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Tackling Japan's dual crisis

How policies, culture and values can help stabilise the fertility rate and enable economic development

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About this report

A 2018 report by the Economist Intelligence Unit "*Fertile Ground: How can Japan raise its fertility rate?*" drew readers' attention to Japan's ongoing low fertility rate, the current policy environment, and further actions the government could take to make raising a family in the country more attractive. This report, sponsored by Merck, is an update to the previous report which assesses and quantifies the economic benefits of improving fertility rates, and the policies that could support in achieving this.

Economist Impact has carried out a literature review on the socio-economic implications of low fertility rates across the globe, and the policies that have been used to address this, combined with an economic modeling exercise to understand the specific implications in the context of Japan. Interviews have also been conducted with local and international experts. A more detailed description of our methodology is provided in the appendix.

We would like to thank the following experts who gave their time and help.

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Birth rates are still falling

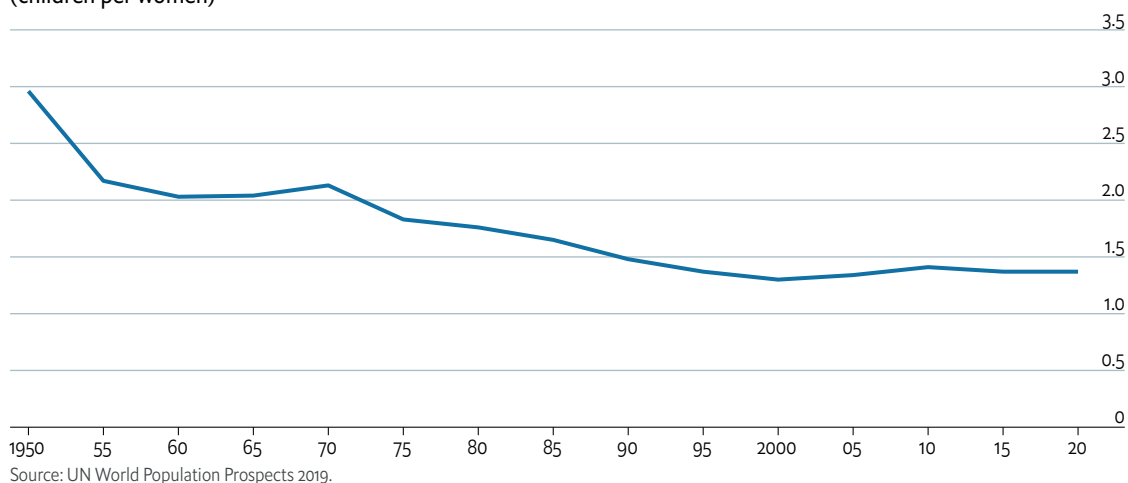
As the world prepares for the post-pandemic future, many countries are grappling with the likelihood of a global decline in birth rates. While the most recent analyses suggest that developed economies are likely to be especially hard hit¹, few countries are likely to be as vulnerable as Japan.

A 2018 Economist Intelligence Unit report² documented the variety of challenges facing Japan, which had seen its total fertility rate* (TFR) fall to 1.46 by 2015, well below the replacement rate of 2.1. Since that time, the TFR has continued to decline, dropping to 1.36 in 2019,³ according to figures from Japan's Ministry of Health Labour and Welfare, and to 1.34 in 2020.⁴

Japan already has the world's oldest population. A further fall in the number of births will put yet more pressure on society. The number of working adults supporting the ageing population will shrink, and the economy will face further challenges. A report in August 2020 by the Science Council of Japan notes that, in addition to shrinking the domestic economy, the decline in the country's population as a result of falling birth rates could lead to "the expansion of disparities and the emergence of a trap for the declining birth rate and aging population."⁵

Policymakers are already grappling with the higher old age dependency ratio.[†] In December,

Figure 1: Trends in Japan's total fertility rate (TFR), 1950-2020
(children per women)



* Total fertility rate (TFR) represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.

