



February 5, 2020

Bank of Japan

Japan's Economy and Monetary Policy

Speech at a Meeting with Business Leaders in Ehime

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(English translation based on the Japanese original)

Introduction

Good morning. It is my pleasure to have the opportunity today to exchange views with administrative, financial, and business leaders in Ehime Prefecture. I would like to take this chance to express my sincere gratitude for your cooperation with the activities of the Bank of Japan's Matsuyama Branch.

At the Monetary Policy Meeting held in January, the Bank updated its projections for Japan's economic activity and prices through fiscal 2021 and released them in its quarterly *Outlook for Economic Activity and Prices* (Outlook Report). Today, while outlining the Outlook Report, I would like to explain the Bank's view on developments in economic activity and prices, including the global economy, as well as monetary policy conduct, with a focus on economic growth.

I. Financial and Economic Developments

A. Developments in the Global Economy

Let me start by talking about developments in the global economy. The growth rate of the global economy has decelerated since around mid-2018, and according to the latest forecasts released by the International Monetary Fund (IMF), the global growth rate for 2019 likely was slightly below 3 percent for the first time in 10 years (Chart 1).

The recent slowdown in the global economy was triggered by a rapid deceleration in manufacturers' activities on a global basis, mainly due to a heightening of uncertainties over the U.S.-China trade friction and adjustments in the cycle for IT-related goods that were affected by weak demand, such as for smartphones (Chart 2). A heightening of uncertainties also has led to the postponement of business fixed investment, with the world trade volume, mainly in IT-related goods and capital goods, decelerating significantly. However, while relatively large adjustments have been seen in the manufacturing sector, the nonmanufacturing sector has been steady on a global basis. This contrast between the manufacturing and nonmanufacturing sectors sometimes is called "decoupling."

There are some factors behind the global decoupling. First of all, the employment and income situation has been favorable in many countries. In addition, each country strengthened

monetary and fiscal measures in response to the heightening risks of the economic slowdown. As a result, accommodative financial conditions, tight labor market conditions, and steady consumer sentiment have been maintained, supporting domestic demand in each country even with the deceleration in the manufacturing sector. That said, there is no guarantee that this decoupling will last for a long time. If the slowdown in the manufacturing sector becomes prolonged, its impact could spread gradually to the nonmanufacturing sector and households. In contrast, if adjustments in the manufacturing sector mostly come to an end while domestic demand remains resilient, the global economy is expected to return to a growth path. On this point, the Bank considers it highly likely that the latter scenario will be realized -- that is, the global economy will pick up gradually. Let me point out two factors that are the basis for the realization of this scenario.

The first is that there has been some progress in dealing with the problems that were at the root of the global uncertainties, such as the U.S.-China trade negotiations and the United Kingdom's exit from the European Union (EU). If overall uncertainties wane to some degree in reflection of such progress, firms are likely to take more positive actions, although the Bank judges that uncertainties regarding the global economy are still significant, as I will talk about later.

The second is that adjustments in the global manufacturing sector have progressed and business sentiment has improved (Chart 3). In the IT-related sector in particular, inventory adjustments have progressed globally and world semiconductor shipments have picked up. As for the outlook for this sector, demand related to data centers and the 5G network is expected to increase, thereby pushing up production activity.

The Bank's projection is consistent with those presented by international organizations. For example, in the IMF's *World Economic Outlook Update*, the global growth rate is projected to rise from 2.9 percent for 2019 to 3.3 percent for 2020 (Chart 1).

B. Current Situation of and Outlook for Japan's Economy

Next, I will turn to economic developments in Japan. The slowdown in the growth pace of the global economy also has affected Japan's economy, mainly through somewhat weak

external demand. Reflecting this slowdown and such effects as of the consumption tax hike and natural disasters, Japan's economy seems to have briefly registered a significant deceleration in the October-December quarter of 2019. However, the Bank considers at this point that such deceleration is temporary and that Japan's economy has been on a moderate expanding trend. This is based on the assessment that the trend in the three pillars of domestic demand -- business fixed investment, private consumption, and government spending -- has been firm. Let me elaborate on this.

I will first talk about business fixed investment. In Japan, it has continued on an increasing trend (Chart 4). Some manufacturers have postponed investment intended for capacity expansion due to the slowdown in overseas economies; so far, however, construction investment has continued to increase and there has been no change in firms' efforts toward making strategic investment from a long-term perspective. As for the outlook, the Bank projects that these investments will continue to increase. Regarding construction investment, in Japan, buildings and structures have been aging in reflection of long-lasting weak construction investment since the bubble burst in the early 1990s, and potential replacement demand seems to be high. Such potential demand is likely to underpin construction investment for a long time in a situation of accommodative financial conditions. In addition, labor-saving investment in view of demographic changes is expected to continue increasing, and IT investment seems to be gradually becoming active in a wide range of sectors recently, including investment related to big data, artificial intelligence (AI), and the Internet of Things (IoT) that aims at creating new businesses, expanding sales channels, and promoting use for marketing.¹

Next, let me move on to private consumption (Chart 5). For the time being, the effects of the October 2019 consumption tax hike warrant attention. On this point, private consumption for the October-December quarter declined considerably, but it should be noted that this decline is attributable to such factors as natural disasters. Looking at developments in private consumption excluding these special factors, the impact of the tax hike so far is assessed as being smaller than that of the previous tax hike in 2014. However, uncertainties regarding the

¹ See Box 3 "Background to the Recent Steady Business Fixed Investment" in the January 2020 Outlook Report.

impact of the tax hike are still significant and are considered one of the risks in assessing future economic activity. I will touch on this point again later.

Lastly, let me explain developments in government spending. In recent years, there have been successive natural disasters in Japan.² At the end of last year, the government formulated the economic measures for the first time since 2016, with the aim of overcoming natural disasters and downside risks to economic activity and of providing people with a sense of security for the future. Owing to the implementation of various measures in this economic package, government spending, such as on public construction, is expected to continue increasing for the time being (Chart 6). Moreover, I think that flexible conduct of fiscal policy in response to economic developments amid a situation where the Bank continues to conduct a large-scale monetary easing will enhance the synergy effects of monetary easing and fiscal stimulus, thereby further strengthening economic stimulus effects. Generally speaking, in the case where a government expands its spending through increased issuance of government bonds, the mechanism will operate in which upward pressure on longer-term market rates emerges and gradually restrains such items as private investment. On the other hand, in the case where a central bank restrains a rise in market rates even amid an expansion in government spending, the negative impact on private investment will be limited and stronger economic stimulus effects are expected.³

In sum, the underlying trend in domestic demand has been firm thus far and it is expected to follow an uptrend. In the Bank's January 2020 Outlook Report, also taking into account that overseas economies are likely to pick up gradually, Japan's real GDP growth rate is projected to be 0.8 percent for fiscal 2019, gradually rising to 0.9 percent for fiscal 2020 and 1.1 percent for fiscal 2021 (Chart 7).

² Wakatabe, M., "Financial and Settlement Systems as Social Infrastructure: Disaster Management Perspective," opening remarks at the symposium titled "The Impact of Natural Disasters on Financial Markets and Financial Institutions" held at Nagoya City University Graduate School, November 28, 2019, http://www.boj.or.jp/en/announcements/press/koen_2019/ko191225a.html/.

³ See Box 1 "Policy Mix Effects" in the January 2020 Outlook Report.

C. Risk Assessments

However, there are uncertainties regarding this baseline scenario, and I would like to underline the need to closely monitor the downside risks at present.

The first risk factor is developments in overseas economies. Although the United States and China reached an agreement on the initial trade deal, there remain many deep-rooted conflicts between the two countries. Attention also should be paid to geopolitical risks surrounding developments in the Middle East. Recently, there have been heightening uncertainties regarding the impact of the spread of the novel coronavirus on the global economy. An indicator that captures global policy uncertainties mainly through the number of news reports has remained at a high level (Chart 8). Taking these developments into account, it is necessary to closely examine whether the scenario will be realized in which firms' activities will become more active through a decline in uncertainties, and in turn trade activity and business fixed investment also will pick up.

The second risk factor is developments in domestic demand. The effects of the consumption tax hike on household spending can be divided into two: (1) an increase in demand prior to the tax hike and a reactionary decline and (2) a decline in households' real income due to the tax hike. The former seems to have been constrained this time compared to those of the previous tax hike, partly due to the government's various policy measures (Chart 9). On the other hand, the effects of the latter could materialize gradually through, for example, changes in households' spending attitudes -- that is, the propensity to consume. This time, compared with the previous tax hike, the increase in the net burden on households due to the tax hike has been constrained owing to various support measures and growth in employee income has been maintained, and both factors are likely to underpin real income. Looking at indicators of consumer sentiment that can capture households' spending attitudes relatively early, these continued to show some weakness before the tax hike, whereas there seems to have been a pick-up to some extent after the tax hike, mainly led by the category of "overall livelihood" in the Consumer Confidence Index (Chart 10). However, it is too early to make an assessment on households' spending attitudes at this point, and we would like to carefully examine additional data when they become available.

II. Price Developments

Next, I will explain price developments (Chart 11). A sustained decline in prices continued in Japan for many years. In order to overcome this situation, the Bank introduced quantitative and qualitative monetary easing (QQE) in 2013 and has pursued a large-scale monetary easing since then. Subsequently, the economy has improved significantly and the year-on-year rate of change in the consumer price index (CPI) has taken hold in positive territory. Thus, Japan's economy already is no longer in deflation in the sense of a sustained decline in prices.

The year-on-year rate of change in the CPI currently is at around 0.5 percent, and this level is still lower than the price stability target of 2 percent set by the Bank. Although there are some factors that have been pushing down prices, firms' moves to reflect upward pressure stemming from such items as personnel expenses and shipping costs in selling prices have continued, albeit gradually.

