and for twenty years lasting until 2010, the rate of divergence spreads like an alligator gap.

Throughout this period gross domestic product remained flat. We could also view this phenomenon as an improvement in productivity per labor input. On the other hand, time-based employment was lost at a rate exceeding that of the decline in working-age population. Assessments of the period differ depending on which one of these phenomena one focuses on the most.

Structure of Japan’s Labor Market: Long-Term Changes

Chart 5



Source: Ministry of Health, Labour and Welfare, National Institute of Population and Social Security Research; compiled by DIR.

Over a period of twenty-years of stagnation, Japan returned to the state of a “not expensive country” (which is nearly equal to being poor) around 2010

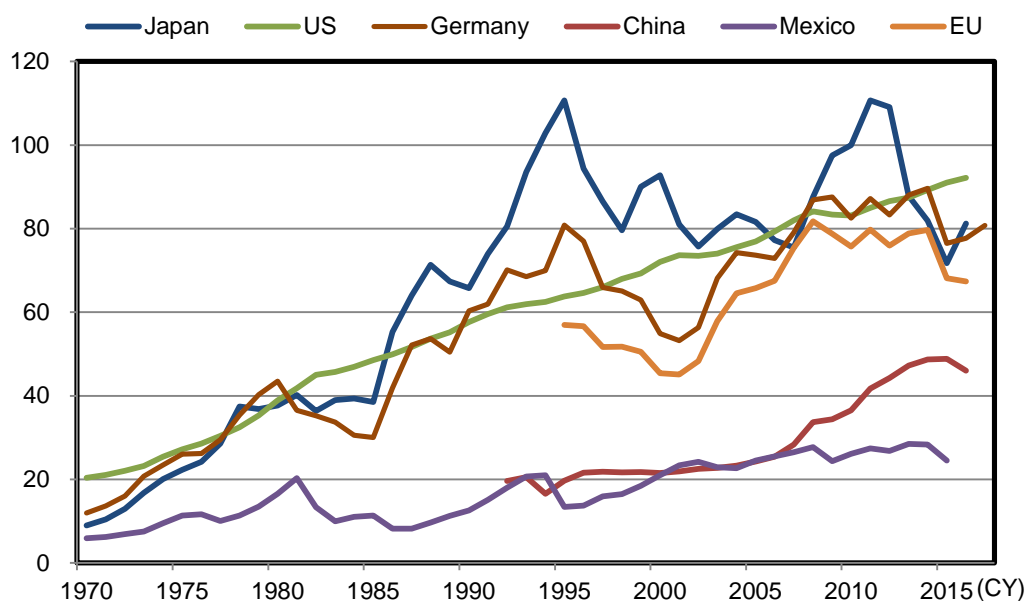
But the true nature of the phenomena occurring during this period is something else altogether – in fact, it is the hollowing out effect. As is shown in Chart 6, Japan’s unit labor cost⁶ exceeded that of the US and Germany during the latter 1980s as a result of the strong yen which ensued after the Plaza Accord. After Japan’s economic bubble burst around 1990, its nominal growth rate fell significantly (in other words productivity declined), but this was not offset by a sufficient decline in the nominal wage (downward rigidity of wages). Hence wages were high in comparison to productivity, much more so than other advanced nations. This caused Japan’s international competitiveness to fall significantly. Then, after the 1990s, China, leading the other Asian economies, sped up its entry into trade with the emerging nations of Asia. Japan’s domestic manufacturing of goods which had become difficult to differentiate from other makers lost its competitiveness to the point of hopelessness from the viewpoint of the cost of labor.

The result was the hollowing out effect – the rate of job losses exceeded the decline in working-age population. Looked at from yet another point of view, Japan’s productivity improved as a result of having abandoned areas of business which were relatively unproductive.

Then Japan’s unit labor cost was no longer higher than the US and Germany. This is due not only to the weak yen effect in recent years, but to the fact that wages did not grow at all during Japan’s lost twenty-years (meanwhile wages continued to rise in other countries). This has gradually neared the level it would need to be to realistically compete with China⁷. (It also means that Japan has become relatively poor.)

Unit Labor Cost of Japan, US, Germany, and Major Competing Nations

Chart 6



Source: OECD; compiled by DIR.

Note: Calculated on a dollar basis assuming Japan’s unit labor cost to be at 100 as of 2010.

⁶ Unit labor cost = total labor compensation ÷ gross production. To put it in simpler terms, it is a comparison of the cost of labor required to produce one television or one car. The higher the index goes, the lower a country’s international competitiveness is.

⁷ If an estimate is made of the unit labor cost based only on trade goods, the divergence between China and Japan has pretty much been resolved since 2015. For details on this point, see “Japan’s Economy: Monthly Outlook (Jan 2018): No wage increase without restructuring / “Race to the bottom” hinders virtuous circle based on domestic demand”, by Shunsuke Kobayashi (The DIR report, January 29, 2018).

Japanese corporations since 2010 after having taken advantage of cheap labor through the social advancement of women

