



## **Productivity, Demographics and Societal Choice**

**Masaaki Shirakawa**  
Aoyama Gakuin University

Joint Conference by the Australian National University  
and the Japan Research Institute, Limited  
April 25, 2024

This report is based on the recording of the keynote speech given by Mr. Masaaki Shirakawa, Distinguished Guest Professor of Aoyama Gakuin University and Former Governor of the Bank of Japan, at the Joint Conference held by the Australian National University and the Japan Research Institute, Limited on April 25, 2024.

**You can watch the recording of the full event here;  
<https://www.youtube.com/watch?v=zXbsGFjynk8>**

### **< Disclaimer >**

This report is intended solely for informational purposes and should not be interpreted as an inducement to trade in any way. All information in this report is provided “as is”, with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information, and without warranty of any kind, express or implied, including, but not limited to warranties of performance, merchantability and fitness for a particular purpose. In no event will JRI, its officers or employees and its interviewee be liable to you or anyone else for any decision made or action taken in reliance on the information in this report or for any damages, even if we are advised of the possibility of such damages. JRI reserves the right to suspend operation of, or change the contents of, the report at any time without prior notification. JRI is not obliged to alter or update the information in the report, including without limitation any projection or other forward-looking statement contained therein.

## Introduction

Thank you for your kind introduction. It is my greatest honor and pleasure to speak at the conference organized jointly by the Australian National University and the Japan Research Institute, Limited. The topic of today's conference, "Searching for Productivity Growth in Australia and Japan" is quite timely and relevant, considering that the trend growth rate has been declining in both countries.

## Why and how do we discuss productivity?

### Why and how do we discuss productivity?

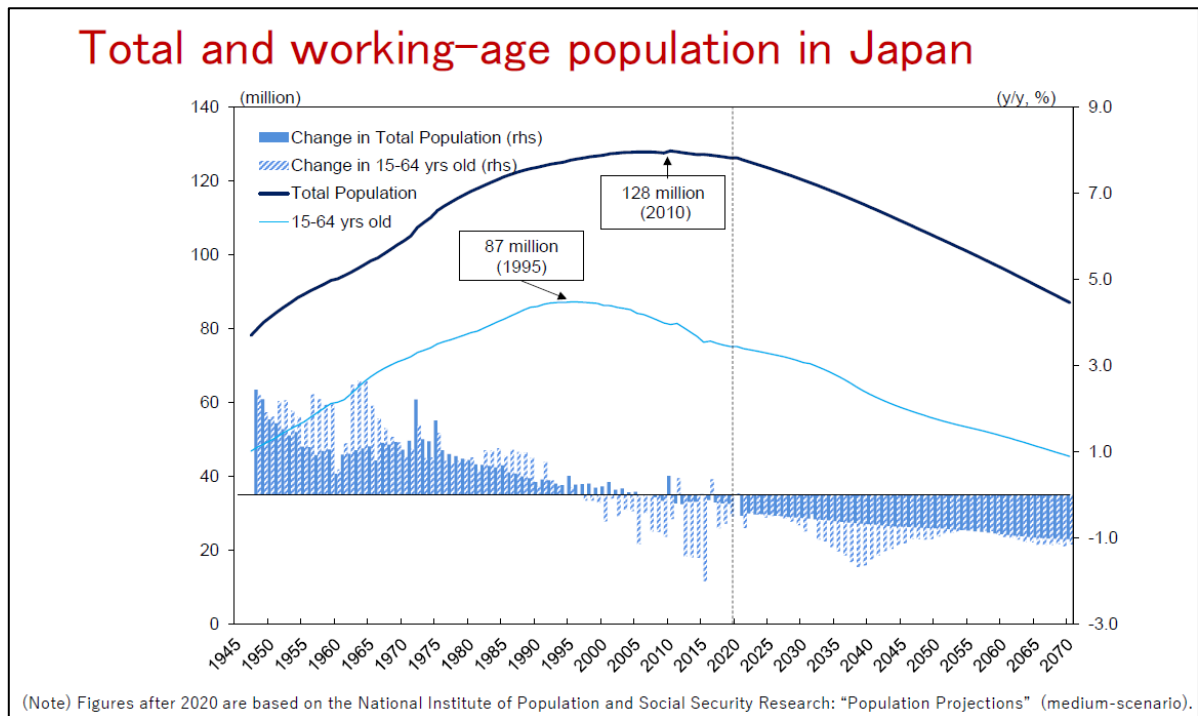
- "Productivity isn't everything, but, in the long run, it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker." (Paul Krugman)
- This is true. But in discussing living standard, just focusing on productivity is sometimes misleading and too narrow.
- Three key word are important:
  - **Productivity**
  - **Demographics**
  - **Societal choice**