The Bank expects that the annual CPI inflation will continue to increase gradually (Chart 12). The rates of increase in wages and employee income are likely to accelerate gradually, as the labor market conditions are expected to remain tight with the economy continuing to expand. Consequently, it is likely that households will accept price rises more easily and firms will be able to further raise their selling prices accordingly. If wages and prices continue to rise, people's inflation expectations will increase, leading to a moderate rise in actual prices. It is projected in the latest Outlook Report that, with this mechanism operating, the year-on-year rate of change in the CPI excluding fresh food will be 0.6 percent for fiscal 2019, gradually rising to 1.0 percent for fiscal 2020 and 1.4 percent for fiscal 2021.

However, this baseline scenario of the outlook for prices entails downside risks. Under the current situation in particular, it is necessary to take into account the possibility that downside risks to economic activity may materialize and affect prices. Therefore, the Bank will continue to carefully examine economic and price developments and monitor whether the mechanism will be maintained in which the inflation rate increases toward the price stability target of 2 percent.

III. Discussions over Japanification and Economic Growth

A. What is "Japanification"?

Lately, the term "Japanification" of advanced economies has come to be used frequently.⁴ While it does not really have a clear definition, it often is used to explain the following situation. In advanced economies, the economic growth rates, the inflation rates, and interest rates declined after the global financial crisis, and this situation has been lasting. As the situation of low growth, low inflation, and low interest rates becomes prolonged, the economy's potential growth rate becomes lower, protracting low growth, low inflation, and low interest rates for a longer period. Since Japan has experienced this since the 1990s, the term "Japanification" has been used in the context of warning not to follow in Japan's footsteps.⁵

Chart 13 shows developments in Japan's GDP since 1990 from various perspectives in comparison with other advanced economies. We find the following three points. First, Japan's economic growth rate in terms of nominal GDP clearly has been lower than that of other countries. The nominal GDP growth rate started to decelerate in the first half of the 1990s, and it hardly rose until around 2013. Second, the economic growth rate in terms of real GDP -- which excludes the effects of price fluctuations -- has been at a low level compared to that of other countries, but it is not as low as the nominal growth rate. Third, looking at real GDP per working-age person, Japan's economic growth rate is at around the average level compared to that of other advanced economies.

Based on this third point, some argue that Japan's economic growth rate is not that bad and its stagnation, dubbed "Japanification," is exaggerated. However, I would like to stress that

⁴ At this year's annual meeting of the American Economic Association held in San Diego, California, there was a session titled "Japanification, Secular Stagnation, and Fiscal and Monetary Policy Challenges." For details, see <https://www.aeaweb.org/webcasts/2020/japanification-secular-stagnation-fiscal-monetary-policy-challenges>.

⁵ Professor Ito at Columbia University defines Japanization -- the other term for Japanification -- by using the following four criteria: (1) the actual growth rate is lower than the potential growth rate for an extended period; (2) the natural real interest rate is below zero and also below the actual real interest rate; (3) the nominal (policy) interest rate is zero; and (4) the economy falls into deflation, i.e., the inflation rate is negative. For details, see Ito, T., "Japanization: Is it Endemic or Epidemic?" *NBER Working Paper*, no. 21954, 2016.

people's perception of economic growth tends to be formed based on nominal figures. One of the reasons why the nominal GDP growth rate was low from the 1990s is that prices continued to decline; in other words, deflation was prolonged. In addition, the unemployment rate went up under deflation. If those unemployed during the "employment ice age" period had been employed, Japan's economic growth rate would have been much higher.

B. Importance of Economic Growth

Now, I would like to confirm the importance of economic growth. First of all, on average, economic growth leads to improvements in people's living standard as well as nutrition and sanitation levels. Income such as wages, interest, and dividends comes from national output; that is, GDP. Without GDP growth, people's income will not increase. Let me also note that, although many problems have been pointed out regarding GDP, no alternatives have been found easily.⁶

Second, economic growth brings about employment. In economics, this rule of thumb has long been known as Okun's law. It says that there is a negative correlation between the economic growth rate and (change in) the unemployment rate. This means that, when the economic growth rate rises, the unemployment rate declines accordingly. This relationship is confirmed in Japan (Chart 14).⁷ Given that unemployment brings about not only a negative impact on the economy but also various human and social costs, it is desirable to maintain a healthy level of employment through economic growth.

Third, economic growth allows for various public services to be maintained. A provision of public goods -- such as national defense, police services, the judicial system, social security,

⁶ Net National Welfare and the Human Development Index, which were advocated as alternatives to GDP in the past, incorporate GDP and income levels. The Social Progress Index is comprised of only social indicators such as the sanitation level and access to education, but these have a close relationship with GDP.

⁷ Okun's law applies to other advanced economies including the United States. For details, see Ball, L., Leigh, D., and Loungani, P., "Okun's Law: Fit at 50?" *Journal of Money, Credit and Banking*, vol. 49, issue 7 (2017): 1413-41.

medical services, social infrastructure, fundamental education, and basic scientific research -- requires financial resources, the scale of which depends on the size of the economy.⁸

In reality, there are various challenges to economic growth. For example, environmental pollution and climate change have become global issues. Innovation is essential to reduce the amount of carbon dioxide emissions, and it requires a certain level of research and development (R&D) expenditure. In considering the challenges associated with economic growth, it is important to compare them with the positive effects of such growth.⁹

C. Declining Population and Economic Growth

Let us get back to the situation in Japan. The population has been declining and society is aging. The working-age population and total population marked their respective peaks in 1995 and 2008. The ratio of seniors aged 65 years or older to the total population has continued to rise. Many people doubt that Japan can achieve economic growth in the situation of the declining and aging population.

Looking back, people used to be concerned about overpopulation. For example, in the first edition of *An Essay on the Principle of Population* (1798), Thomas R. Malthus argued that, even though a population increases geometrically, food increases only arithmetically, and thus population growth constrains an enhancement in the living standard per capita. Overpopulation also had been a concern in Japan for a long period until recently.¹⁰

In fact, economic growth can be achieved even under a declining population, which might be a headwind for the economy. Taking the case of Ehime Prefecture as an example, gross prefectural product has increased moderately in recent years despite a continuing decline in

⁸ The following argues that economic growth leads to openness, generosity, mobility, and democracy in a society: Friedman, B. M., *The Moral Consequences of Economic Growth* (New York: Knopf, 2005).

⁹ There are arguments that dematerialization has progressed in advanced economies, whereby, despite the economic growth, the consumption of such items as energy and mineral resources as well as the emissions of carbon dioxide have declined. See McAfee, A., *More from Less* (London: Simon & Schuster, 2019).

¹⁰ Tadokoro, M., "Jinkōron no hensen" [Overpopulation or underpopulation?: Japan's discourses on demography in retrospect], *Hōgaku kenkyū*, vol. 84, issue 1 (January 2011): 63-90.

total population in the prefecture (Chart 15). An international comparison shows that there is no correlation between the real GDP growth rate per capita and the population growth rate (Chart 16). Aside from that, there is no correlation between the inflation rate and the population growth rate either.

Looking from the supply side, sources of economic growth roughly can be divided into three elements: capital, labor, and knowledge in a broad sense, including technologies and skills. Among these, knowledge is definitely important in achieving economic growth. In the first place, before we use capital and labor, we need a certain level of knowledge to decide what kind of goods and services to produce and consume. Even during the post-war rapid economic growth period in Japan, the contribution of labor input was small while that of capital and knowledge was large (Chart 17).

With regard to labor, the current increase in labor force that reflects a decline in the number of unemployed and an increase in labor participation by women and seniors is favorable.¹¹ Compared to a while ago, seniors have become healthier of late. For example, they now are deemed to be physically younger by about 5 years in terms of their average walking speed, and by about 10 years based on their average number of teeth (Chart 18). As for capital, its contribution to economic growth had been low in Japan during the 1990s, but eventually business fixed investment has started to expand in recent years.

Knowledge such as people's skills and expertise, science and technology, and education recently has become more and more important for economic growth. This is indicated by the recent increase in investments intended for software as well as research and development. This "knowledge economy" is closely connected to globalization. We tend to think of globalization as the exchange of goods or services, and it is true that economic problems stemming from a declining and aging population can be dealt with, for example, by increasing

¹¹ There is an argument that the unemployment rate has been declining because the working-age population has shrunk due to a declining and aging population. However, in fact, a decline in the unemployment rate has been observed in a situation where labor force has increased since 2013 despite a shrinking in the working-age population. For details, see Wakatabe, M., "Japan's Economy and Monetary Policy," speech at a meeting with business leaders in Aomori, June 27, 2019, http://www.boj.or.jp/en/announcements/press/koen_2019/ko190627a.htm/.

imports of labor-intensive goods and tourism. However, we should not forget the fact that globalization also entails the exchange of knowledge.

A declining and aging population could affect economic activity not only through simple changes in labor input but also through various other channels.¹² It also could have an impact on other factors such as social security.¹³ Some argue that a declining population leads to a decrease in the number of those engaged in knowledge production, resulting in an end to economic growth.¹⁴ Further research about the effects of a declining population on economic growth is still necessary.

D. Role of Monetary Policy

As stipulated in the Bank of Japan Act, the aim of the Bank's monetary policy is "achieving price stability, thereby contributing to the sound development of the national economy." Of course, economic growth is supported by the growth policies that have an effect on the supply side of the economy. However, discussions over Japanification suggest that monetary and fiscal policies that influence the demand side of the economy and stabilize nominal expenditure also are important in sustaining economic growth.¹⁵

¹² See Chart 3 in Wakatabe, M., "Has Japan's Economy Changed?: Challenges and Prospects," speech at the Japan Society in New York, October 3, 2019, http://www.boj.or.jp/en/announcements/press/koen_2019/ko191004a.htm/.

¹³ With regard to various aspects of population, see Morland, P., *The Human Tide: How Population Shaped the Modern World* (London: Hodder & Stoughton, 2019).

¹⁴ For this argument, see Harding, R., "The Costs of a Declining Population," *Financial Times*, January 14, 2020; Jones, C. I., "The End of Economic Growth?: Unintended Consequences of a Declining Population," *NBER Working Paper*, no. 26651, 2020. If the economy is close to the end of economic growth, the role of AI may become more important. For further discussion, see Aghion, P., Jones, B. F., and Jones, C. I., "Artificial Intelligence and Economic Growth" in Agrawal, A., Gans, J., and Goldfarb, A., eds., *The Economics of Artificial Intelligence: An Agenda* (Chicago: University of Chicago Press, 2019), 237-82.