† The old age dependency ratio is the ratio of the population 65 years or over to the population aged 15-64, presented as the number of dependents per 100 persons of working age (15-64).



the government said it would lower the income threshold for older Japanese citizens to pay a higher share of their healthcare costs, in order to reduce the burden on the working age generation. The share of out-of-pocket medical expenses for those 75 and older is predicted to rise from 10% to 20%, for those with an annual income of 2 million yen or more. The change is set to be introduced in October 2022.⁶

Our previous report outlined a number of steps that Japan could take to increase fertility rates, some of which the government was already implementing to some degree. These included better maternity and paternity leave, more nursery and childcare places, economic support and subsidies for young families, and financial help with fertility treatment. Most of these options have been tried by other countries facing declines in birth rates. In Japan, many experts interviewed for this report say the financial commitment underlying these measures needs to be far more ambitious. Also that policymakers need to take a more holistic view of the type of

environment that will encourage young Japanese to take on the responsibility of parenthood.

In addition, a number of our interviewees suggested that policymakers must have in mind a “plan B”, which envisions a smaller population for Japan. Our analysis shows that this is a very realistic possibility. Achieving any fertility rate below a highly ambitious 2.25 children per woman will result in a population that is smaller in size by 2100 than it is today.

The report is based on a literature review, expert interviews, and bespoke economic analysis. We begin by estimating the potential economic gains from increasing the fertility rate in Japan under alternate scenarios. The next chapter then looks at the latest proposals from the new Japanese government. We then explore two overarching themes that relate to all policy endeavours: 1) the seriousness of implementation and 2) the wider cultural context. We finally conclude by discussing the way forward for Japan.

Modelling fertility scenarios and their economic consequences

The relationship between economic growth and fertility runs in both directions. A booming economy may encourage couples to have more children, as they find themselves able to support them financially. Alternatively, as the economy develops, and consequently income levels rise and the rate of child survival increases, parents may choose to have fewer children so that they can invest more in each child. In this case, higher economic development leads to lower fertility rates.

Lower fertility rates—such as those seen in Japan—will also impact the economy. Some of the negative economic consequences of shrinking populations are obvious: fewer people make less stuff, so a declining population means slower economic growth or even a fall in output.

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Fewer people also consume less, which further drives down output. But there could also be economic benefits to declining fertility rates. It is argued that reducing population growth can bring environmental benefits, leading to higher levels of capital per person and improved standards of living. Unchecked population growth, on the other hand, will increase demand for energy, transport and other consumer goods resulting in environmental degradation, increased pollution, loss of biodiversity, and resource constraints.⁷

However, the arguments against population growth typically hold true only when the economy and environment is unable to adapt rapidly enough to meet the rate of growth in the population. While it is possible that rapid population growth can lead to a destruction of individual wealth—as the so-called economic pie is shared amongst a growing number of people—at some point declining population growth can reduce the size of the pie itself, potentially leading to even more significant impacts on individual wealth. At low levels of fertility, as is the case in Japan and much of the developed world, the negative impact on economic growth can be significant.

The economic challenges of declining fertility

Low and declining fertility rates pose a number of economic challenges for countries to grapple with.

- **Vanishing labour.** With declining fertility rates, the size of the working population falls over time. This leads to labour shortages in countries where the working-age population is in decline, as already evident in major economies such as Japan and Germany. This slows growth in many key industries and reduces a country's economic competitiveness.⁸
- **Fewer consumers.** Lower birth rates and a falling working-age population also mean that there are fewer consumers. This reduces the opportunities to generate growth in the domestic market, leaving countries with low birth rates more exposed to external shocks.
- **Ageing populations.** Falling birth rates, coupled with rising life expectancy, also mean that the average age of a country's population rises. Unless older segments of the population are allowed and able to be economically productive, they create a burden on the economy, and in particular on the working-age population through growing tax liabilities. With a shrinking working-age population, these burdens become unsustainable which poses a key threat to many leading economies today. Today, there is an estimated global population of 700 million older people over the age of 65—the IMF estimates that this figure will more than double to over 1.7 billion over the next 30–40 years, equivalent to almost 20% of the total global population. In Japan, the 65+ age cohort already accounts for 28% of the population.⁹