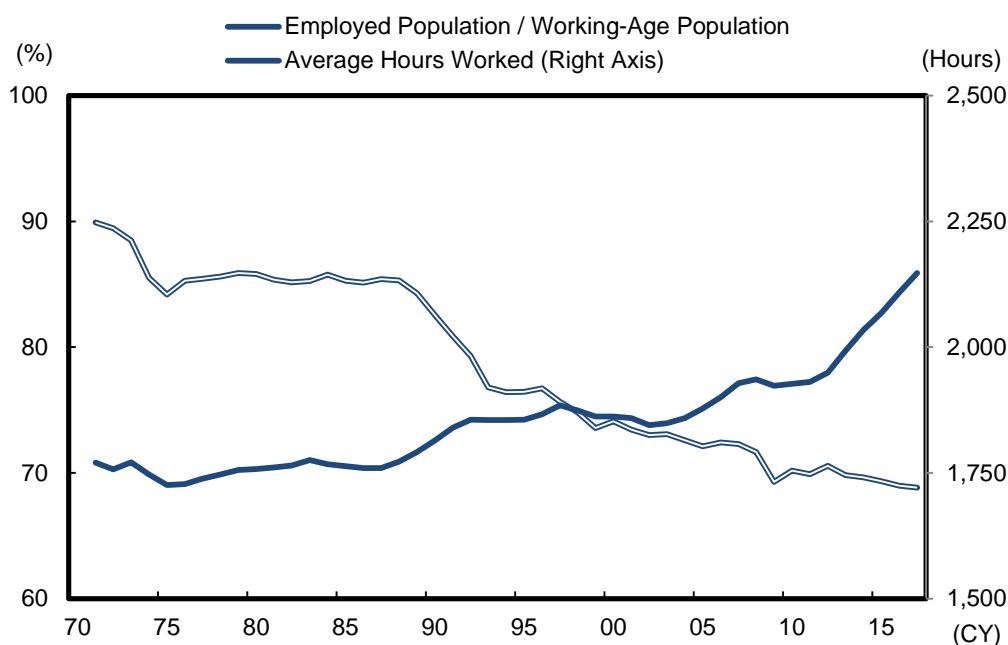
The loss of domestic jobs associated with the hollowing out effect eased off a bit after 2010, and the rate of divergence between working-age population and total labor input began to decrease. Then once into 2018, these two factors regained correlation for the first time in thirty-years. This is why there is a very good possibility that whatever happens in the future in the labor market may be quite different from what has happened before.

However, before approaching our outlook for the future, we need to take a look back on the developments which have occurred since 2010. During this period of time the working-age population declined, while total labor input was on the rise. A factor analysis of this situation is shown in Chart 7, which suggests that this is due to employed population/working-age population. Growth in the employed population is due especially to the increase in the number of women and elderly who have become employed. But since a large number of women are part-timers or non-regular employees with relatively short work-hours, hence average hours worked has continued to decline.

Furthermore, women's salaries are relatively low, and workers' rights as guaranteed by Japan's labor laws are few for these workers. It is therefore easy to see why this provided corporations with a supply of labor that is easy to use. Moreover, a large number of women have been forced to work under disadvantageous conditions in comparison to regular employees for whom lifetime employment makes them a privileged caste with vested interests. For this reason, women non-regular employees have been more exposed to the effects of intermittent recessions and the increase in the age at which pensions are rewarded. Hidden behind the veil of the increasing social advancement of women lies the suppression of average work-hours and average wage, which continues to this day.

Long-Term Change in Japan's Employment Rate and Average Hours Worked

Chart 7



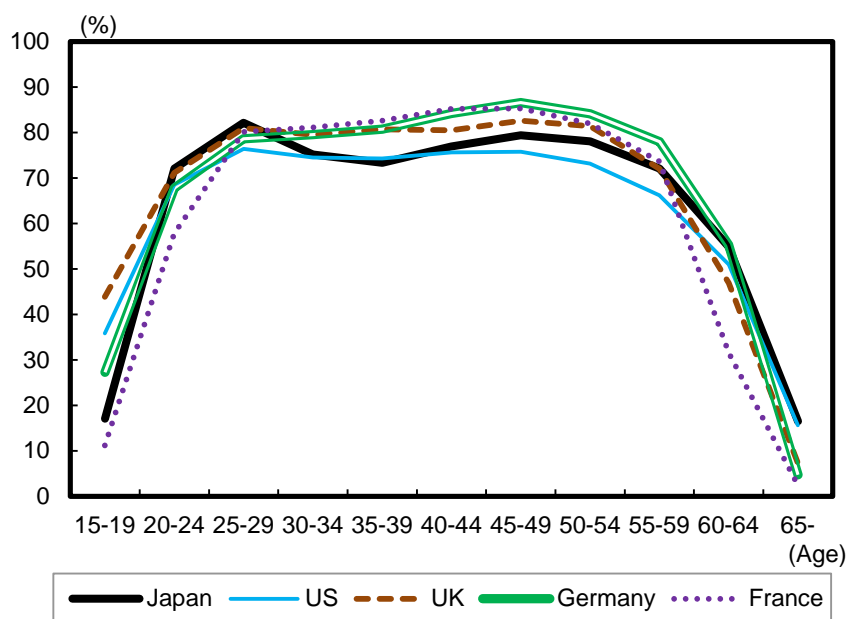
Source: Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.

Resolving the problem of the M-shaped curve has brought improvement of Japan's labor participation rate to the limit

However, as was mentioned in the previous section, there is a very good possibility that whatever happens in the future in the labor market may be quite different from what has happened before. First of all, it is now difficult to expect sustained growth in the labor participation rate. The M-shaped curve has now reached the same level as that seen in the US due to growth in women's labor force participation over the past several years. This means that there is little room left for further growth. Meanwhile, the active job openings-to-applicants ratio for part-time workers has now reached an unprecedented level. It has now become extremely difficult for Japanese corporations to increase the number of people it has working as part-timers.

International Comparison of Women's Labor Force Participation Rate (2017)

Chart 8



Source: OECD; compiled by DIR.

Alternative Strategy (1): Increase Average Hours Worked

Since it is difficult to hold down a head count any larger than this, corporations are now being forced to handle the issue of shortage of labor in other ways, such as extending average hours worked per employee. However, this brings up a whole host of other problems which they must face.

