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Bank of Japan

Demographic Changes and Challenges for Financial Sector

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Introduction

It is a great honor for me to have the opportunity once again to give a speech at the Paris Europlace Financial Forum.

Among the many occasions I was invited to this Forum in the past, I talked about financial innovation in the last two years. This year, I would like to talk about another long-term issue faced by many advanced economies; namely, demographic changes.

Among advanced economies, France has led the way in tackling the issues brought about by declining population. The total fertility rate has been gradually increasing; however, it continues to face the challenges of an aging population. Meanwhile, Japan faces the headwinds of both a declining and an aging population, with a total fertility rate far below two.[1] Today, I would like to talk about how such demographic changes are affecting the financial sector.

I. Demographic Changes, Economic Growth, and Interest Rates

First, let us consider the impact of a declining and aging population on economic growth. If the population is declining and aging at the same time, the working-age population decreases. Since a reduction in the working-age population means a decrease in labor input, this leads to a slowdown in economic growth. Even when the total population is increasing, a decrease in the proportion of the working-age population will reduce the growth rate of GDP per capita.

Of course, it is possible to mitigate the headwinds of a declining and aging population by using machines as a substitute for human labor or by promoting innovation. In fact, recent labor shortages in Japan have boosted investment, such as in the automation of production lines and streamlining of operations with the introduction of new information technology.

Next, let us consider the impact of a declining and aging population on interest rates. To do so, we need to examine the balance between savings and investment. A declining and aging population would have both positive and negative effects on savings. The negative effect on

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[1] Japan's total fertility rate in 2016 was 1.44, far below the equilibrium level of about 2.1, under which the population neither increases nor decreases. Meanwhile, France's total fertility rate in 2016 was 1.9.

savings is an increase in the number of elderly people. This is because many of them live on running down the assets they had accumulated before retirement, and therefore an increase in their population reduces total national savings and pushes interest rates up. On the other hand, if population aging is accompanied by an increase in longevity, this will positively affect savings. Since World War II, longevity has been increasing in developed countries through advances in medical technology, and we are now likely to live longer than our parents and grandparents. Therefore, even if the proportion of elderly people increases, they may spend less than before or work longer to earn income, both of which will contribute to pushing interest rates down by reducing spending or by increasing savings.

How about the impact on investment? A declining and aging population can again either increase or decrease investment, although this also depends on the prospects for the economy and technological progress. A decrease in working-age population and thus in labor input raises the level of capital stock per labor input, and makes capital input relatively abundant.[2] This reduces the need for additional investment. Investment is also reduced when firms expect that the population, and therefore the future demand for production, will decline. These are the factors that push interest rates down. Meanwhile, when technological progress or labor-saving investment is prompted to compensate for decreased labor input, this pushes interest rates upward.

In this way, a declining and aging population can either push up or push down interest rates. Recent studies suggest that the equilibrium real interest rate in the medium to long run is on a decreasing trend in advanced economies, and a declining and aging population has contributed to this trend to some extent.[3] Based on the discussion so far, we can assume that a declining and aging population is likely to increase savings, or decrease investment, or both, at least for the time being.

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[2] The situation where the level of capital stock per labor input increases is referred to as "capital deepening."

[3] Sudo and Takizuka (2018) suggest that about 270 out of the 640 basis points decline in real interest rates over the past 50 years in Japan can be attributed to demographic changes.
Sudo, N. and Y. Takizuka "Population Aging and the Real Interest Rate in the Last and Next 50 Years," Bank of Japan Working Paper Series 18-E-1, 2018.

II. Impact on Banking Business

Since inflation expectations in advanced economies have moved around a small positive value with some variations across countries, a decreasing trend in the equilibrium real interest rate is translated into a decreasing trend in nominal interest rates. Let me now turn to how the demographic changes accompanied by a decreasing trend in nominal interest rates has affected the financial sector. First, I will consider the impact on banking business.

In a situation where nominal interest rates on lending are on a decreasing trend, but deposit rates cannot fall below zero, banks' profits are squeezed through a reduction in net interest income. Moreover, if the trend in credit demand weakens due to a declining population and associated weak growth, this puts additional downward pressure on banks' profits in terms of loan volume. In particular, in regions where there is significant decline in population, there will be large downward pressure on credit demand reflecting the rapid decrease in the number of firms and households. If banks' competition intensifies on the back of shrinking demand for credit, this will put further downward pressure on their profits, leading to a reduction in net interest income.

Of course, demand for financial services is not necessarily reduced by a decline in population and the number of firms. For example, households are in need of more financial services related to asset management and inheritance on the back of aging and longevity. As the number of elderly households increase, there is greater need for financial services tailored to individual situations such as working conditions, family circumstances, health statuses, and asset holdings. Firms facing a declining population need new business opportunities, technological developments, expanding service territory, and increasing overseas sales. To enable these developments, demands will increase for such financial services as consulting and support for mergers and acquisitions. In addition, the digitalization of financial services has the potential to expand the frontiers of banking business in many ways.

On the other hand, if banks are no longer able to keep up with technological innovations and the changing demands of households and firms, a declining population could lead to a reduction in banks' profit opportunities. Banking business requires large fixed costs for the maintenance of branch networks and information technology systems. Therefore, if profit opportunities shrink as the population declines, the over-head ratio (OHR) increases and cost reduction and further consolidation may become necessary to survive.

In any case, adaptation to the new environment will proceed gradually across the financial industry as a whole, since population decline and the aging of society occurs over a period of twenty to thirty years. We need to evaluate the impact of demographic changes on the financial system from a variety of perspectives, such as the provision of new financial services, utilization of technological innovation, and progress in consolidation.