Ultimately, these challenges with lower birth rates will be reflected in more constrained economic growth and lower standards of living. Researchers at Stanford University argue that living standards would stagnate with declining fertility rates, noting that economic growth ultimately comes from new ideas, and the discovery of new ideas depends on the number of people researching them. At the global level, as the size of the population declines and fewer people are devoted to research, economic growth would ultimately slow down.¹⁰ At the national level, low birth rates can also lead to what is known as a “low fertility trap”—the idea that low fertility in one generation perpetuates to the next generation, leading to a downward spiral in population size, economic growth and living standards.¹¹



The economic potential of a more fertile Japan

We have developed a model to assess the implications of different fertility rate scenarios in Japan. In constructing the model, we have assessed demographic changes from increases in the fertility rate, including changes in the size of the working age population. The model is based on the assumption that output per person is key to living standards, and that a declining population will have a stark impact on the economy by decreasing output at a faster rate than the decline in population. As a result, declining fertility rates can put intense downward pressures on the potential for economic growth.

The scenario analysis on which the model is built assesses the impacts of a change in the TFR on the demographic structure of Japan and the resulting economic consequences. The analysis considers a baseline scenario, and compares the demographic and economic profile of Japan in this baseline against three alternative TFR scenarios:

- **Baseline scenario:** Assumes that the fertility rate in Japan will grow at a steady rate from 1.3 today to 1.6 by the end of the century (based on UN projections)
- **Low scenario:** Assumes a TFR of 1.6 is achieved and maintained to 2100 (in line with UN projections for Japan but assuming that a TFR of 1.6 is achieved today instead of gradually over the next 80 years)
- **Medium scenario:** Assumes a TFR of 1.8 is achieved and maintained to 2100 (in line with the targets of the Japanese government)
- **High scenario:** Assumes a TFR of 2.1 is achieved and maintained to 2100 (in line with UN assumptions on replacement rate TFR required to maintain population size across generations)¹²

Please refer to the Appendix for a more complete discussion of the methodology.



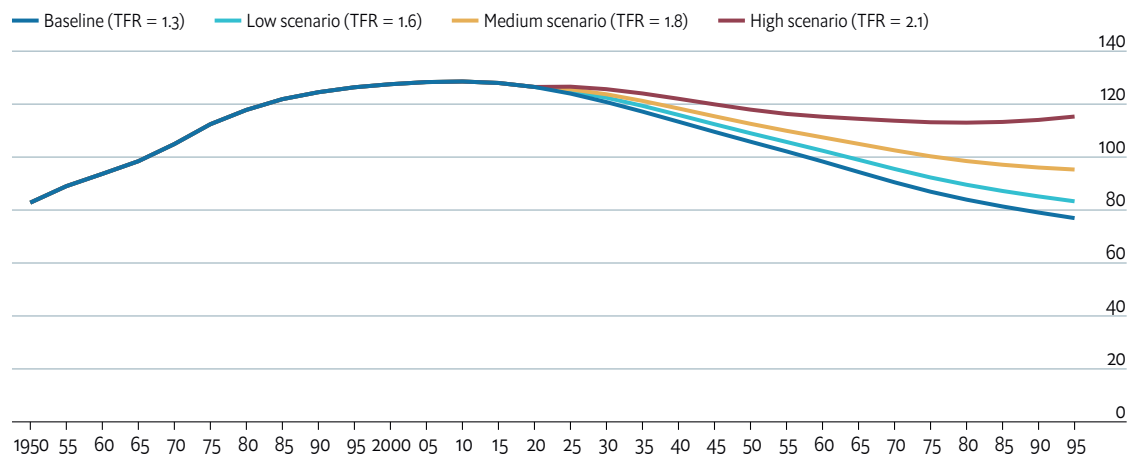
In the baseline case, although fertility rates increase relative to fertility rates today, the increase is insufficient to reverse the population decline. As a result, the size of the Japanese population is estimated to decrease by 40% by the end of the century, from 126 million people today to less than 77 million. Through a concerted effort to increase fertility rates, Figure 2 shows that the total population of Japan could be higher by anywhere between 6.4 million (low scenario) and 38.4 million (high scenario) by the end of the century, compared to the baseline population projections. At the Japanese government's current target to achieve a TFR of 1.8 (medium scenario), the population could be 18.3 million higher by 2100 than it would be if current trends persist.