Why do we discuss productivity? Paul Krugman once said: "Productivity isn't everything, but, in the long run, it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker." I agree with him. Having said that, in discussing living standard, just focusing on productivity is sometimes misleading or too narrow.

If I am allowed to add two more words in capturing the challenges facing both countries in terms of living standard, one is definitely demographics, although the average population growth rate of Australia is higher, and the nature of demographic challenge is a bit different. When I say the importance of demographics, I do not mean that demographics and productivity are independent. Rather, they are inherently related, as I will explain later.

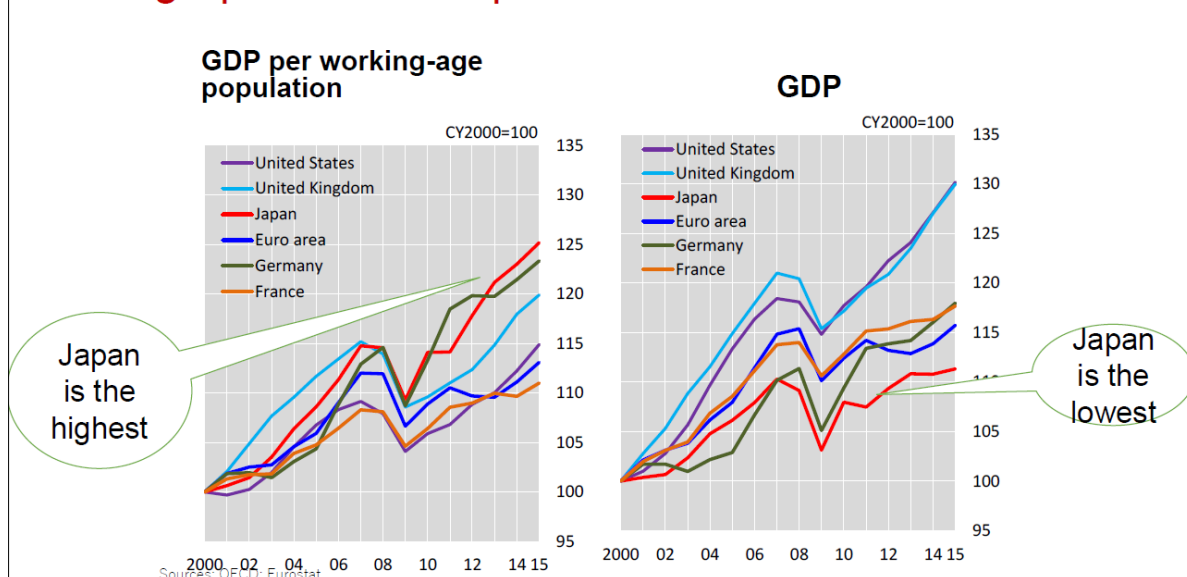
The other important word is societal choice. Demographics and productivity are ultimately reflecting the societal choice in a fundamental sense. So, I have decided to fulfill my duty as a keynote speaker by speaking under the title, "Productivity, Demographics and Societal Choice."

## Demographic challenge



I will start with discussing demographics. The demographic challenge facing Japan is literally unprecedented in modern economic history in the world. Its working-age population peaked in 1995. The cumulative decline in the three decades from the peak to 2023 is 13.3 million, or 15.3%. The annualized decline rate is 0.6%. No country has ever lost its working-age population on this scale for reasons not related to war or illness. The total population in Japan peaked in 2010. Its cumulative decline to the present is 2.8% and the annualized decline rate is 0.2%. Looking into the future, total population decline is expected to accelerate. According to the median estimate of the latest long-run projection by the National Institute of Population and Social Security Research, Japan's population is projected to decline from the peak of 128 million to 105 million by 2050 and 87 million by 2070. This is really a scary projection.