¹⁵ Experience of Japanification poses questions to a variety of dichotomies in economics: nominal and real GDP, the short term and long term, as well as the business cycle and economic growth. An increasing amount of research has been conducted regarding the case where a negative shock of monetary policy could have a long-term negative impact on real GDP if there are hysteresis effects. As one of the research papers that emphasize the hysteresis effects on capital accumulation and technological progress, see Jordà, Ò., Singh, S. R., and Taylor, A. M., "The Long-Run Effects of Monetary Policy," *NBER Working Paper*, no. 26666, 2020.

IV. Economic Developments in Ehime Prefecture

Now, let me talk about the economy of Ehime Prefecture. The economy has continued to recover on the whole, although some weakness has been observed in firms' production activities. With regard to business fixed investment, despite being lower than the level of the previous fiscal year, when large-scale investments were undertaken, an active investment stance has been maintained, mainly in investments intended for labor saving, capacity expansion, and research and development. Public investment has increased, mainly led by construction related to restoration and reconstruction following the heavy rains that affected western Japan in July 2018. Private consumption has picked up steadily, albeit with fluctuations due to the effects of such factors as the consumption tax hike.

Looking ahead, I would like to focus on how to achieve economic growth with a declining population. In Ehime Prefecture, many efforts have been made to overcome various challenges.

For example, in the paper and pulp industry of the prefecture -- which is the second largest in Japan in terms of shipments -- paper-producing firms have made fixed investment aimed at expanding capacity and enhancing labor productivity to meet buoyant domestic and external demand. Firms in the maritime and shipbuilding industries, which form the maritime cluster with numerous relevant firms, have promoted an enhancement of manufacturing capacity and an expansion in fleet capacity. With the aim of enhancing production efficiency, they also have made further efforts in research and development and reinforced inter-firm cooperation to compete with firms abroad.

Moreover, as for citrus fruits, of which Ehime Prefecture is the leading producer in Japan, the farming system of the Nanyo area was designated as one of the Japanese Nationally Important Agricultural Heritage Systems, while efforts have been made toward reconstruction following the damage caused by the heavy rains that hit western Japan in July 2018. In the field of nationally famous high-grade citrus, it has produced a new cultivar called *Beni Princess* and full-scale production is expected. The prefecture also has pushed forward with making high-value-added products in the primary industry such as in the fishing industry that has the highest output of marine aquaculture products in Japan and in the rice farming industry. For

example, the original brand rice of the prefecture called *Hime-no-rin* has been developed. I have heard that the Research Institute of Agriculture, Forestry, and Fisheries in Ehime Prefecture spent as long as 16 years to develop this brand rice.

Tourism is also important in terms of capturing demand from outside the prefecture. Let me take the example of the main building of *Dōgo Onsen*, which is designated as an important cultural property and a symbol of *Dōgo Onsen* hot springs. After more than 120 years since the last renovation, conservation repair work in consideration of the future has been underway. *Dōgo Onsen* has been open for business while being under construction, and I hear that this is the first attempt in the country. Meanwhile, the prefecture has been making various efforts to attract visitors, such as the *Dōgo* Reborn Project. In addition, regular direct flights between Matsuyama and Taipei were launched last July. Thus, the number of both domestic and foreign visitors to the prefecture has been firm on the whole. Partly because more flights between the two areas are scheduled to start operating this April, the number of visitors is expected to increase further. I hope that the economy of Ehime Prefecture will continue developing further.

Conclusion

As I mentioned earlier, Japanification has been used as a synonym for low, or negative, inflation and low growth. After the global financial crisis, the inflation rates declined in Europe and the United States, but it is noteworthy that the inflation rate in Japan has turned positive from negative territory since the introduction of a large-scale monetary easing in 2013 (Chart 19).

It is true that Japan's inflation rate has not reached the Bank's price stability target of 2 percent and the risk that the economy will fall into deflation again has not been dispelled completely. Given this situation, the Bank has continued with the large-scale monetary easing. Since around last summer in particular, it has clarified its policy stance of being tilted toward monetary accommodation, as downside risks to Japan's economic activity and prices have become significant due to the continued slowdown in the global economy. Since the downside risks are still significant, the Bank, while continuing to carefully examine various risks, will

not hesitate to take additional easing measures if there is a greater possibility that the momentum toward achieving the price stability target will be lost.

For now, Japanification is a cautionary tale that teaches us to be vigilant so as not to fall into prolonged deflation and low growth, but I hope it will be a success story of Japan overcoming deflation and accomplishing an improvement in the economic growth rate.

Speaking of novels associated with Ehime Prefecture, a famous one is Shiba Ryotaro's *Saka no ue no kumo* (*Clouds above the Hill*), in which the protagonists are Masaoka Shiki and the Akiyama brothers -- Yoshifuru and Saneyuki -- but he also wrote a historical novel called *Date no kurofune* (*Date's Black Ship*). This is the story of a poor craftsman, Kazō (named Maebara Kōzan afterward), who lived in the Uwajima clan at the end of the Edo period, passionately taking in knowledge from overseas and succeeding in building a steamship only five years and seven months after the arrival of Commodore Perry's black ships. Kazō was so talented that the founder of Japan's modern army, Murata Zōroku (named Ōmura Masujirō afterward), who worked with Kazō to build the steamship, is said to have mentioned that he could be a professor at a university if he lived in Europe. I think Kazō's life is a guide for the path that Japan should take toward achieving economic growth -- that is, incorporating knowledge and coping with globalization.

Thank you very much for your kind attention.

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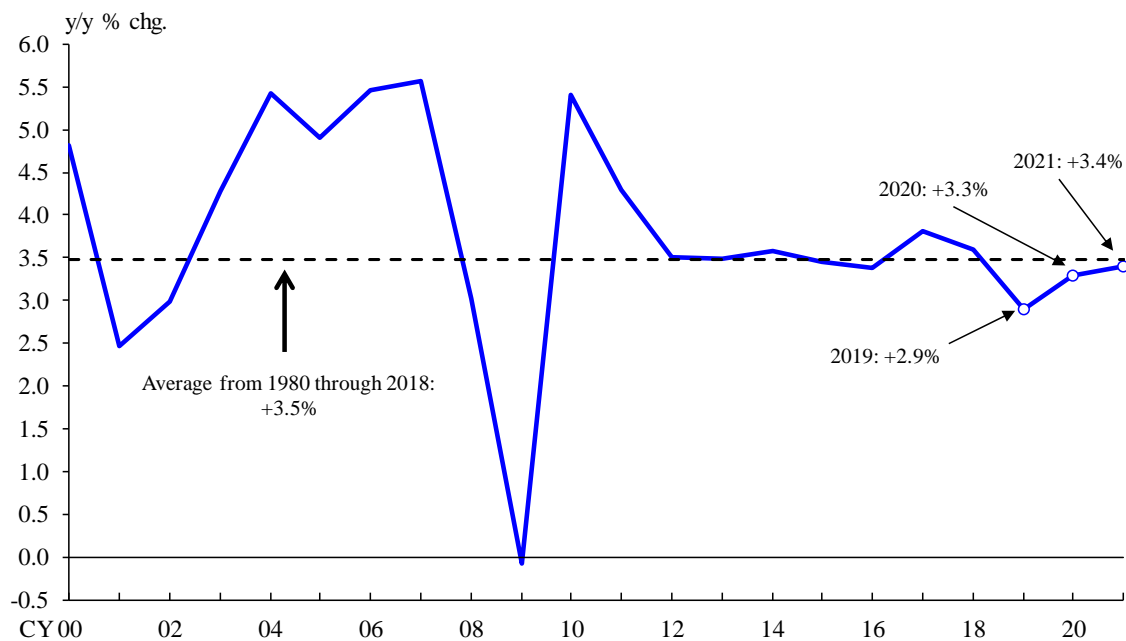
WAKATABE Masazumi