However, even under the most ambitious scenario of achieving a TFR of 2.1, the population is still expected to be at least 10% smaller in size than it is today. In fact, the EIU estimates that only by achieving a TFR of over 2.25 can the population size be maintained at today's levels. Even higher fertility rates would be needed to reverse the declining population trends. Hence, a shrinking population is expected in Japan regardless

of measures to increase the fertility rates. Nevertheless, increasing fertility rates could minimise the magnitude of population decline from a reduction in the population size by 50 million between now and the end of the century by doing nothing, to a reduction of only 11 million.

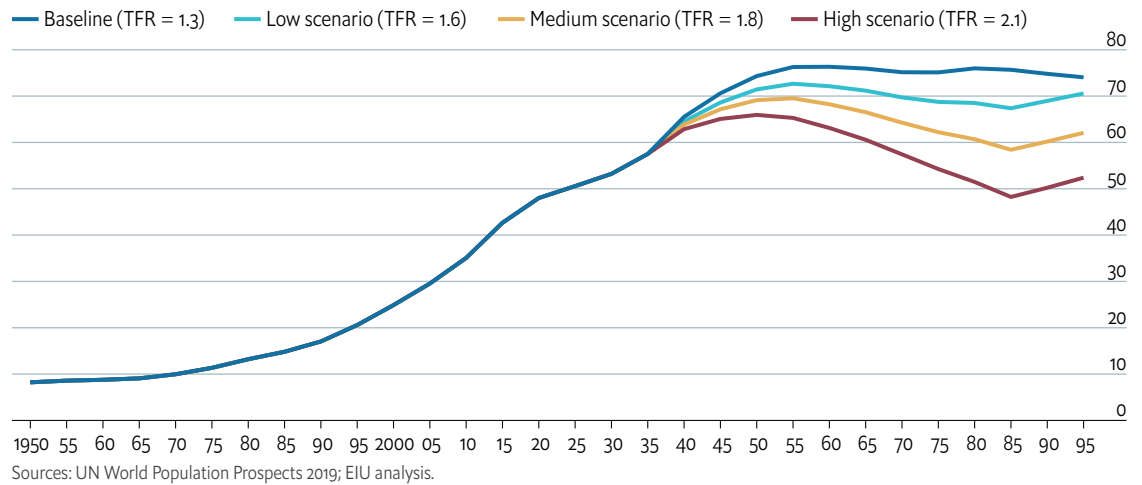
One of the primary outcomes of a declining birth rate is a rising old-age dependency ratio. Figure 3 shows the steep growth in Japan's old-age dependency ratio over time in the baseline scenario, placing increased pressure on the working age population to bear the burden of supporting an ageing population through, for example, higher tax payments to support pensions. With no change in fertility trends, the number of elderly citizens reliant on the working age population could increase from 48 in 100 to 74 in 100 over the next 80 years. Kohei Komamura, a professor at the Faculty of Economics at Keio University, points out that failure to increase the TFR would therefore have a negative impact on the country's pension system, underlining the interdependence of the oldest and youngest generations in Japan.

Figure 2: Japan population projections under alternative scenarios of the TFR (millions)



Sources: UN World Population Prospects 2019; EIU analysis.