## Demographics is so important



Probably the best way to explain about the significant impact of demographic change is to make an international comparison of the growth rate of the G7 countries. This slide shows the growth rate of GDP between 2000 and 2015. Japan's GDP growth rate, as is shown in the right-hand, is the lowest among G7 countries. At the same time, Japan's growth rate in terms of GDP per working-age population, as is shown in the left-hand, is the highest. Japan's growth of GDP per-person is just average of the G7 countries.

By saying this, I do not mean GDP growth is unimportant. Of course, GDP growth is quite important and relevant in considering issues such as the international presence of a country in the field of foreign policy and defense or sustainability of government finance and social security programs. On the other hand, it is the growth of GDP per person rather than the growth of GDP that matters for living standards of individual citizens. For this reason, some Japanese are arguing that the declining population is not a bad thing. I disagree with this argument. Their reasoning is based on the implicit understanding that GDP per-person or labor productivity is not affected by the declining population. Actually, this is not the case.

### Complex dynamics between demographics and productivity

#### Mechanism that demographic changes affect productivity growth

1. Ageing affects productivity growth through voters' preference
2. Ageing affects the societal speed of embracing new technology
3. Declining population tends to lower the economy-wide productivity growth by delaying the necessary reallocation of resources across regions
4. Declining population might decrease growth rate by reducing the number of potential talent pool of innovators

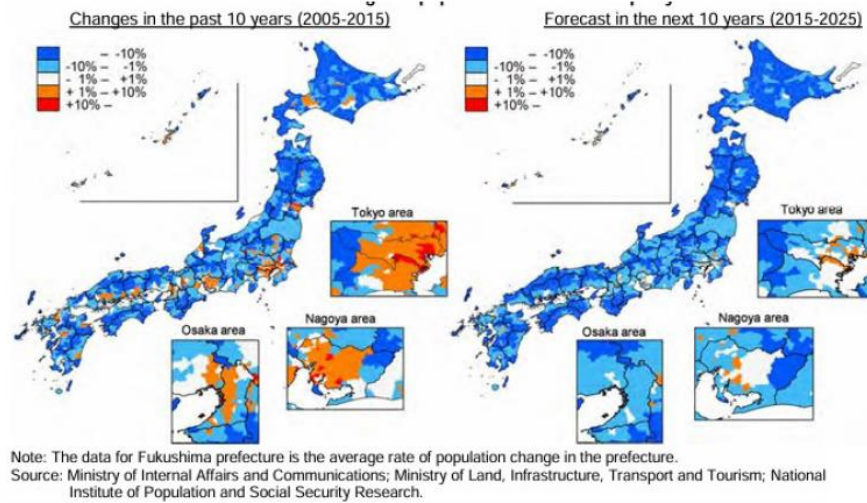
Looking at the Japanese experiences, there seems to exist at least four kinds of mechanism that the declining population affects productivity growth adversely.

First, ageing, which is an inevitable result of the declining population due to the low birth rate, affects productivity growth through voters' preferences. The median age of the Japanese population is steadily increasing. As of 2022, it was 48.7 years old. The political consequence of ageing is less government spending on basic research and higher education and more government spending on social welfare programs, which tends to lead to less productivity growth. This is a problem of the so-called "gray-hair democracy."

Second, ageing affects the societal speed of embracing new technologies. Economy-wide productivity growth depends importantly on the societal ability to embrace new technologies. A new technology itself could potentially raise productivity, but generally speaking, the elderly is slow to adapt to changing technologies.

Third, the declining population tends to lower economy-wide productivity growth by delaying the necessary reallocation of resources across regions.

## Many Japanese municipalities are losing population



Source: The Bank of Japan, Financial System Report, October 2017

As you can see, municipalities with increasing population are confined to only a few areas such as metropolitan Tokyo. In population-decreasing municipalities, it becomes costly to maintain the same level of public infrastructure such as roads, hospitals and elementary schools, once the size of the population falls below a certain threshold level. The same is true for many types of private sector services. The market size of location is one of the crucial factors affecting productivity, especially in the services sector. Productivity-wise, smooth resource allocation across regions or cities or towns is a key, but such reallocation of resources is very difficult in a population-decreasing society. Its result is a gradual decline in productivity growth.