Regarding financial stability, possible changes in the risk appetite and risk profile of banks, amid a persistent low interest rate environment, is an issue that we central banks are highly attentive to. In the long term, even under a low interest rate environment, securing banks' profitability will depend on whether banks can provide new financial services and expand sources of profits, how technological progress affects the financial industry, and how consolidation of the industry proceeds, including cooperation with non-banking financial or non-financial sectors.

In the short term, as downward pressure on banks' profits continues, we need to be mindful of the possible consequences of banks' engagement in excessive risk taking. Generally speaking, risk taking by banks that have abundant capital bases provides financial support to firms' production activities, thereby contributing to economic expansion. Nevertheless, if appropriate risk management measures are not taken and the continued decline in profits leads to insufficient capital bases, credit costs could rise sharply, and the stability of the financial system could be threatened in the event of a large exogenous shock that leads to an economic downturn.

The Bank of Japan publishes the *Financial System Report* semiannually, in which it assesses the stability of financial system and makes various analyses from a macroprudential perspective. In the latest *Report* published in October, the Bank assessed that Japan's financial system has been maintaining stability on the whole, as financial institutions generally have strong resilience, in terms of both capital and liquidity, during potential tail events such as the Lehman shock. However, regional banks' core profitability has continued to decrease amid both the prolonged low interest rate environment and the persistent decline in the population and the number of firms, and their capital adequacy ratios have also gradually decreased. We should be mindful of the possible consequences, including any downward pressure on the real economy from the financial system, since financial institutions tend to become more cautious in their risk taking if their capital adequacy ratios fall substantially or they continue to register net losses in the event of stress.

III. Impact on the Non-Banking Sector

Next, let me turn to the non-banking financial sector. Although the activities of the non-banking sector and the associated risks vary across countries and industries, such sector tends to play greater role in financial intermediation in many advanced economies. This comes against the backdrop of a tightening of regulations on the banking sector, a prolonged low interest rate environment, and diversified demand for financial services. For example, in some countries, demand for health and long-term care insurance is expected to increase significantly as the population ages.

As the activity of the non-banking sector expands, the risks they carry may also change. We should be particularly mindful of the risks in this sector, posed by the decreasing trend of interest rates amid a declining and aging population. If a low interest rate environment persists, investors tend to become more active in searching for higher yields on assets. This leads non-banking investors to make riskier loans and invest in riskier financial products. If such behavior becomes widespread, they could lead to threatening the stability of the financial system.

Amid the increase in demand for insurance and pension products, financial intermediation by asset management companies has expanded in recent years. This basically diversifies the channels of financial intermediation and facilitates efficient allocation of funds. However, it could also lead to complex changes in the risk propagation process under a stressed financial environment and in responses to emergency situations. For instance, asset management companies tend to adopt similar investment strategies. Therefore, their investments may carry the risk of fire sales that could cause asset prices to collapse to levels far below their fundamentals when a negative shock occurs. For the same reason, there is also the risk of drying up of liquidity in the markets.

As a result of the financial regulation reforms after the Lehman shock, the banking sector has indeed become more resilient in terms of both capital and liquidity. Nevertheless, there are several issues that still need to be addressed in order to make the global financial system, including the non-banking sector, more resilient.

IV. Households' Needs for Financial Services

In a low interest rate environment, households also tend to become more active in searching for higher yields on assets, and their engagement in risk taking may affect the financial system in multifaceted ways through diversified financial services. Compared with other countries, households in Japan have a strong tendency to favor safe assets, and even in a prolonged low interest rate environment, a large proportion of household financial assets continue to be deposits. In Japan, however, the elderly hold more stocks than younger people.[4] Also, some people seem to begin investing in stocks after retirement. Attention needs to be paid to possible changes in household asset allocation as aging continues.

Another important issue in providing financial services to the elderly is the issue of physical weakening and cognitive decline. In general, the elderly are prone to become more vulnerable to financial fraud, and the number of elderly people having difficulty in accessing financial services and making financial decisions is on an increasing trend. All financial institutions, whether in the banking or non-banking sector, as well as the authorities, are facing this challenge and trying to address it.

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[4] Fujiki et al. (2012) suggest that elderly households in Japan tend to have more stocks than younger households mainly because elderly households have on average more financial assets, while the effects of age per se play a relatively minor role.
Fujiki, H., N. Hirakata, and E. Shioji "Aging and Household Stockholdings: Evidence from Japanese Household Survey Data," IMES Discussion Paper No. 2012-E-17, Institute for Monetary and Economic Studies, Bank of Japan, 2012.

Concluding Remarks

I have talked about the impact of a declining and aging population on the financial sector today. The wave of population aging is already sweeping through many advanced and some emerging market economies. Even in other emerging and developing economies with an increasing young working-age population, they will likely be faced with the problem of aging in the future. It will be increasingly important for financial authorities and financial institutions in many countries to share their knowledge and cooperate in tackling these challenges.

Let's take an example of the search-for-yield behaviors mentioned earlier. In countries with low interest rates amid population aging, financial institutions increase loans to and securities investment in emerging economies that offer relatively higher yields. While these kinds of capital flows could mitigate the negative impact of population aging, they may carry new risks to global financial stability. To address these risks, stepping up dialogues among the financial authorities of the countries concerned will be of great benefit.

Concerning the financial sector, financial services and business models need to accommodate various changes, including declining and aging population. At the same time, subsequent changes in the risk profiles of financial institutions also need to be considered. The Bank of Japan, while keeping up with these changes, will contribute to ensuring the soundness of financial institutions so that better financial services are provided to firms and households in a stable manner, in cooperation with the various authorities and parties concerned making use of opportunities such as international meetings.

Thank you for your attention.