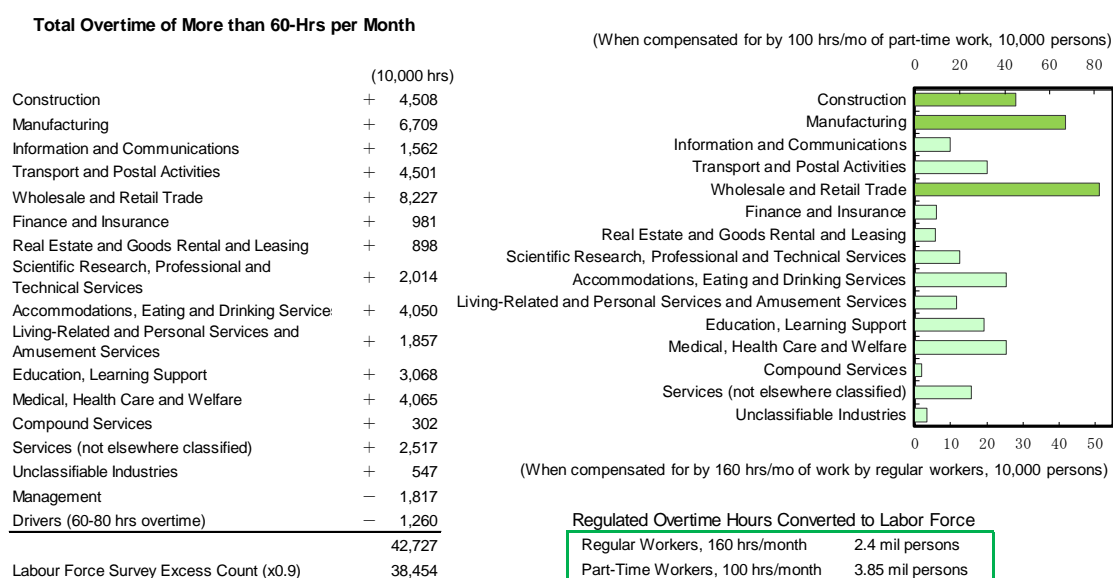
Alternative Strategy (1)-1: Increase overtime hours of existing regular employees (this idea has been frustrated by new regulations⁸)

First of all, it would be difficult at this time to try increasing the overtime hours of existing regular employees. According to the new ruling which has been introduced in order to resolve the problem of overwork (Regulation with Penalties on the Limitation of Number of Overtime Hours Worked), the maximum number of overtime hours allowable will be 45 hours per month or 360 hours per year (this may be revised to 720 hours per year pending agreement between labor and management). DIR estimates that total overtime hours of around four billion hours per year will be cut as a result of the new ruling.

⁸ If the scope of the discretionary labor system is further expanded (in other words if unpaid overtime is legalized) this would mean that corporations can work their regular employees as much as they want, and the contents of this section will be nullified.

Moreover, the idea of making use of unpaid overtime (off-the-clock work performed by workers), being that it has been rampant in the past, may also end in failure. Based on the responses of workers on a labor force survey regarding working hours, we see that unpaid overtime (found by subtracting the responses of corporations regarding working hours on the Monthly Labor Survey) has actually been on the decline sometime after 2010 (Chart 10). With the shortage of labor becoming more serious, Japanese employees have become more self-confident than in past years, so that companies attempting to exploit workers may find their bad reputation spread rapidly on social networks and other modern means of communication⁹. There have even been cases where a company has been forced to cease operations. Meanwhile, with corporate earnings in favorable condition, there are few corporations willing to take the legal risk that would be involved in forcing employees to put in overtime without pay rather than cutting costs.

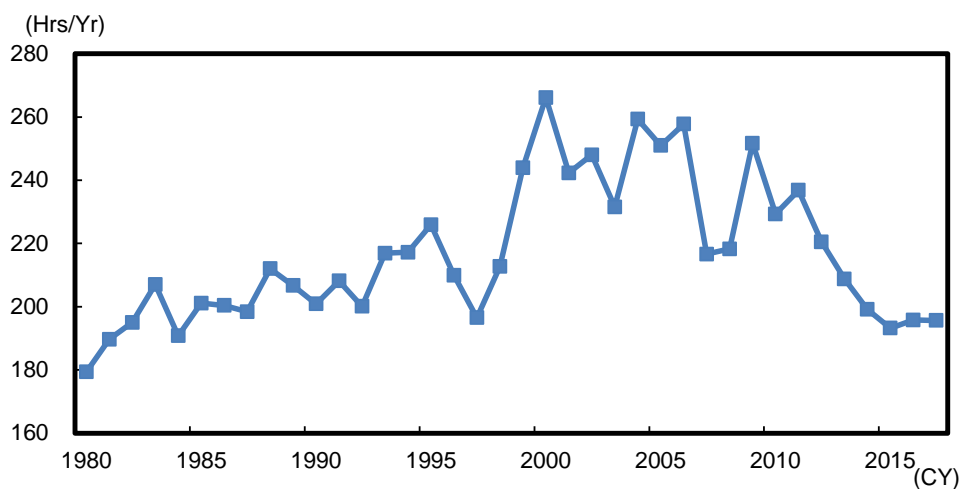
Estimated Effects of Overtime Regulations **Chart 9**



Overtime Pay -8.5 tril yen/yr = Downward Pressure of 3% on Employee Compensation

Source: Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.
 Note: The term "Management" refers to all jobs with a managerial function. The term "Drivers" includes operation of all kinds of transport equipment and machinery. This includes the operation of trains and airplanes. According to labor force surveys, there is a chance that in the case of many of these jobs, unpaid overtime and break time may in some cases be counted as work time. Therefore 10% is subtracted from the estimate with reference to the difference between the labor force survey and the monthly labor survey.

Estimate of Unpaid (Voluntary) Overtime **Chart 10**



Source: Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.

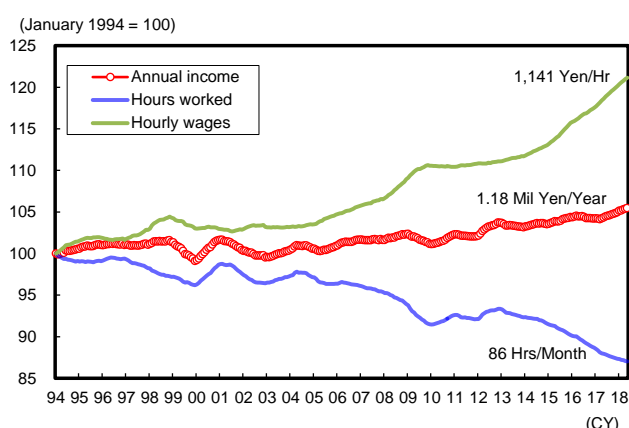
⁹ Social networks are such a ubiquitous part of life these days, even the President of the United States announces important policies and personnel decisions on social networks .