Fourth, the declining population might decrease the growth rate by reducing the number of the potential talent pool of innovators. A small number of innovators can make outsized contributions to productivity and growth. If the likelihood that such innovators appear is constant in relationship to the total population size, then the absolute number of innovators will decline as the population declines.

When it comes to productivity, we tend to spend too much time on talking about AI or robotics or the need for innovation. But such technocratic approach is not enough. Once we recognize that such complex political and social dynamics lead to declining productivity growth, we have to think deeply of how to boost productivity. The same is true for how to increase the workforce, as I will talk about later.

### How to boost productivity

I will start with discussing about productivity. Is it possible for Japan to boost productivity growth materially? Earlier, I referred to the fact that Japan's growth of GDP per working-age population is already the highest among G7 countries. Given this already good performance, it is natural to think it is hard to further increase productivity growth.

## An international comparison of labor productivity level of OECD countries (year 2022)

#1	Iceland	255,296	#21	Turkey	103,532
#2	Norway	219,359	#22	Slovenia	103,450
#3	Luxemburg	182,738	#23	Czechoslovakia	103,491
#4	US	160,715	#24	Lithuania	97,377
#5	Switzerland	157,639	#25	Poland	97,066
#6	Belgium	153,332	#26	New Zealand	93,344
#7	Denmark	147,648	#27	Korea	92,508
#8	Austria	138,147	#28	Estonia	92,233
#9	Italy	134,745	#29	Portugal	88,777
#10	France	132,837	#30	Hungary	85,476
#11	<b>Australia</b>	<b>132,562</b>	#31	<b>Japan</b>	<b>85,329</b>
#12	Netherland	130,851	#32	Latvia	83,982
#13	Sweden	130,125	#33	Slovakia	78,135
#14	Iceland	126,394	#34	Greece	77,700
#15	Germany	125,163	#35	Chile	66,831
#16	Finland	125,150	#36	Costa Rica	59,937
#17	Canada	115,344	#37	Mexico	48,098
#18	Israel	113,573	#38	Columbia	41,722
#19	UK	112,351		OECD average	115,454
#20	Spain	108,562			

Source: Japan Productivity Center

But, if we look at the level of productivity rather than its growth, there seems to be much room for improvement potentially. According to the research by a Japanese think-tank based on OECD data, Japan is ranked as 31st among OECD countries. For your reference, Australia is ranked as 11th. The level of Japanese productivity is 64% as much as that of Australia. To the extent the level of productivity is low, there seems to be a greater potential for productivity catch-up.