Deputy Governor of the Bank of Japan

I. Financial and Economic Developments

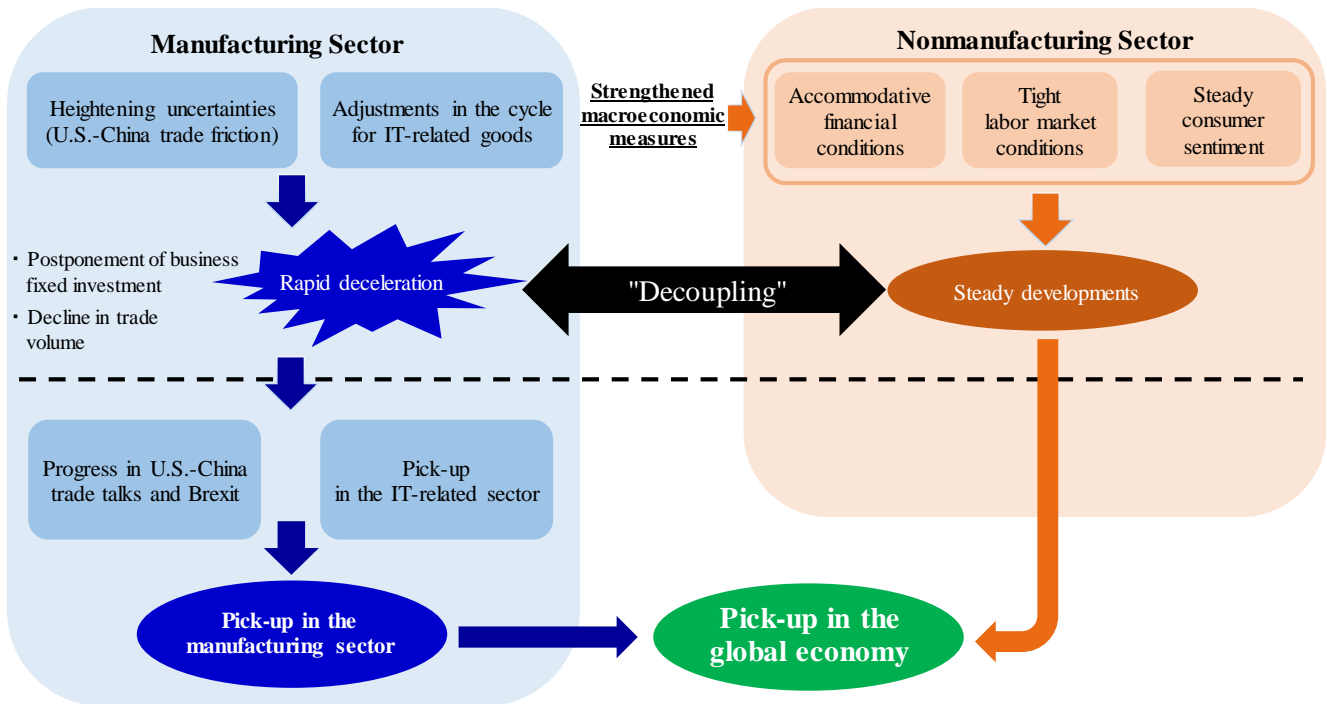
Chart 1

Global Growth Rate



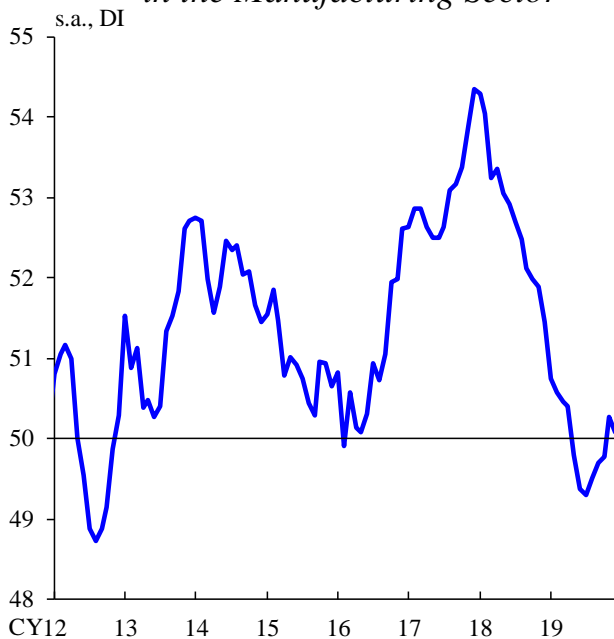
Note: Figures for 2020 and 2021 are the IMF's projections as of January 2020.
Source: IMF.

Global Decoupling between the Manufacturing and Nonmanufacturing Sectors

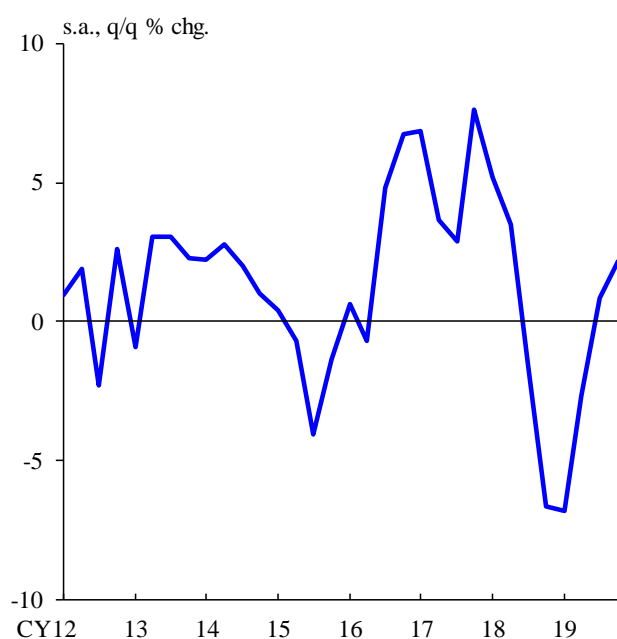


Developments in the Global Manufacturing Sector

Global Business Sentiment in the Manufacturing Sector



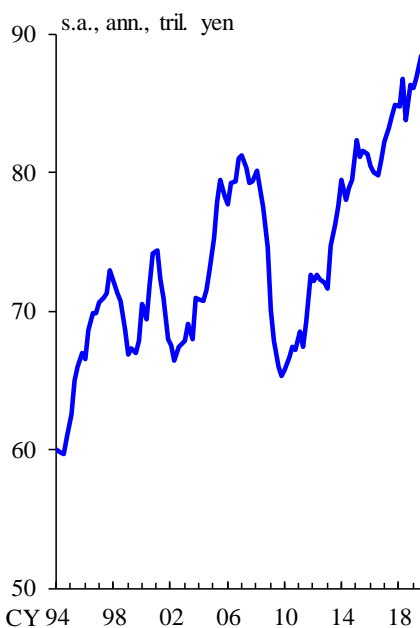
World Semiconductor Shipments



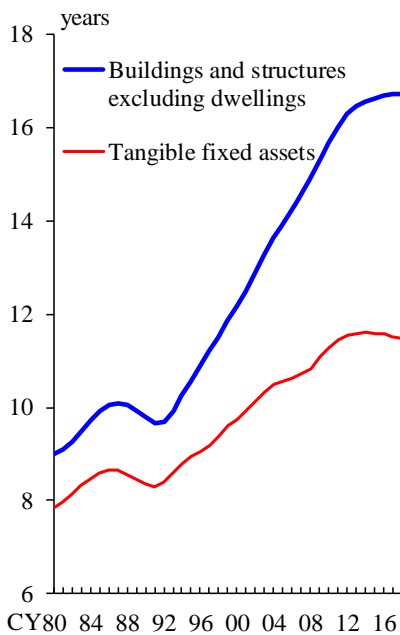
Notes: 1. In the left chart, figures are for the "J.P. Morgan Global Manufacturing PML"
 2. In the right chart, figures are based on BOJ staff estimates using WSTS data.
 Source: IHS Markit (© and database right IHS Markit Ltd 2020. All rights reserved.).

Business Fixed Investment

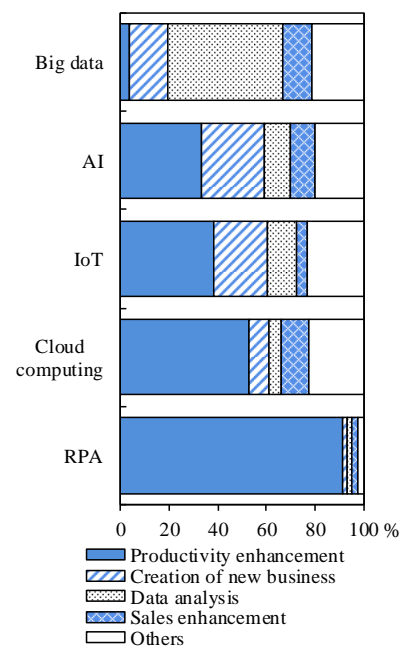
Real Business Fixed Investment



Average Age of Fixed Capital Stock



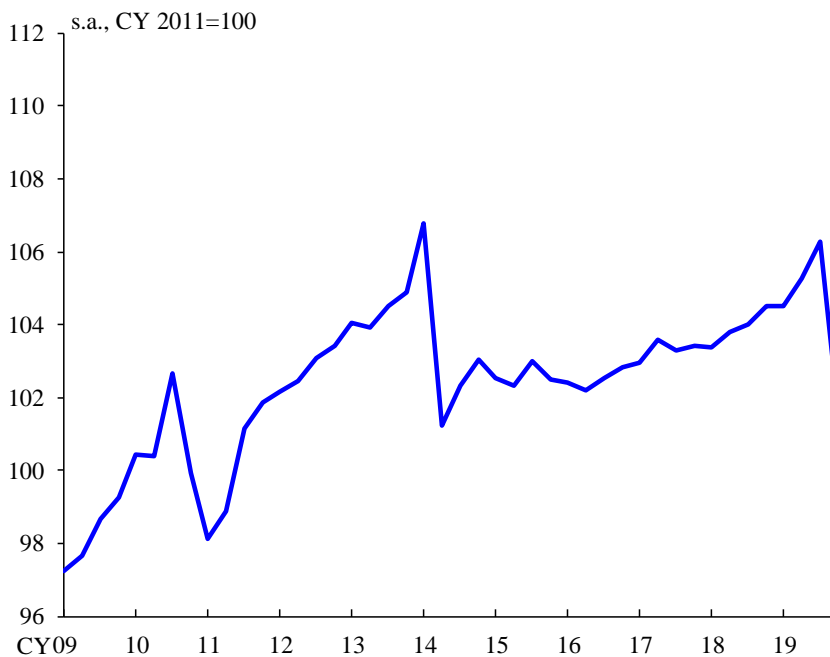
Firms' Use of Information Technology



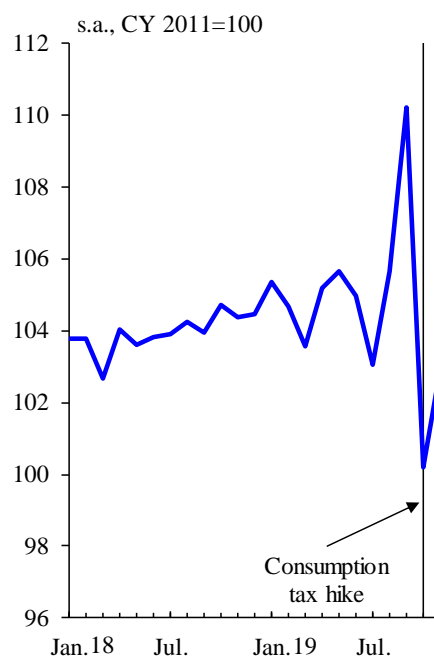
Notes: 1. For details relevant to the middle chart, see BOX 3 in the January 2020 Outlook Report.
 2. In the right chart, figures are from the survey for fiscal 2018. For details, see BOX 3 in the January 2020 Outlook Report.
 Sources: Cabinet Office; Research Institute of Economy, Trade and Industry; Ministry of Internal Affairs and Communications; Japan Users Association of Information Systems.