Alternative Strategy (1)-2: Increase work hours of part-timers and non-regular employees by changing status to that of regular workers

Getting part-timers and non-regular employees to work longer hours could also be tricky business. This is because of what is referred to in Japan as “the 1.3 million yen wall”. This is the maximum annual income a married woman can make and still be eligible for the marital deduction on Japan’s income tax. Most corporations also place the maximum level of a woman’s income for spouse allowance eligibility somewhere between 1.03 and 1.5 million yen, and the same standard is used for eligibility for social insurance provided to employees by corporations. These standards give part-time workers in Japan the incentive to keep their annual earnings at a certain level. Annual income for part-timers in Japan has in fact remained unchanged at around the above mentioned level for more than twenty-years. And yet during this same twenty-year time period the hourly wage of part-timers has grown by 20%. And for the same reason, work hours per employee for part-timers has declined, thereby offsetting whatever gains have been made in terms of hourly wage.

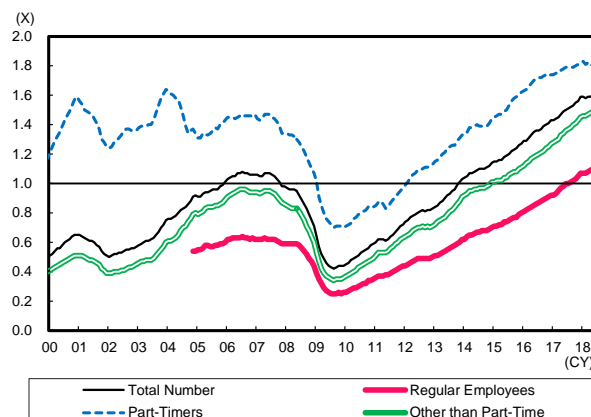
In a similar vein, increasing the number of part-time employees does not result in increasing work-time per employee. Hence Japanese corporations, taking a somewhat passive approach, have begun to increase the number of regular employees. The active job openings-to-applicants ratio for regular workers has continued to grow gradually, with the figure exceeding the 1x level as of June 2017, and it has continued to grow since then.

Employment Status of Part-Time Workers
Chart 11



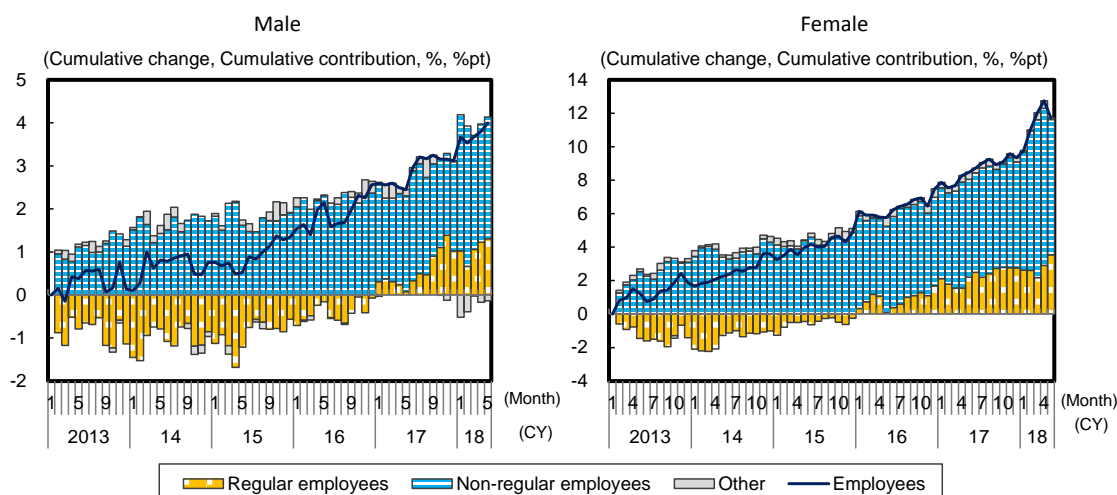
Source: Ministry of Health, Labour and Welfare; compiled by DIR.
Note: 12-month cumulative value / moving average value.

Active Job Openings-to-Applicants Ratio by Type of Employment
Chart 12



Source: Ministry of Health, Labour and Welfare; compiled by DIR.
Note: Values are seasonally adjusted.

Factor Analysis of Employed Population Chart 13



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Seasonally adjusted by DIR.

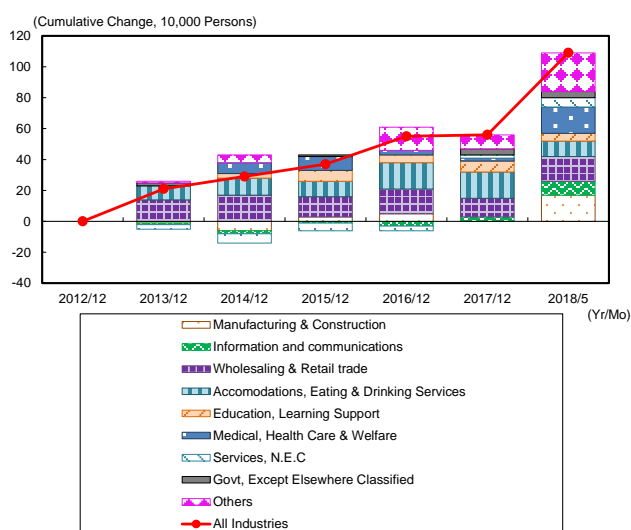
Alternative Strategy (2): Utilizing people falling outside the M-shaped curve

In recent months a new development has been observed. This is the discovery of a potential supply of labor in completely different groups than have been utilized until this time. As is shown in Chart 14 and 15, the employed population in the 15-24 age group and the 65 and over age group, both of which had exhibited low labor participation rates in the past (in other words, these groups were located outside the slope of the M-curve), is now beginning to grow dramatically in the area of non-regular employment.