Figure 3: Japan old-age dependency ratio
(ratio of population aged 65+ per 100 population 15-64)

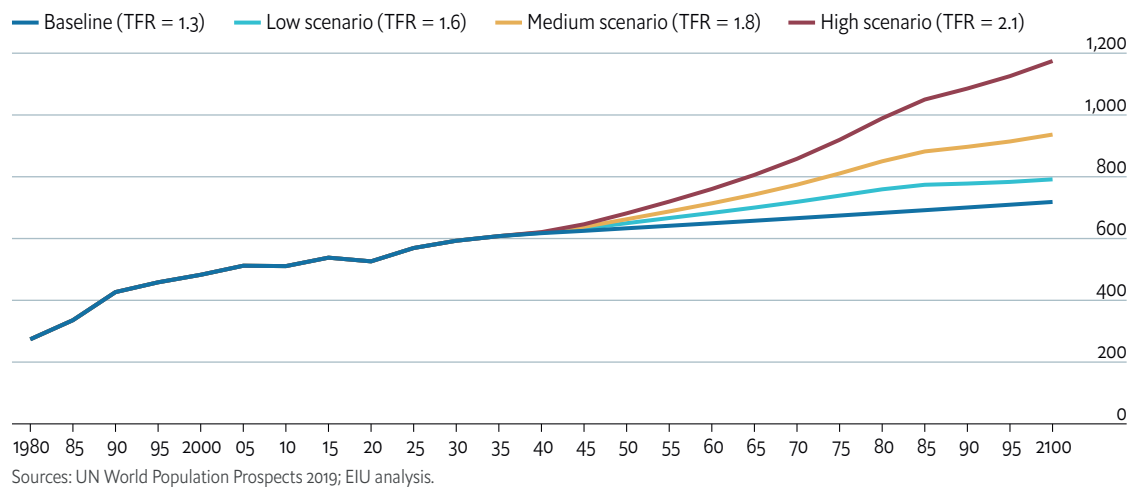


If Japan can raise its TFR, the situation becomes more manageable. At a replacement rate TFR of 2.1, the number of elderly for every 100 working-aged individuals could reduce from 74 to 52 by 2100. However, that would still be moderately higher than the 48 that it is today. The results indicate that even a highly ambitious increase in fertility rates in Japan would still result in an increase in the number of

dependents relative to the working age, although the extent of the increase will depend on how fertility rates in the country evolve over time.

The demographic changes resulting from the baseline projections for fertility in Japan will impact the economy. In the baseline, we estimate that GDP in the country will grow at a rate of 0.4% on average each year to the end of the century.

Figure 4: Japan GDP projections under alternative scenarios of the TFR
(trillions Yen)



However, more ambitious changes in the TFR would expand the working age cohort who support the economy through both their labour supply and consumption, helping to grow the economy at a higher rate than might otherwise be the case. With a TFR of between 1.6 and 2.1, our model shows that GDP could be higher by between ¥73 trillion and ¥456 trillion by 2100, or 10% to 63% higher than the baseline (See Figure 4). This could increase the average annual growth rate in GDP for Japan from 0.4% to up to 1%.

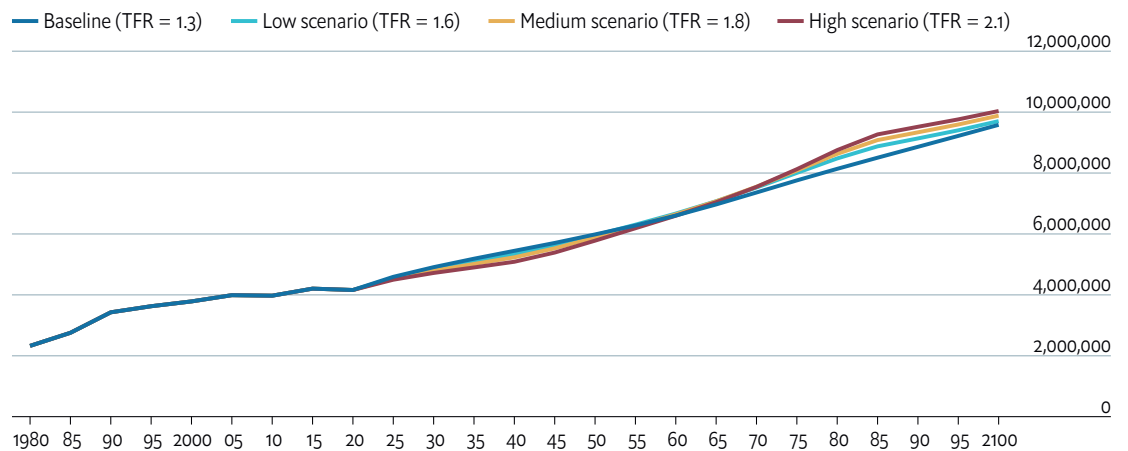
On a per capita basis, GDP is expected to grow from ¥4.2 million today to ¥9.6 million by 2100 in the baseline scenario—this represents substantial growth at an average annual rate of 1% compared to total GDP growth of only 0.4%.