Private Consumption

Long-Term Developments (Quarterly)



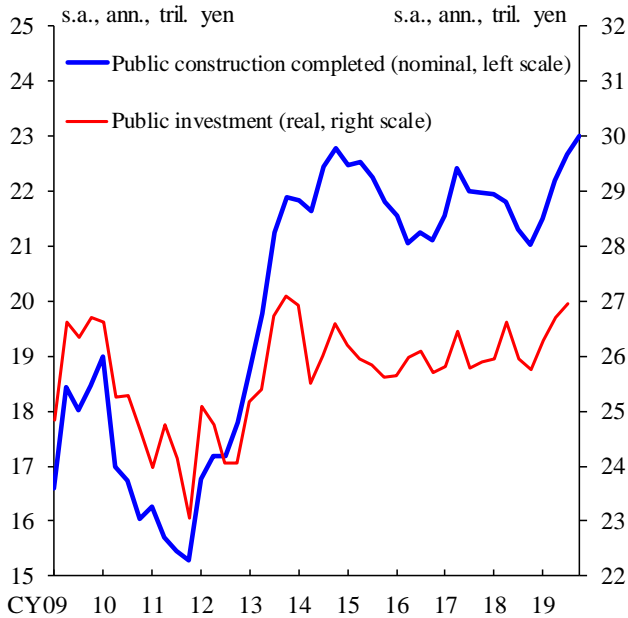
Recent Developments (Monthly)



Note: Figures are for the Consumption Activity Index (travel balance adjusted, real). They exclude inbound tourism consumption and include outbound tourism consumption.
 Sources: Bank of Japan, etc.

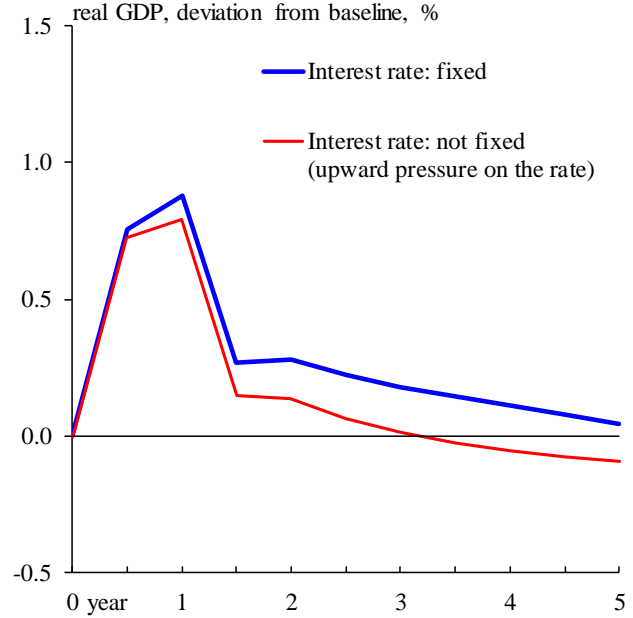
Government Spending

Public Investment



Simulation

<Case: Public Investment Increases by 1% of Nominal GDP during the First Year>

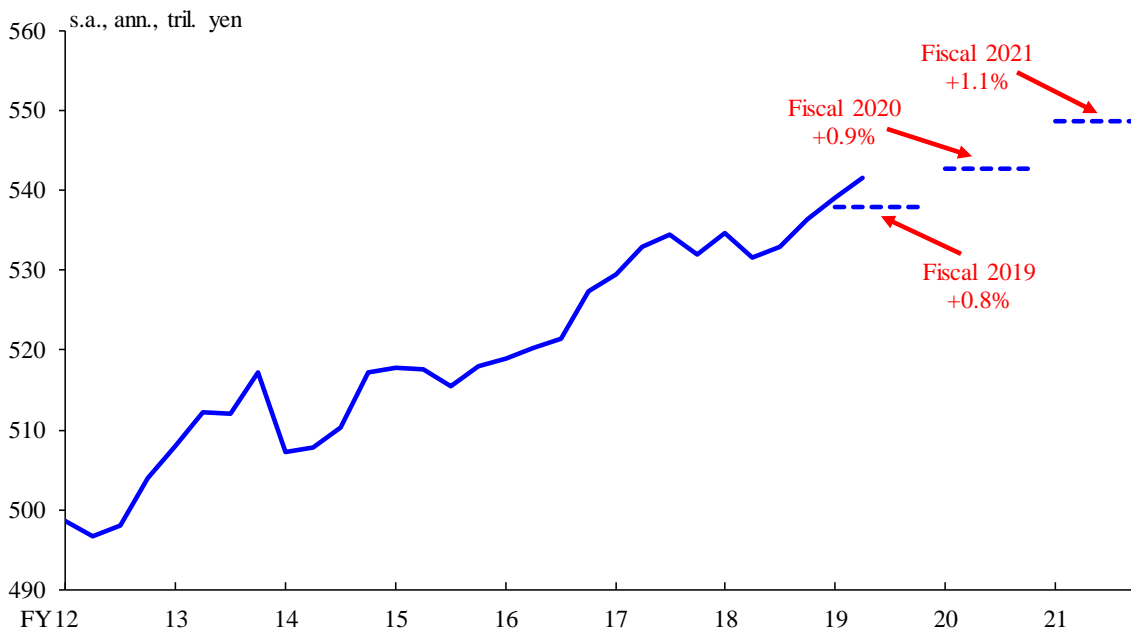


Note: For details relevant to the right chart, see BOX 1 in the January 2020 Outlook Report.
Sources: Cabinet Office; Ministry of Land, Infrastructure, Transport and Tourism; Bank of Japan, etc.

BOJ's Economic Forecasts

Real GDP

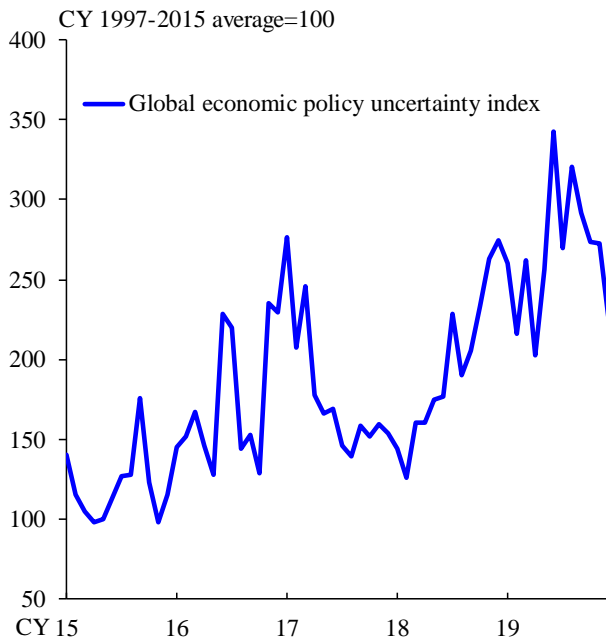
<January 2020 Outlook Report>



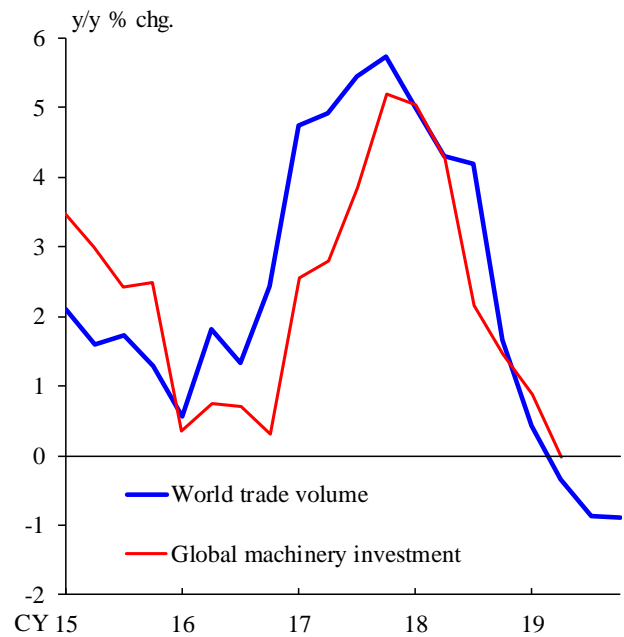
Note: Forecasts are the medians of the Policy Board members' forecasts (point estimates).
Sources: Cabinet Office; Bank of Japan.

Uncertainties regarding Overseas Economies

Policy Uncertainty Index



World Trade Volume and Global Machinery Investment

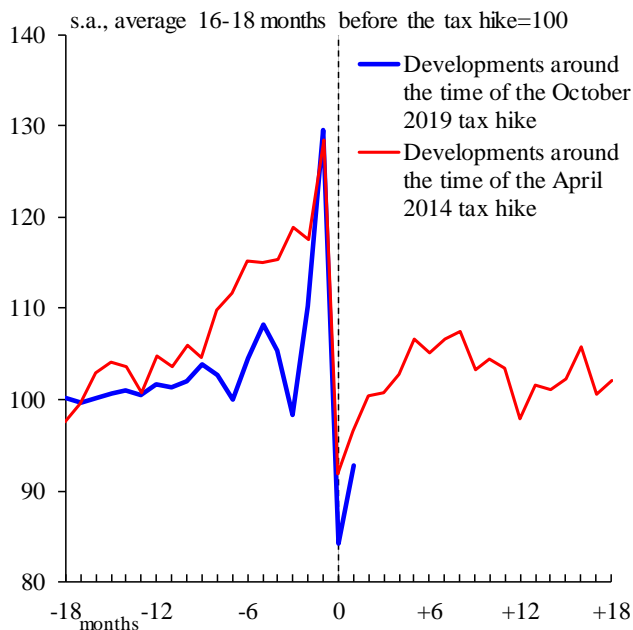


Note: In the right chart, figures for world trade volume are for real imports.
Sources: Economic Policy Uncertainty; CPB Netherlands Bureau for Economic Policy Analysis; IMF.