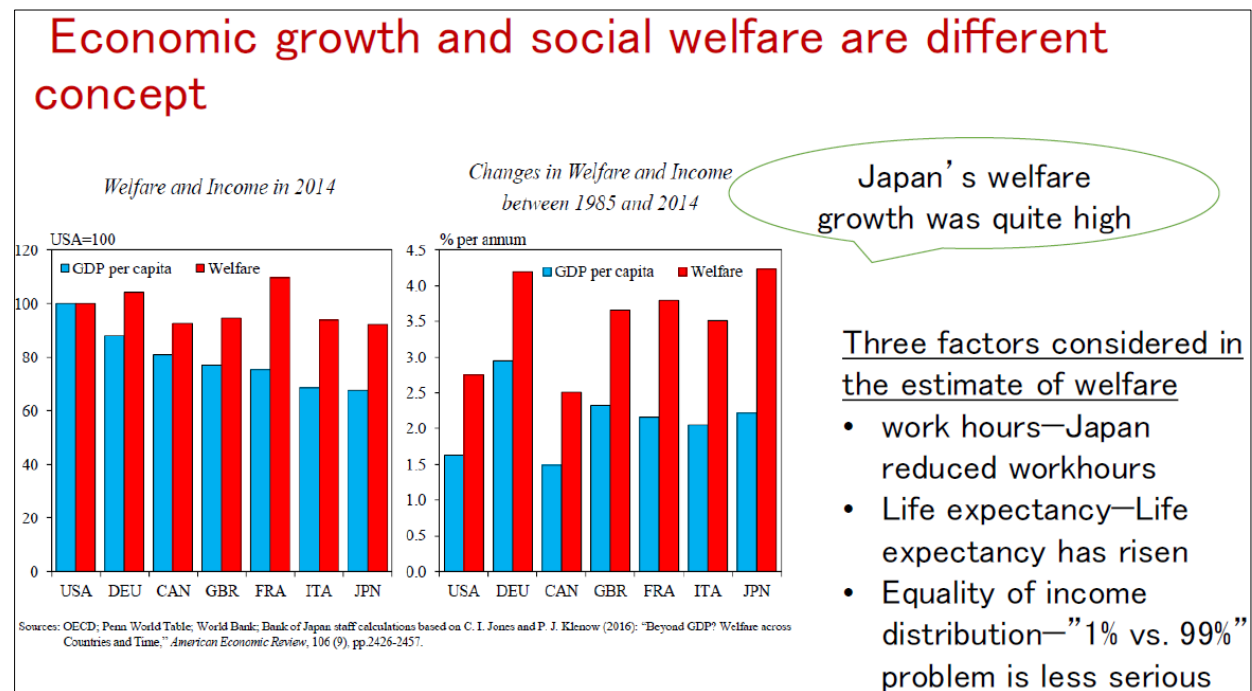
But this assessment needs some caution. This kind of international comparison presupposes the existence of same products. But actually, products offered are not necessarily the same across countries. A case in point is the service of Shinkansen. Japan's bullet train departs every 3 minutes and 20 seconds, but the average delay time is very short. For example, it was 12 seconds in 2022. This punctuality is amazing. As far as I know, such services are rather rare in foreign countries. To say Japan's productivity is low means that the hypothetical provider of such services in foreign countries is more efficient than the Japanese provider. I am doubtful. If we make an apple-to-apple comparison about productivity, probably Japan's productivity level would not be that low.

This is just one example. The Japanese society and for that matter, Japanese companies emphasize various non-economic values such as absolute accuracy, absolute safety, and absolute stability. As the above example shows, boosting productivity is not necessarily about technology but about societal choice, namely, what kind of society we want to have.

There are so many cases where societal choice matters in terms of productivity. Earlier, I explained that the declining population tends to lower productivity growth by delaying resource reallocation across regions. Japan's long-term employment practice, which used to be effective during Japan's high growth period, is another



example. It now tends to lower productivity growth by inhibiting smooth labor reallocation. I am not saying the Japanese way is good or bad. The point is we have to reflect on what is most important in increasing social welfare as opposed to productivity. Productivity, or at least conventionally measured productivity, is not everything.

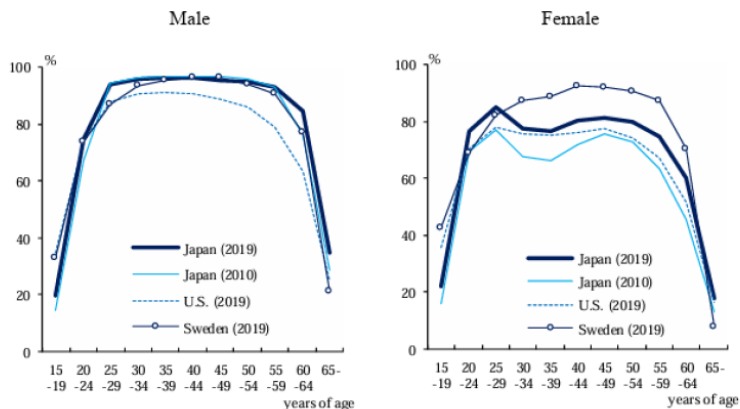


This slide shows one bold attempt to measure social welfare depicted by the red bar as opposed to GDP depicted by the blue bar. The chart in the left-hand is the level, and the right-hand is growth. Three elements are explicitly considered. Work hours, life expectancy and equality of income distribution. Compared with other major developed economies, Japan's growth performance is among the best. Japanese work hours are still long in an international comparison, but we made deliberate efforts in reducing it in the past three decades. Life expectancy is the second longest next to Hong Kong. Income inequality in Japan has widened but less so in an international comparison. What we have to think is how we should strike a balance between productivity and other factors affecting living standard or social welfare.