The industry which accounts for the majority of this new activity is the service industry, which is known for being labor-intensive. It appears that the service industry has been able to discover this new source of labor not only because of an improved employment environment with direct improvements such as salary hikes, but also improvements in the indirect employment environment, such as the ability to choose one’s own work hours. At the same time, the service industry has also increased its utilization of foreigners.

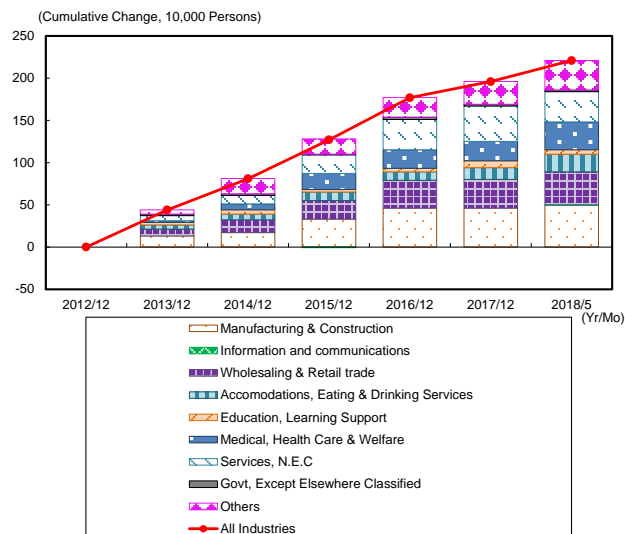
With the above development as the basis of our argument, we can now conclude that there is a possibility that the labor market can offset the shortage of manpower by going to new sources, such as changing the status of non-regular employees centering on women to that of regular employees, taking in young people and the elderly for short-term employment, and utilizing foreign workers.

Number of Employees in the 15-24 Age Group by Industry (Change over Time)
Chart 14



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Increase after December 2012 is cumulative.

Number of Employees in the 65 and Over Age Group by Industry (Change over Time)
Chart 15



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Increase after December 2012 is cumulative.

Flattening Wage Curve instead of labor costs grew partially for women and young people

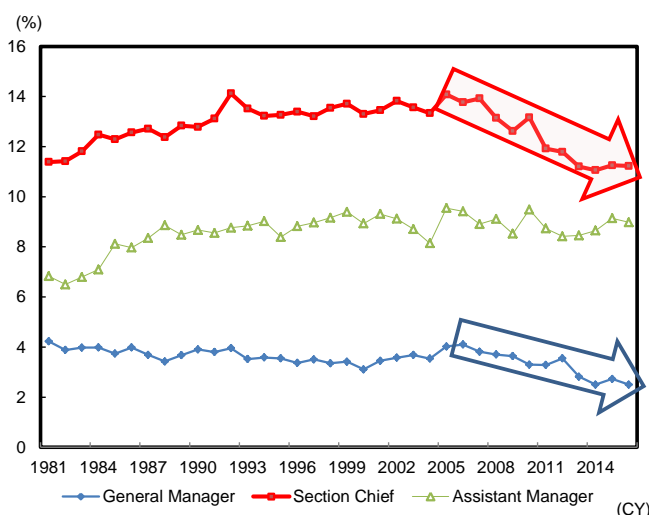
On the other hand, during this same transitional period, while labor costs grew partially for women and young people, this growth was offset by the tendency of Japanese corporations to prioritize the slowing down of salary increases, and the flattening of the wage curve. This very well may have kept down the wages of existing regular employees.

Chart 16 shows the wage curve amongst Japanese workers by birth year. The data confirms that the tendency to flatten the wage curve continues – while starting salaries have been raised over the years, the salaries of middle-aged regular employees have been forced downwards.

Chart 17 shows the flattening of the wage curve from a different angle. The tendency mentioned at the beginning of this section started during the latter part of the 2000`s when the percentage of workers in their 40s moving into general manager and section chief positions began to decline. This decline has continued since that time. We can see the same tendency amongst workers in their 50s. In other words, the data suggests that corporations may have developed the tendency to delay advancement of workers in their 40s and 50s to management positions, while at the same time cutting back on the number of employees who are promoted.

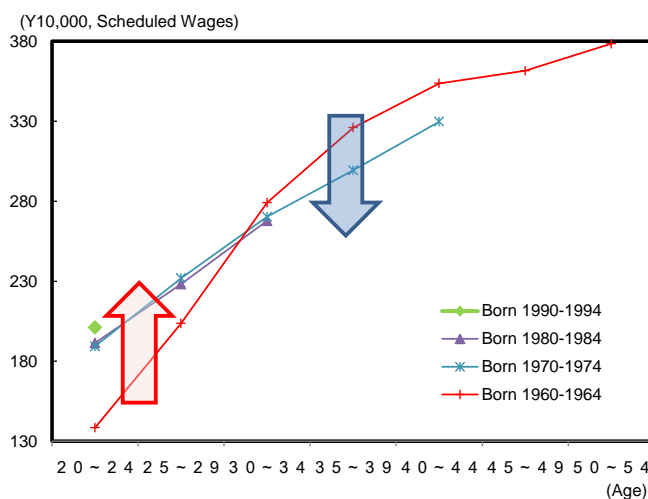
Workers in their 40s are members of Japan`s second baby boom generation, while those in their 50s started their careers during Japan`s bubble economy, hence these two groups account for a large portion of a corporation`s overall personnel expenses. We can see here how corporations are attempting to cut back on personnel expenses by focusing on employees in the volume zone and delaying their promotion.

Proportion of Workers in their 40s in Managerial Positions
Chart 16



Source: Ministry of Health, Labour and Welfare; compiled by DIR.

Wage Curve by Birth Year and Age Group
Chart 17



Source: Ministry of Health, Labour and Welfare; compiled by DIR.

3. Has the Phillips curve lost its validity?

To sum up the arguments of the previous section, Japan has reached a new stage in the severity of its labor shortage problem. As a result, growth in wages can be observed in some statistical cohorts. However, as a result of having their regular salary increases suppressed, middle-aged men are finding that the growth rate in their salaries is extremely moderate in comparison to the overall trend despite the fact that the labor market has become increasingly tight.