With the higher TFR described in our scenarios, GDP per capita could be higher by between ¥120,000 and ¥450,000 by 2100. While total GDP could be over 60% higher by the end of the

century by achieving a TFR of 2.1 compared to the baseline, GDP per capita is only expected to be roughly 5% higher. This is driven by the fact that while total GDP is larger under a scenario with a higher TFR, this GDP is also distributed across a bigger population as the TFR increases.

Our analysis shows that even with our most optimistic scenario, the size of the population will have declined by the end of the century. However, even if population trends are not reversed in the short-to-medium term, any measure to increase the fertility rate can bring economic benefits, particularly to total GDP, with some moderate gains to individual-level income. Although the demographic challenge will persist, there is still, therefore, a strong case to be made for more family-friendly policies to raise the fertility rate and reap the economic gains from doing so. Combined with additional measures to raise the productivity of a smaller population these gains could be even more significant.

Figure 5: Japan GDP per capita projections under alternative scenarios of the TFR
(Yen)



Sources: UN World Population Prospects 2019; EIU analysis.

The 2020 fertility policy reboot

Japan's falling birth rate has continued to preoccupy successive governments. In the last year alone, the government has outlined a number of steps toward confronting the problem. In May 2020, the cabinet of then Prime Minister Shinzo Abe approved the latest iteration of the Outline of Measures for Society with Decreasing Birthrate, which commits cabinet to reconvene once every five years to review progress.

Towards the end of 2020, the new government of Prime Minister Yoshihide Suga further outlined a number of "pillars" to support its fertility policy. These included measures to alleviate the shortage of nursery places, promotion of paternity leave for men and the provision of more state support for fertility treatment. The Suga government has also considered potential changes to the tax system, but this has received less attention.

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Pillar 1: Shortage of nursery places in focus

The number of children on the waiting list for nurseries has hovered at around the 20,000 mark for over ten years.¹³ Since 2018, there have been discussions about providing free nursery places, according to Mr. Komamura. Under the government's childcare relief plan, nursery capacity would be increased between 2021 and 2024 to prepare for an additional 140,000 places, with the aim of increasing the employment rate of women in the 25-44 year-old age group to 82% in 2025, from just under 78% in 2018.

Yet, in the absence of sufficient investment in building new capacity, and improving working conditions and training for nursery workers, it has been suggested that the plan is unlikely to be impactful. The government acknowledges that the success of this measure will require increasing the appeal of working in nurseries and the recruitment of nursery teachers, as well as making use of a variety of childcare resources, including babysitters and kindergarten. Also clear is the fact that there are regional variations in the shortage of places, with nearly two-thirds of waitlisted children living in urban areas.

Pillar 2: Making parental leave more appealing

Under the current leave system in Japan, women are eligible for maternity leave during the first year of their baby's life, or until their child is 18 months old. Employers are also prohibited from requiring employees with children to do more than 24 hours in overtime per month. Since 2010, with the introduction of the Papa Mama Maternity Leave Plus System, parents have been permitted to split parental leave between them, up to one year and two months. Employees are also able to take advantage of a system to reduce their normal working hours to six per day if they have children aged three or under, although there is no additional payment to make up for the reduced hours.¹⁴

The rate of women taking maternity leave has remained relatively steady over the past decade, with 83% of women taking maternity leave in 2019. Men, however, remain far less likely to take advantage of paternity leave benefits, with just 7.5% doing so in 2019, up from 6.2% in 2018.