### How to boost workforce and prevent declining birth rate

Now I will move on to the issue of how to boost the workforce and prevent the declining birth rate. The most straightforward way to increase workers is to boost the labor participation rate. In this respect, Japan's labor participation rate for the elderly is already the highest among advanced economies. A further room for increasing the labor participation rate for the elderly is non-existent. In terms of gender, it was well-known that Japan's labor participation rate for females had been low, but in the recent decade, it has increased tremendously. It is now higher in Japan than in the US., though still lower than in Nordic countries. The problem with Japan's female participation is that the number of female workers taking on managerial positions is small. We have to redouble our efforts.

## Labor participation rate by gender : an international comparison



Japan's labor participation rate for the elderly is already the highest among advanced economies. Japan's labor participation rate for female was low, but in recent decade, it has increased tremendously. It is now higher in Japan than in the U.S., though still lower than in Nordic countries.

Source: Yagi et al. "Productivity trends in Japan—reviewing recent facts and the prospects for post Covid-19 era", July 2022

## Inflows of foreign population into selected OECD countries

	2017-2019 avg.	2017	2018	2019	2020	2021
Germany	1,371	1,384	1,384	1,346	995	1,140
United States	1,085	1,127	1,097	1,032	707	740
Spain	560	454	560	666	415	457
<b>Japan</b>	<b>529</b>	<b>475</b>	<b>520</b>	<b>592</b>	<b>221</b>	<b>80</b>
Türkiye	470	365	467	578	242	615
Korea	462	453	495	438	233	221
United Kingdom	363	354	357	378	234	386
Canada	316	286	321	341	185	406
Italy	284	301	286	265	192	244
Chile	267	207	339	254	155	97
France	258	246	260	268	208	250
Netherlands	197	184	191	215	171	208
Australia	189	224	187	156	137	154

(Source) OECD

Receiving more foreign workers or immigrants is the second way to increase workers. The ratio of foreign-born people to total population is still as low as 2%. But if we look at flow numbers, the situation is now rapidly changing. Among OECD countries, prior to the Covid-19 crisis, Japan was already the fourth largest country in terms of annual inflow of foreign workers.

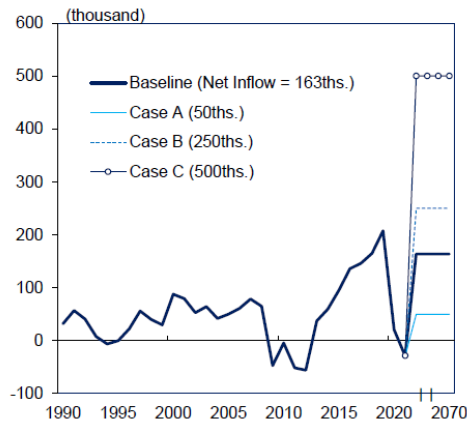
According to the aforementioned research, the average annual increase in foreign workers in the period between



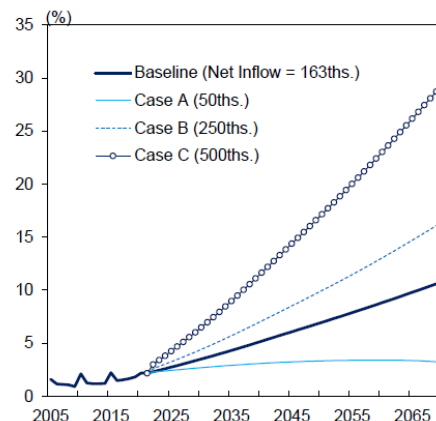
2022 and 2070 is projected to be 164 thousand persons. This number is already not insignificant, compared with the number of newly born Japanese babies of about 770 thousand. The annual increase in foreign workers already amounts to about one fifth of Japanese babies. If this trend continues, as the baseline case shows in the right-hand chart, the ratio of foreign workers to total population will increase to 10.8% in 2070 and that of people aged between 18 years old and 34 years old will increase to 16.8%.