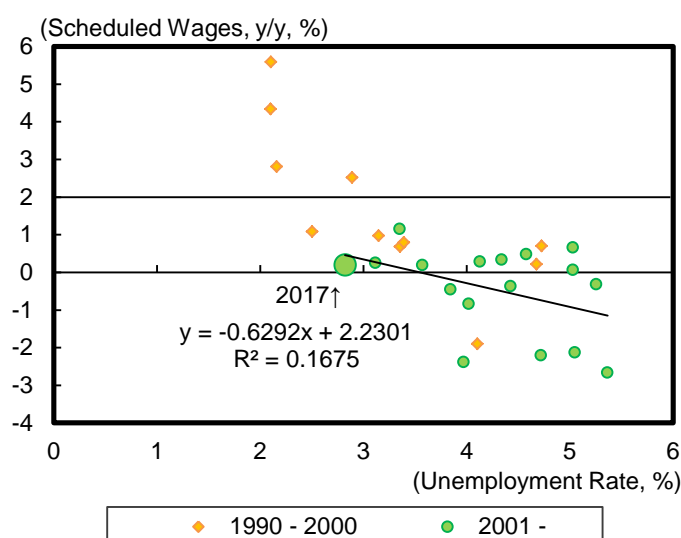
One of the more extreme arguments claims that this fact proves how the Phillips curve is no longer functioning normally, but this is jumping to conclusions. As is shown in Chart 19, when we perform a breakdown of the Phillips curve by decade, we find that its effectiveness is alive and well, even in the Japan of today. The problem is that the labor market is tight only in the younger age range, while the figure for the middle-aged slacks off considerably. In other words, a “generational mismatch” has occurred between the profile of human resources being sought (demand for labor) and the labor supply (the annual salary demanded by workers).

To clearly summarize the reasoning behind the claim that the Phillips curve has become dysfunctional, one can say that in its use in Japan there is room for argument on three points: (1) intercepts (which indicate the growth rate of wages in the natural rate of unemployment), (2) the slope, and (3) the X-axis.

First of all, intercepts are formed by adaptive expectations, and are hence historically dependent, and restoration can take time (the hysteresis effect). Moreover, as long as the flattening of the wage curve persists (reduction of regular salary increases), the expectations of individuals faced with a wage hike will remain low. One of the other factors making up the intercept is the growth rate in labor productivity, and this factor does not rise or fall much in the short-term.

The Phillips Curve: Japanese Wages

Chart 18



Source: Ministry of Health, Labour and Welfare, Ministry of Internal Affairs and Communications; compiled by DIR.

Next is (2) the slope, which is a difficult subject to ignore due to the influence of international competition. As was mentioned earlier, this same factor exerted overwhelming influence between the latter part of the 1980s until around 2010. The generation which started its career during the latter part of the 1980s has gotten the hot-cold treatment from corporations. In great demand when they first entered the company, they are no longer wanted. The problem is that the skill set needed in today’s business world is different than what was needed when this generation first went to work.

