KENSHO INVESTMENT GROUP

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KCM CEO Insight: Japan's Future at a Crossroads: Demographic Decline, Energy Transition, and the Global Hydrogen Race

The number of children born in Japan in 2024 (including foreign births) declined 5.0% from the previous year to 729,988, a record low for the ninth consecutive year, and the number of births to Japanese alone is expected to fall below 700,000.

The number of births is the lowest since 1899, down roughly 30% from 1,003,000 in 2014.

The National Institute of Population and Social Security Research (NIPSSR) released in April 2023 a population projection of 779,000 births in 2024 based on the "medium projection," which is considered the most feasible, and 690,000 based on the "low projection," which is the most severe estimate. The result is close to the low estimate, and the declining birthrate will not be halted.

Meanwhile, the number of deaths increased by 1.8% to 1,618,684. This means that Japan's overall population decreased by 897,696.

In my opinion, the declining birthrate and aging population are the biggest problems for Japan. There are no examples of other countries that can serve as a reference, and although it is a problem that must be tackled 20 to 30 years into the future, many people do not feel a sense of reality when people talk about 2040 or 2050. However, the fact is that it has already been determined that unless immigrants come in, the population of 18-year-olds in 2042 will be less than 729,988.
There are approximately 800 universities in Japan. There are 185 public universities, and the rest are private universities, but the number of seats available is greater than the population of 18-year-olds in 2043. Unless universities start accepting more international students from now on, a number of universities will fall short of their capacity.

As the birthrate declines and the population ages, the percentage of the elderly aged 65 and over in the total population is rising. By 2040, when the junior baby boomers will be 65 and older, the aging rate is expected to reach 34.8%.

According to Mitsubishi Research Institute, the cost of social security benefits, including medical care, long-term care, and pensions, will amount to 169 trillion yen in FY2040, a 28% increase from FY2020. Among these, medical benefits, which are financed by premiums paid by the working-age population and public funds, are expected to increase by 48% to 63 trillion yen, while long-term care benefits are expected to increase by 71% to 19.5 trillion yen.

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Likely, increases in income and consumption taxes and social insurance premiums are inevitable. Even so, future pension benefits will be reduced.

One often hears talk about the need to improve productivity and devise ways to produce more results with fewer people to sustain Japan's economic growth, but it is frightening to hear the term “second career” used by those who have experienced retirement from their positions in the seniority-based, lifetime employment system. Japan's hourly labor productivity ranks a dismal 29th out of 38 OECD member countries, and it will not be an easy task to boost it. Unless the mentality of the Japanese people changes, there is no hope of improving productivity in Japan.

Surprisingly, domestic demand accounts for a very high percentage of Japan's GDP, about 85% of GDP. Japan is a domestic demand-dependent economy, with an export dependency of about 15%. Unless the declining birthrate and aging population are halted, it is clear that domestic demand will not grow, and that Japan will have to expand and invest in growing countries and regions overseas.

Consider Japan's future growth model.

Japan is working toward the realization of Society 5.0 by promoting the use of digital technology to improve overall industry efficiency and create new value. In the AI field, which is the focus of everyone's attention, the U.S. and China are leading the way. In 2024, venture capital funding in the U.S. grew in a way that was led by the AI industry. It will be difficult for Japan to compete, but if anyone is going to redirect investment to this growing field, it will be the US.

In addition, the company is promoting “Green Transformation (GX),” the introduction of renewable energy and the improvement of energy efficiency, to realize a decarbonized society. Europe is the front runner in this field.

President Trump has signed an executive order that includes withdrawing again from the Paris Agreement, the international framework to combat global warming, and in his inaugural address, he stated that he would declare a national energy emergency.
While many are concerned about this move, President Trump aims to reduce energy prices and curb inflation by increasing production of fossil fuels such as oil and natural gas. While this runs counter to the decarbonization movement, it will likely lead to a significant increase in the production of blue hydrogen in the U.S., which uses fossil fuels. The problem with blue hydrogen is that CO2 is produced during the production process, but efforts to capture and store CO2 using carbon capture and storage (CCS) technology will also expand. Thus, increased production of fossil fuels such as oil and natural gas will not stop the global energy transition.

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Germany is focusing on green hydrogen. Green hydrogen refers to hydrogen that is produced using renewable energy sources (e.g., solar and wind power). This process emits no carbon dioxide (CO2), making it a very environmentally friendly energy source. Germany aims to realize a sustainable energy supply through the development of hydrogen infrastructure both domestically and internationally. Particular emphasis is being placed on the development of hydrogen pipelines, and the National Hydrogen Strategy, revised in 2023, sets a goal of doubling domestic hydrogen production capacity by 2030.

Specifically, it plans to build a network of hydrogen pipelines totaling more than 1,800 km in Germany and to convert existing natural gas pipelines to hydrogen transportation. In addition, a network of 4,500 km hydrogen pipelines is planned to be constructed throughout Europe.

Furthermore, Germany is also working with neighboring countries such as Norway and Denmark to build an international hydrogen pipeline. Furthermore, it is also developing hydrogen import terminals and constructing hydrogen import terminals along the German coast to enhance hydrogen transportation by ship.

At first glance, the U.S. and Germany seem to have opposite energy policies, but regarding hydrogen, for which demand is growing, the U.S. is providing large-scale support for hydrogen production through the Inflation Reduction Act and the Bipartisan Infrastructure Act, while the EU is promoting hydrogen production and utilization through the European Hydrogen Bank and other programs. Germany is promoting hydrogen production and imports through its “H2 Global” program.

Japan's Basic Strategy for Hydrogen, revised in June 2023, sets a target to increase hydrogen supply to 12 million tons by 2040. In addition, to promote the spread of hydrogen, the Law for the Promotion of a Hydrogen Society, which aims to reduce supply costs and increase demand, was enacted in May 2024 and is being prepared for implementation. Japan is also emphasizing international collaboration to realize a hydrogen society, which is an important pillar for achieving carbon neutrality by 2050. Japan is promoting technological development and infrastructure improvement to enhance the international competitiveness of the hydrogen industry and is aiming for a stable and inexpensive supply of hydrogen by utilizing diverse resources from both Japan and abroad.

Again, the energy transition has not stopped and will continue to move steadily forward. European policymakers and industry leaders believe that affordable electricity will only be possible with a massive expansion of renewable energy, along with sufficient storage capacity and grids.

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In addition, through regional development, Japan aims to promote economic activities that take advantage of the unique characteristics of each region, narrow economic disparities between regions, and achieve nationwide economic growth. Can this really be done when it is expected to be difficult to even develop infrastructure such as water pipes and sewage pipes?

Furthermore, to cope with the declining birthrate and aging population, it is necessary to develop an all-generation social security system, cope with the decline in the working population, and realize a sustainable society, but no concrete measures are in sight.

The aging of society with declining birthrates, accompanied by a shrinking population, is a major challenge that no other country has experienced in the past. To restore the international competitiveness of Japanese companies, it is essential for them to expand into overseas markets where future growth is expected and to increase exports. It will be difficult for Japan to achieve sustainable economic growth other than by promoting innovation at home and abroad and pursuing global economic growth..

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