## Foreign-born people are increasing rapidly in Japan

Net inflows of foreign-born



Share of foreign-born in the total population



(Note) Figures after 2020 are based on the National Institute of Population and Social Security Research: "Population Projections" (medium-scenario).

The third way to increase workers is the effort of boosting the birth rate. Given the Japanese situation that extramarital children are very rare, the action needed is to increase marriage itself and the number of babies of married couples. As for the former, it is striking that the marriage rate for non-regular workers is so low. In this respect, various social policies and income redistribution policies are needed. As for the latter, we are not sure what is effective in boosting the birth rate for couples but attempting to do so is still important. In recent years, the government is giving couples various financial incentives such as subsidies for kindergarten fees and school tuition. But we have to note that the significant part of the cost of raising children is the foregone income of females due to the termination of their carriers. In this respect, it is striking that the ratio of females taking temporary jobs sharply increases after they give birth. Considering this, what seems to be more important than financial incentives in boosting the birth rate is to change the social practice of the Japanese society in term of raising children. A case in point is paternal leave. It is not so common for the Japanese husband to take a long paternal leave. When it comes to the low birth rate, as is clear from my explanation, we need not only economic analysis but also sociological analysis.

### Future prospect

Finally, I will offer my assessment of how successful Japan will be in terms of productivity in the decades to come.

In this respect, the past might be some guide. The performance was not so bad as is implied by the oft-used expression, “lost three decades”, if we adjust for a decline in the population, but no so good, compared with the high bar necessitated by the rapid decline in the population. I would say this under-performance is related to the fact that the cause of Japan’s low growth was wrongly identified. Judging from public discourse, what was mainly identified as a cause was almost always deflation. “Overcoming deflation” was used almost like a mantra in many official statements of the government, remarks by CEOs of companies and economists’ commentaries.

How about future prospects? There are some positive developments.

First, compared with a few years ago, people are increasingly aware of the importance of tackling with demographic challenges, though somewhat belatedly.

Second, recent labor shortages due to the withdrawal of the baby-boomer generation who are now in their mid-70s, is making inefficient firms exit from markets. Of course, this is a painful process but nonetheless it has the effect of raising productivity.

Third, on the monetary policy front, a baby-step measure was taken recently. In retrospect, the prolonged period of ultra-accommodative monetary policy had the effect of keeping inefficient firms alive, which tended to lower productivity growth. At this moment, we do not know to what extent the situation will change in the future but at least, it is heading for a good direction.

At the same time, there are some concerning phenomena as well. A case in point is the oft-heard expression of “virtuous cycle between wages and prices.” Nowadays, wage increase is increasingly discussed as if it is a critical condition or magic for the revival of the Japanese economy. But just tinkering with nominal wages has nothing to do with economic fundamentals. Stating the obvious, what does matter is productivity.

### What Japan and Australia can learn from each other

#### The report by Business Council of Australia (August 2023)



- Our abundant critical minerals and rare earths will help drive decarbonisation across the planet. Our businesses are innovative and world leading, and our institutions are stable and respected. We are home to a rich array of talented and educated people.
- **Yet we are languishing when it comes to productivity and global competitiveness.**

So far, I have not mentioned about Australia explicitly. Recently, I read the report by the Business Council of Australia titled “Seize the moment.” The report said, “We are home to a rich array of talented and educated people. Yet we are languishing when it comes to productivity and global competitiveness.” For me, this report seems to be too critical about the current situation in Australia in terms of productivity. But my second thought is what I said today about Japanese productivity might be too critical viewed from the Australian participants in this room.

The grass may be always greener on the other side. For me, Australia has many enviable strengths. For example, you have favorable demographics including your ability to receive talented people, which could be a very source of innovation. In terms of economic policy, I envy Australia of having the Productivity Commission as an agency of the Australian Government. Japan does not have a counterpart institution in the government. In any event, since each country is different with its own heritage and social contract, it has to think of how it can raise productivity and for that matter, what kind of society we want to have. In this respect, I believe both Japanese and Australian participants will be able to learn many things in this conference.

Thank you for your kind attention.

[End]