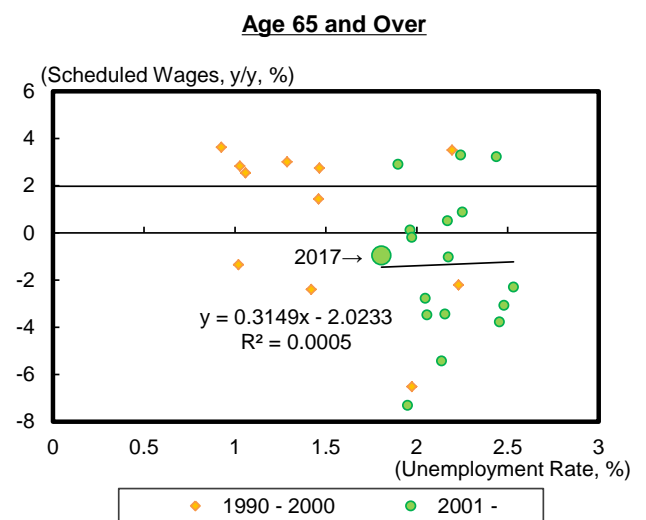
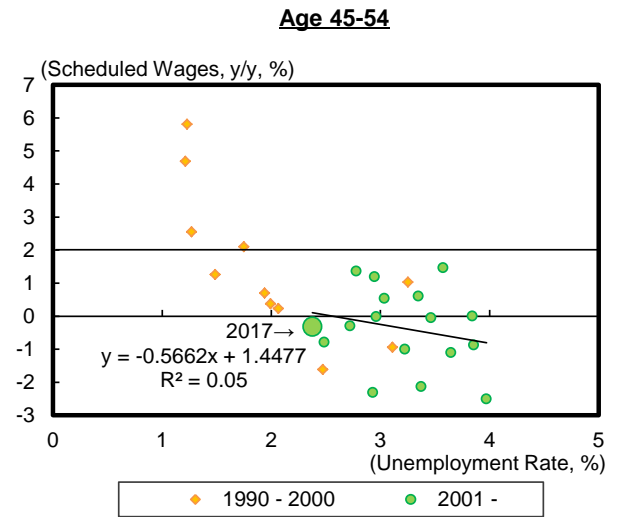
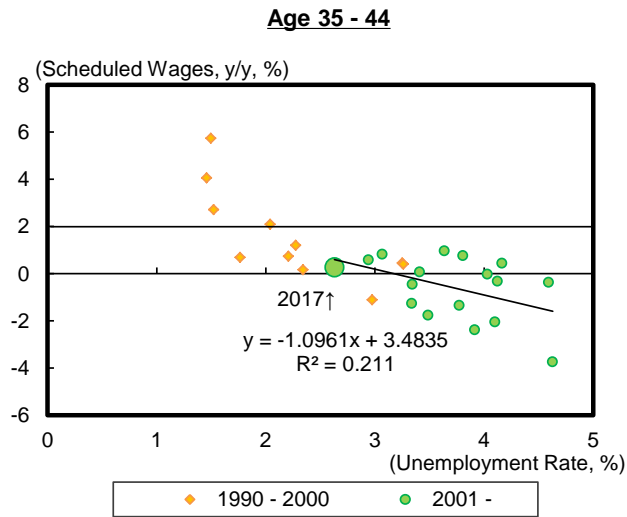
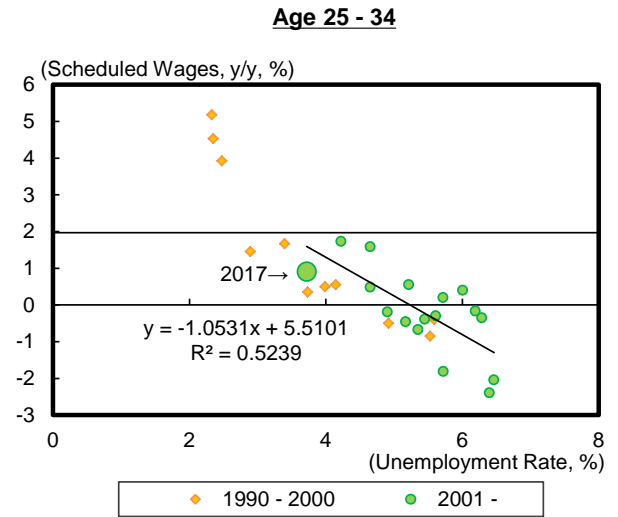
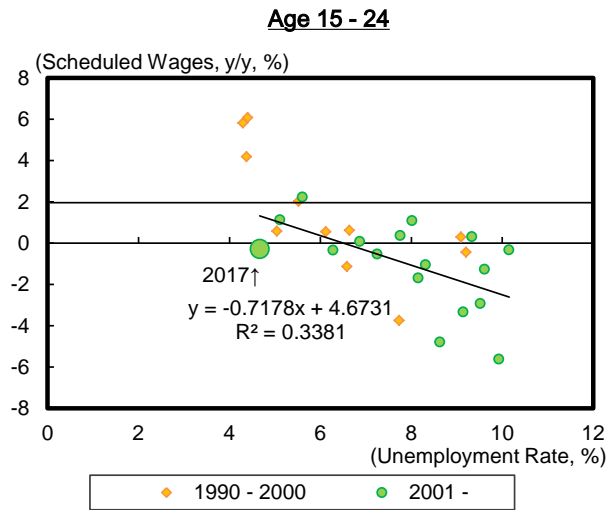
Our last factor is (3) the X-axis. This represents the unemployment rate, and the debate is endless regarding this issue. From the start, the validity of data regarding the unemployment rate is questionable. As was mentioned previously, the labor force participation rate has improved considerably in Japan in recent years. In other words, since potential labor supply is not included in the calculation of the unemployment rate, it is difficult to say that there is not much slack in the labor market simply because the unemployment rate is low. This argument holds not only for women, young people, and the elderly, but for another group which should not be ignored – that is the generation which gave up on looking for a job during the “employment ice age” that began during the late 1990s and has been in standby mode outside the labor market ever since¹⁰.

Meanwhile, exactly what the natural rate of unemployment ought to be remains an unknown factor. First there is the approach to calculating the natural rate of unemployment. If we stick with the argument that it should be the unemployment rate, which is the point where wage deflation and inflation diverge (in other words NAIRU – the non-accelerating inflation rate of unemployment), then all of the calculations based on performance values over the past twenty-years are completely meaningless. And of course, growth in wages has not been confirmed over the past twenty-years. Hence we must assume that the unemployment rate during this same time has actually exceeded NAIRU all this time. Finally, it was the first half of the 1990s when growth in wages was observed in Japan, and the unemployment rate was somewhere in the middle of the 2% level. But it is also possible that frictional unemployment declined in terms of social structure during this time.

To summarize the above arguments, perhaps the following tentative conclusion would be the most appropriate. There is not much of a chance that the situations surrounding factors (1) intercepts and (2) the slope will improve dramatically in the short-term. As for (3) the X-axis, the situation differs for different age groups. Chances are very good that the Phillips curve is beginning to work for the younger generation. On the other hand, for middle-aged and older people, it is possible that the natural rate of unemployment has not yet been reached. In order for all age groups to achieve wage inflation, it will first be necessary for the unemployment rate for the middle-aged and older age groups to decline (or more workers in these age groups will have to leave the labor market).

¹⁰ The situation in the US is even worse. For further detail, see the report mentioned in Note 2.

The Phillips Curve: Japanese Wages by Age-Group Chart 19



Source: Ministry of Health, Labour and Welfare, Ministry of Internal Affairs and Communications; compiled by DIR.