Developments in Private Consumption before and after the Consumption Tax Hikes

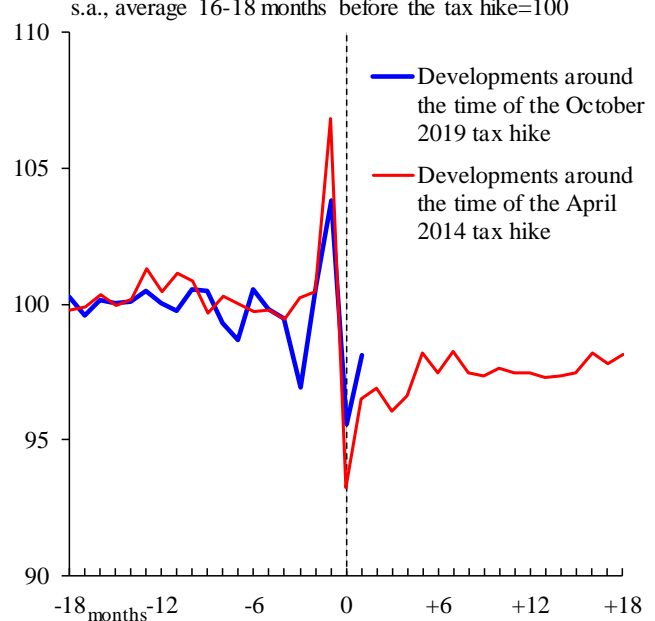
Durable Goods

(Automobiles + Household Electrical Appliances)



Nondurable Goods

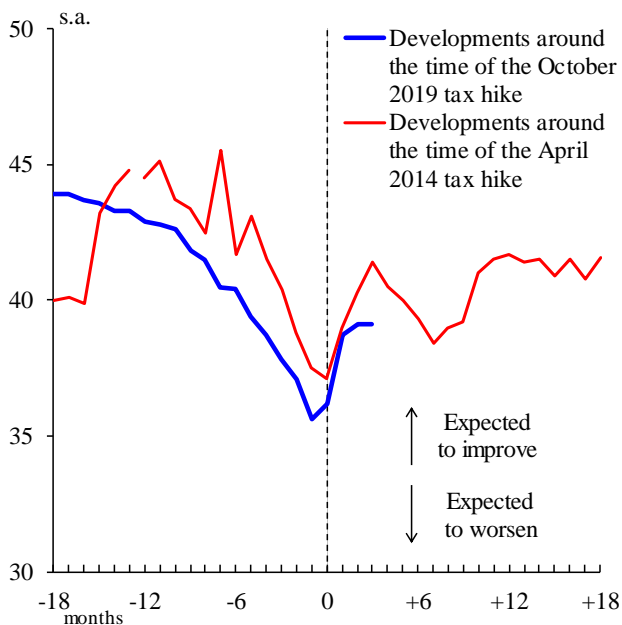
s.a., average 16-18 months before the tax hike=100



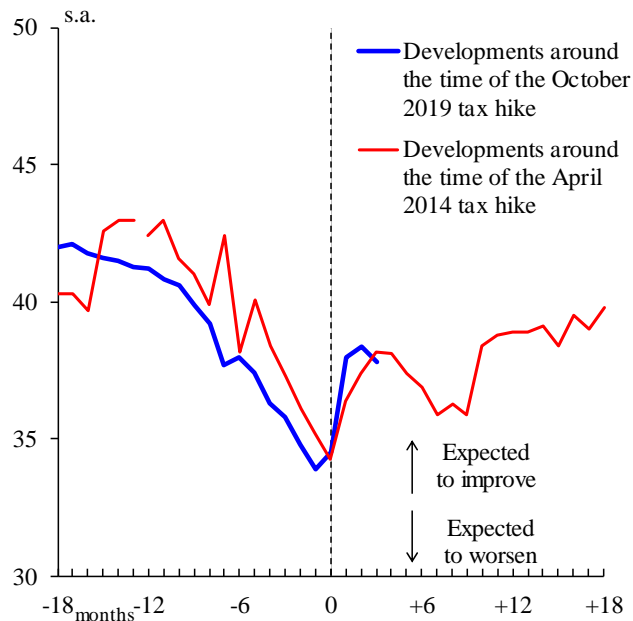
Notes: 1. Month 0 is the month in which the consumption tax rate was raised -- namely, April 2014 or October 2019.
2. In the right chart, nondurable goods include goods classified as "semi-durable goods" in the SNA.
Sources: Bank of Japan, etc.

Developments in Consumer Sentiment before and after the Consumption Tax Hikes

Consumer Confidence Index



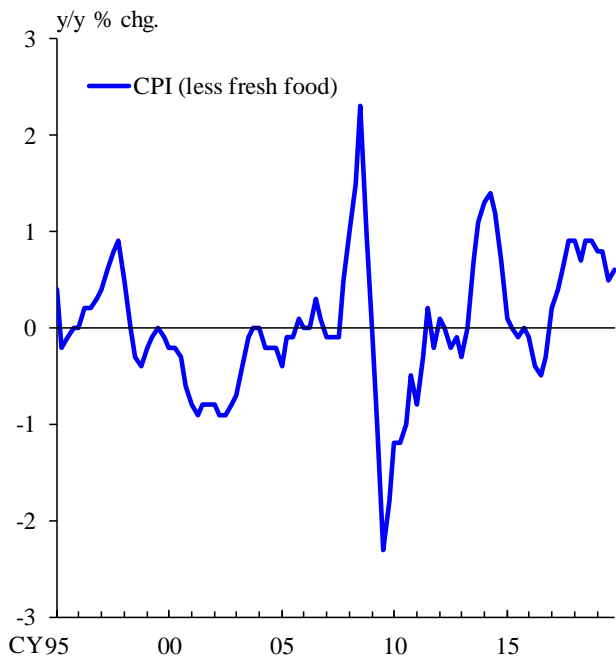
*Overall Livelihood
(Consumer Confidence Index)*



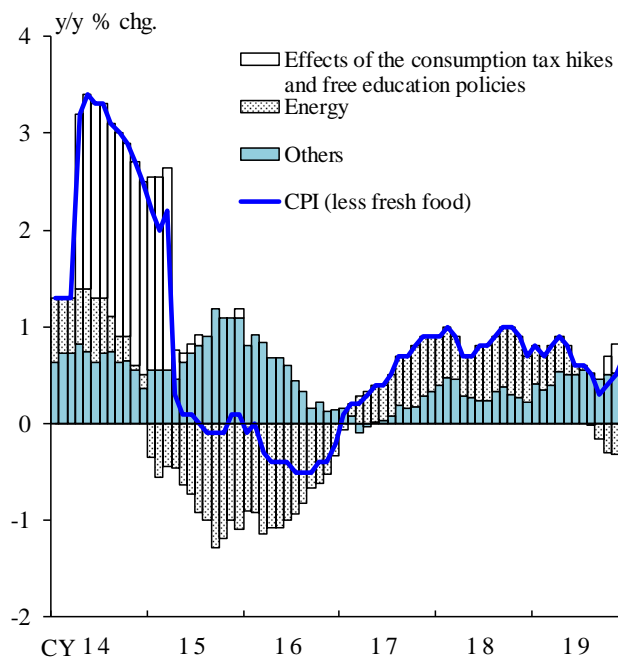
Notes: 1. Month 0 is the month in which the consumption tax rate was raised -- namely, April 2014 or October 2019.
2. There is a discontinuity in the data in April 2013 due to a change in the survey method.
Source: Cabinet Office.

Consumer Prices

Long-Term Developments



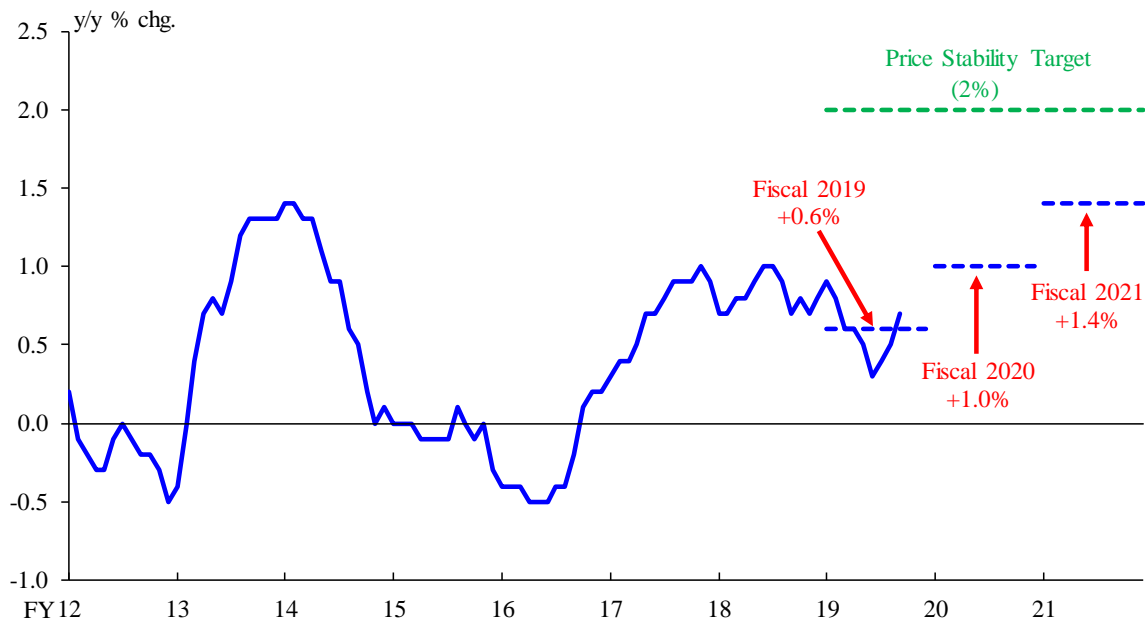
Recent Developments



Note: In the left chart, figures exclude the effects of the consumption tax hikes. They incorporate the effects of the October 2019 tax hike and policies concerning the provision of free education.
Source: Ministry of Internal Affairs and Communications.