Japan's Economic Outlook No. 197 Update

	FY17	FY18 (Estimate)	FY19 (Estimate)	CY17	CY18 (Estimate)	CY19 (Estimate)
Main economic indicators						
Nominal GDP (y/y %)	1.7	1.3	1.8	1.5	1.2	1.8
Real GDP (chained [2011]; y/y %)	1.6	1.0	0.8	1.7	1.0	1.1
Domestic demand (contribution, % pt)	1.2	0.7	0.6	1.2	0.6	1.0
Foreign demand (contribution, % pt)	0.4	0.3	0.2	0.6	0.3	0.1
GDP deflator (y/y %)	0.1	0.2	1.0	-0.2	0.2	0.8
Index of All-industry Activity (y/y %)*	1.8	1.1	1.0	1.6	1.1	1.3
Index of Industrial Production (y/y %)	4.1	1.9	1.9	4.4	1.8	2.4
Index of Tertiary Industry Activity (y/y %)	1.0	1.0	0.8	0.7	1.0	1.1
Corporate Goods Price Index (y/y %)	2.7	2.7	3.3	2.3	2.7	2.8
Consumer Price Index (excl. fresh food; y/y %)	0.7	1.0	1.4	0.5	1.0	1.2
Unemployment rate (%)	2.7	2.5	2.5	2.8	2.5	2.4
Government bond yield (10 year; %)	0.05	0.06	0.06	0.05	0.06	0.06
Money stock; M2 (end-period; y/y %)	3.7	2.0	1.8	4.0	2.3	1.9
Balance of payments						
Trade balance (Y tril)	4.6	3.4	4.1	5.0	3.2	3.4
Current balance (\$100 mil)	1,962	1,746	1,847	1,957	1,731	1,762
Current balance (Y tril)	21.7	19.4	20.5	22.0	18.8	19.2
(% of nominal GDP)	3.9	3.5	3.6	4.0	3.4	3.4
Real GDP components (Chained [2011]; y/y %; figures in parentheses: contribution, % pt)						
Private final consumption	0.9 (0.5)	0.6 (0.3)	0.2 (0.1)	1.0 (0.6)	0.4 (0.2)	0.8 (0.4)
Private housing investment	-0.3 (-0.0)	-2.6 (-0.1)	1.8 (0.1)	2.7 (0.1)	-4.4 (-0.1)	3.2 (0.1)
Private fixed investment	3.2 (0.5)	2.0 (0.3)	1.2 (0.2)	2.9 (0.4)	2.3 (0.4)	1.5 (0.2)
Government final consumption	0.7 (0.1)	0.6 (0.1)	0.8 (0.2)	0.4 (0.1)	0.6 (0.1)	0.8 (0.2)
Public fixed investment	1.4 (0.1)	-2.5 (-0.1)	1.4 (0.1)	1.2 (0.1)	-1.6 (-0.1)	-0.6 (-0.0)
Exports of goods and services	6.2 (1.0)	4.1 (0.7)	2.7 (0.5)	6.7 (1.1)	4.5 (0.8)	3.0 (0.6)
Imports of goods and services	4.0 (-0.6)	2.5 (-0.4)	1.5 (-0.3)	3.4 (-0.5)	2.9 (-0.5)	2.5 (-0.4)
Major assumptions:						
1. World economy						
Economic growth of major trading partners	4.2	3.9	3.7	4.1	4.0	3.8
Crude oil price (WTI futures; \$/bbl)	53.6	67.2	67.0	50.9	66.2	67.0
2. US economy						
US real GDP (chained [2009]; y/y %)	2.5	2.7	2.3	2.3	2.7	2.4
US Consumer Price Index (y/y %)	2.1	2.5	2.2	2.1	2.5	2.2
3. Japanese economy						
Nominal public fixed investment (y/y %)	3.2	-1.7	2.2	2.8	-0.4	-0.0
Exchange rate (Y/\$)	110.8	109.0	109.0	112.2	108.8	109.0
(Y/€)	130.3	129.2	129.0	127.2	130.0	129.0

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.

Comparison with Previous Outlook

	Current outlook (Outlook 197 Update)		Previous outlook (Outlook 197)		Difference between previous and current outlooks	
	FY18	FY19	FY18	FY19	FY18	FY19
Main economic indicators						
Nominal GDP (y/y %)	1.3	1.8	1.2	1.8	0.0	-0.0
Real GDP (chained [2011]; y/y %)	1.0	0.8	1.0	0.8	0.1	0.0
Domestic demand (contribution, % pt)	0.7	0.6	0.6	0.6	0.1	0.0
Foreign demand (contribution, % pt)	0.3	0.2	0.3	0.2	-0.0	0.0
GDP deflator (y/y %)	0.2	1.0	0.3	1.0	-0.0	-0.0
Index of All-industry Activity (y/y %)*	1.1	1.0	1.3	0.9	-0.2	0.2
Index of Industrial Production (y/y %)	1.9	1.9	2.6	1.4	-0.7	0.5
Index of Tertiary Industry Activity (y/y %)	1.0	0.8	1.1	0.7	-0.1	0.1
Corporate Goods Price Index (y/y %)	2.7	3.3	2.7	3.3	0.0	0.0
Consumer Price Index (excl. fresh food; y/y %)	1.0	1.4	1.0	1.4	0.0	0.0
Unemployment rate (%)	2.5	2.5	2.5	2.5	0.0	0.0
Government bond yield (10 year; %)	0.06	0.06	0.06	0.06	0.00	0.00
Balance of payments						
Trade balance (Y tril)	3.4	4.1	3.2	4.0	0.1	0.1
Current balance (\$100 mil)	1,746	1,847	1,731	1,835	15	12
Current balance (Y tril)	19.4	20.5	19.1	20.3	0.3	0.2
(% of nominal GDP)	3.5	3.6	3.5	3.6	0.0	0.0
Real GDP components (chained [2011]; y/y %)						
Private final consumption	0.6	0.2	0.6	0.2	-0.0	-0.0
Private housing investment	-2.6	1.8	-2.8	1.8	0.2	0.0
Private fixed investment	2.0	1.2	1.6	1.2	0.3	0.0
Government final consumption	0.6	0.8	0.5	0.8	0.1	0.0
Public fixed investment	-2.5	1.4	-2.5	1.4	0.0	-0.0
Exports of goods and services	4.1	2.7	4.1	2.7	0.0	0.0
Imports of goods and services	2.5	1.5	2.5	1.5	0.0	0.0
Major assumptions:						
1. World economy						
Economic growth of major trading partners	3.9	3.7	3.8	3.7	0.1	0.0
Crude oil price (WTI futures; \$/bbl)	67.2	67.0	69.0	69.0	-1.8	-2.0
2. US economy						
US real GDP (chained [2009]; y/y %)	2.7	2.3	2.7	2.3	0.0	0.0
US Consumer Price Index (y/y %)	2.5	2.2	2.5	2.2	0.0	0.0
3. Japanese economy						
Nominal public fixed investment (y/y %)	-1.7	2.2	-1.8	2.2	0.1	-0.0
Exchange rate (Y/\$)	109.0	109.0	109.0	109.0	-0.0	0.0
(Y/€)	129.2	129.0	132.0	132.0	-2.8	-3.0

Source: Compiled by DIR.

Note: Due to rounding, differences do not necessarily conform to calculations based on figures shown.

* Excl. agriculture, forestry, and fisheries.