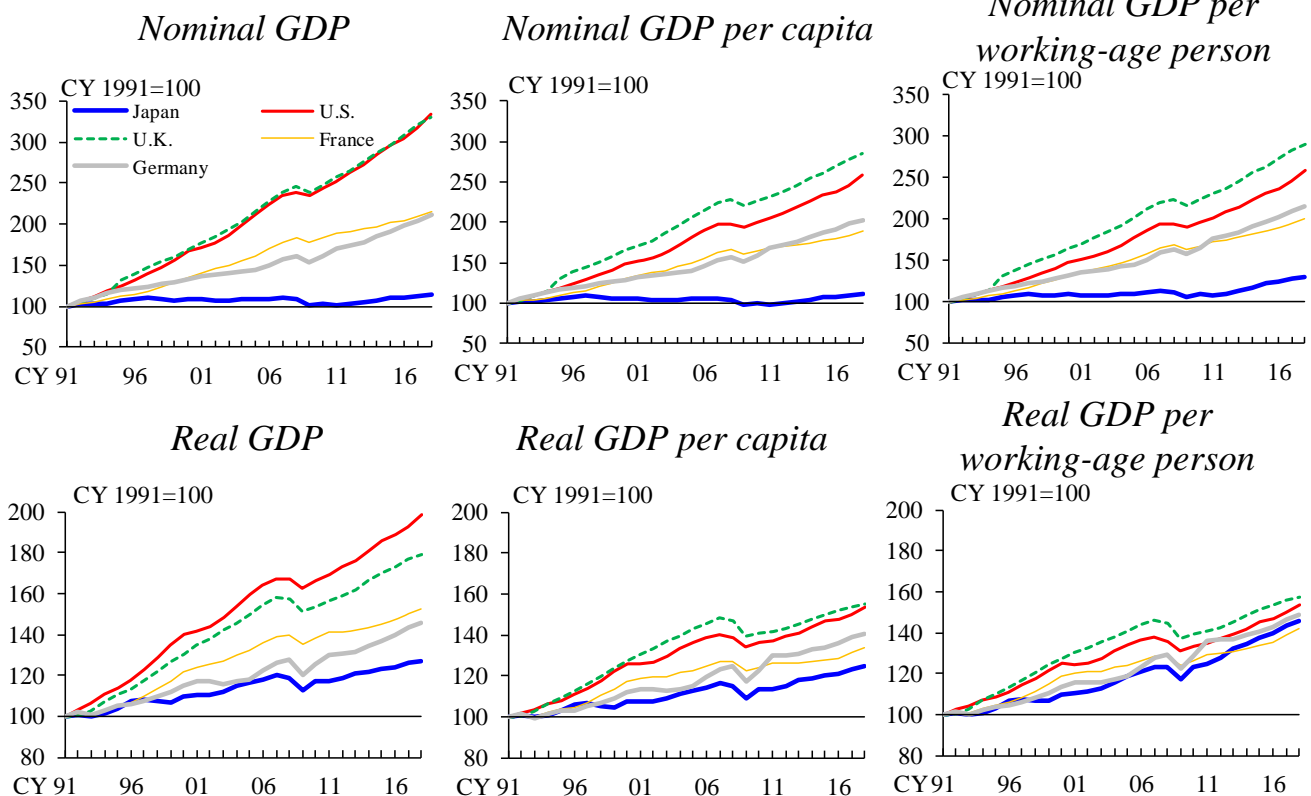
BOJ's Price Forecasts

CPI (All Items Less Fresh Food)
 <January 2020 Outlook Report>



Note: Figures exclude the effects of the consumption tax hike in April 2014. Forecasts are the medians of the Policy Board members' forecasts (point estimates).
 Sources: Ministry of Internal Affairs and Communications; Bank of Japan.

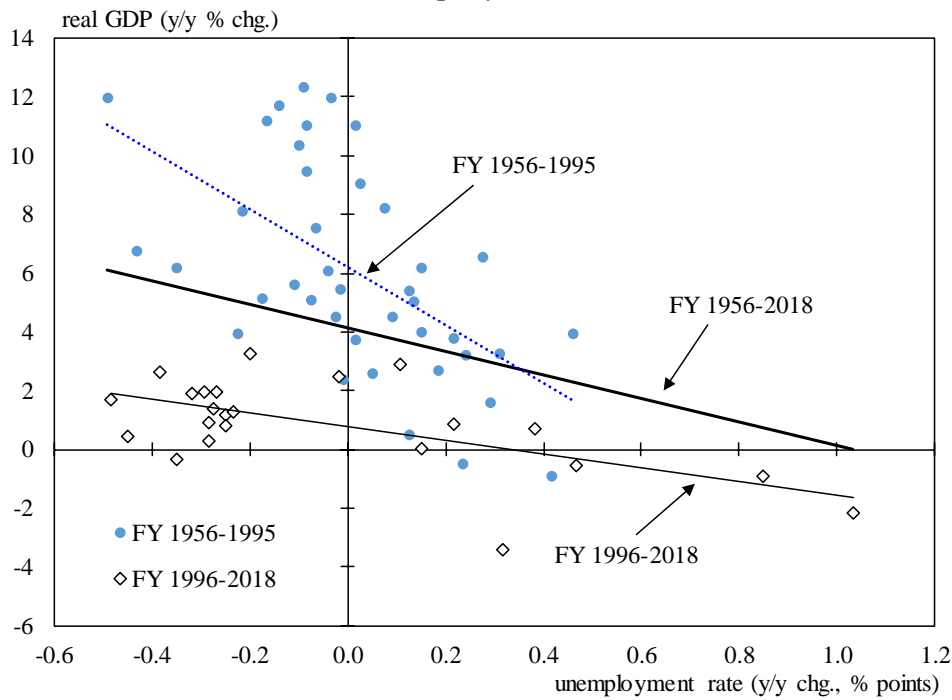
International Comparison of GDP



Source: World Bank.

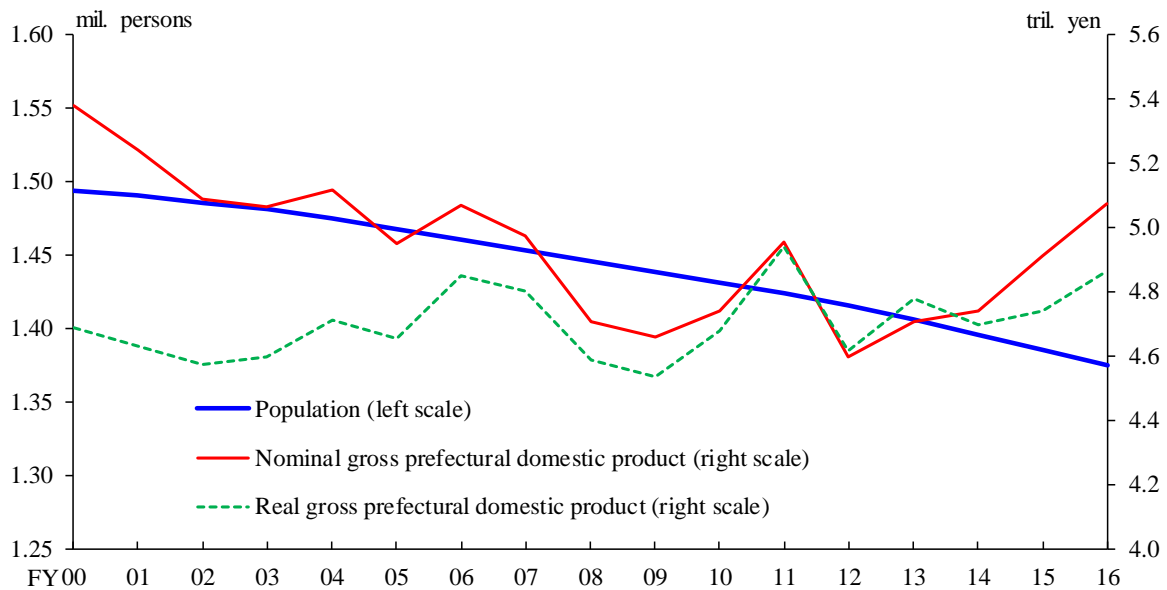
Okun's Law

Relationship between Economic Growth Rate and Unemployment Rate



Sources: Cabinet Office; Ministry of Internal Affairs and Communications.

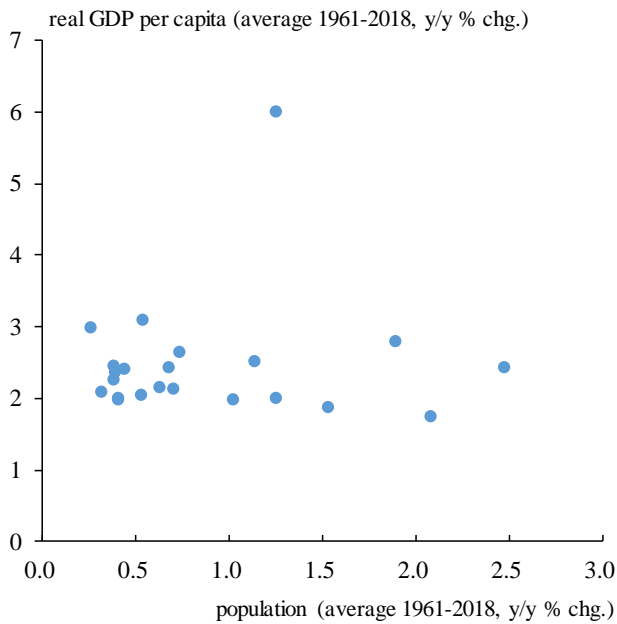
Total Population and Gross Domestic Product of Ehime Prefecture



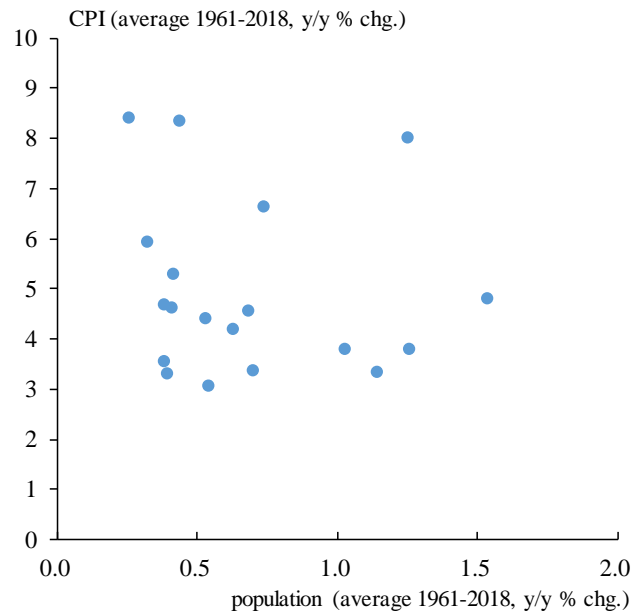
Source: Cabinet Office.

Relationships between Population Growth and GDP/Inflation

Population Growth and GDP Growth per Capita



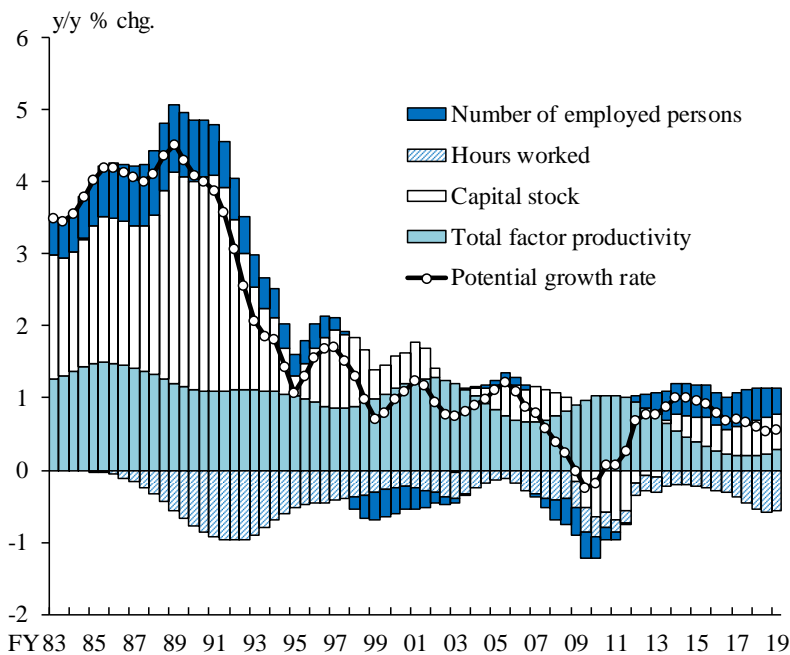
Population Growth and Inflation



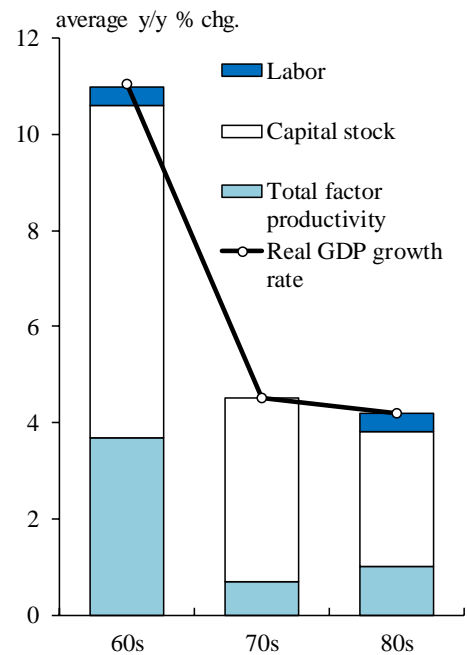
Notes: 1. Figures are those of 22 OECD member countries for which data from 1961 onward are available.
 2. In the right chart, figures for Israel, Mexico, and Turkey, of which inflation rates are above 10 percent, are not shown.
 Source: World Bank.

Potential Growth Rate

Recent Developments

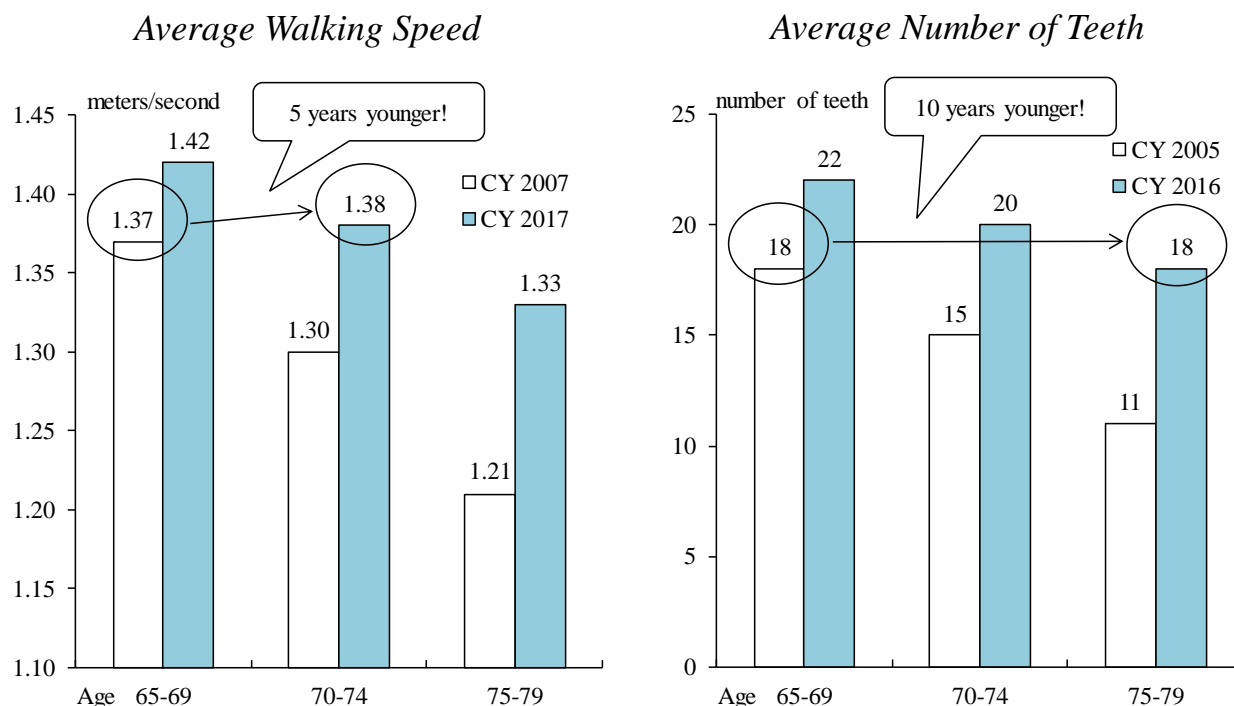


Developments in the 1960s-80s



Note: In the right chart, figures are from the "White Paper on International Economy and Trade 1998."
 Sources: Ministry of International Trade and Industry; Bank of Japan.

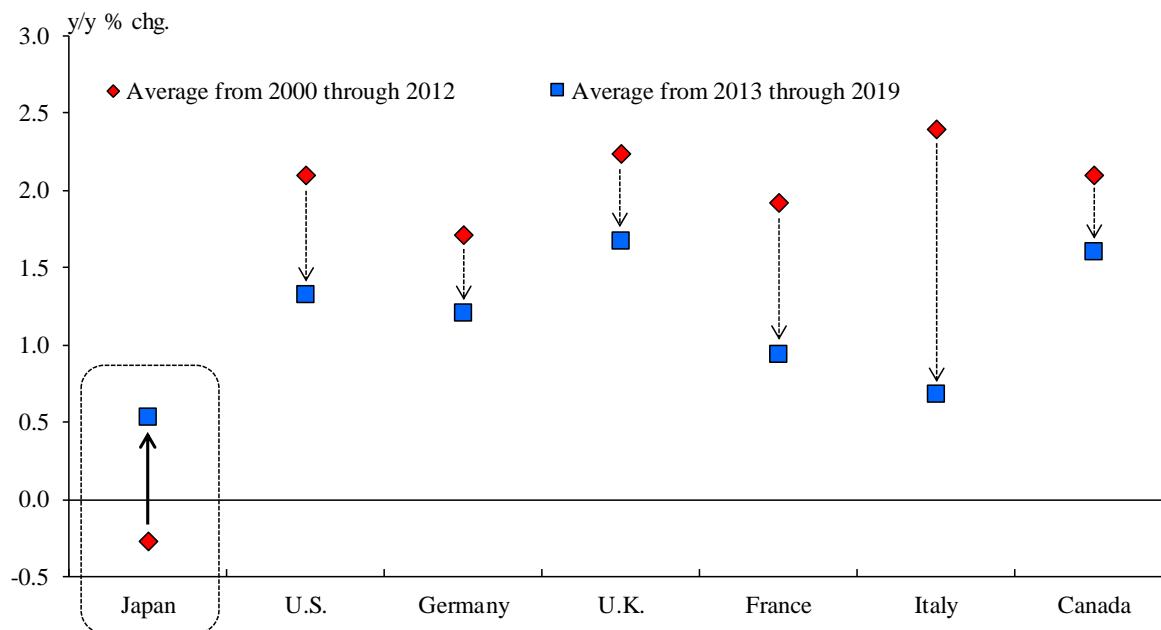
Evidence of Slowdown in Physical Aging



Notes: 1. See Toshitaka Sekine, "Does Demography Really Matter?," presentation at the G20 Symposium titled "For a Better Future: Demographic Changes and Macroeconomic Challenges," 2019.
 2. In the left chart, average walking speed is the arithmetic average of men's and women's walking speeds.
 Sources: National Center for Geriatrics and Gerontology; Ministry of Health, Labour and Welfare.

Conclusion

Price Developments in G7 Countries



Notes: 1. Figures for Japan are the CPI (excluding the effects of the April 2014 consumption tax hike and incorporating the effects of the October 2019 tax hike and policies concerning the provision of free education); those for U.K. and Canada are the CPI; those for U.S. are the PCE deflator; and those for the euro area countries are the HICP.
 2. The figure for the U.S. for 2019 is the January-November average.
 Sources: Ministry of Internal Affairs and Communications; Haver.