A recent decision to tighten eligibility for the state child subsidy appears to be motivated by an acknowledgment of the economic pressure the government is facing. An amendment introduced on 2 February 2021 aims to decrease the child subsidy to some higher-income households after October 2022, with payments tapering off completely for those with household incomes above 12 million yen. The government proposes to use the money saved to support pillar 1, the alleviation of nursery waiting lists, with plans to hire an additional 140,000 employees for nurseries before the end of 2024.¹⁵

Pillar 3: Higher funding for fertility treatment

The Government has also focused on the expansion of infertility treatment, with an emphasis on extending regional subsidies for infertility treatment. This is declared to be a stop-gap measure as the government works towards introducing reimbursement under the National Health Insurance plan.¹⁶ The government has extended support for couples undergoing infertility treatment until health insurance coverage is increased, which is expected in April 2022. Under the terms of the Ministry of Health, Labour and Welfare's proposal, subsidies for the first use of assisted treatment will remain at ¥300,000, but subsidies for second rounds of treatment are to rise to ¥300,000 from the current ¥150,000.*

In addition, in December 2020, leaders of a parliamentary group within the Liberal Democratic Party recommended that the subsidies for infertility treatment be increased to ¥400,000 for the first three rounds of treatment.

Regional governments have introduced their own measures, including reviews of existing child subsidies and incentives to promote marriage via municipal subsidies. However, implementation is variable.

* As reported by NHK (Japan Broadcasting Corporation), available at: www.mhlw.go.jp/stf/seisakunitsuite/bunya/0000047270.html

Encouraging families: public policy, culture, and values

It is clear that if Japan can increase its fertility rate, it will bring significant economic benefits. The question remains, however: are the policies in place sufficient? We have previously described how the measures used by Japan and other countries struggling with low birth rates have some impact, but none appears to represent a “magic bullet”.

Two overarching factors influence the effectiveness of policy. First, the degree of implementation. Several interviewees noted that, although Japan has unveiled a series of policies and subsidies—including child grants, nursery places and parental leave—the financial investment involved has been insufficient. This is especially so in comparison with some western European countries, where family benefits are

more generously funded. Second, there has been a failure to take a suitably holistic view of the environment for raising children in Japan. These include acknowledging the cultural factors and traditional view of gender roles that might be undermining pro-family policies. “The biggest bottleneck is the values—the values of the Japanese people,” remarks Mr Yamashige, a professor at the Graduate School of Economics at Hitotsubashi University.

Japan, says Dr. Yoshimura, “has a culture where diversity is not really accepted,” whether it refers to children born out of wedlock, work-life balance, or the desire of many women to fully engage with both careers and family. “There is the issue of how society views you, but also the policies that discriminate against you.” Although these economic and cultural factors are distinct from one another, they can be interrelated, and contribute to an environment that many young Japanese perceive as non-child friendly.

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It's not just the policies, but how seriously they're implemented

Previous measures to boost fertility rates have not delivered their hoped-for impact because they lacked the necessary detail for implementation, says Hisakazu Kato, a professor at the School of Political Science and Economics at Meiji University. He gives the example of the recent fertility treatment subsidy. While the proposal to require treatment to be covered by insurance was welcome, Professor Kato explained that it failed to recognise that treatment for infertility involves a number of different medical procedures that National Health Insurance needs to decide how to cover.

Osamu Ishihara, Professor of Obstetrics and Gynaecology at Saitama Medical University, also has concerns about including fertility treatments under national insurance. He worries that it won't have an impact, because compared to current means-based subsidies, "insurance coverage means that no matter where in Japan, one has to only pay 30% of the costs. No matter how rich you are or not. What this means is that it will benefit the rich people in Tokyo." He explains that tracking the impact of the policy will therefore require cycles of evaluation and modification. It is important to "start doing a very detailed survey immediately after implementing the policy, and look at the specific effects and brush it up as you go."

Another example is the insufficient investment in parental leave and child subsidy—two policies Japan has adopted previously—which has weakened their impact. "Most of what could be copied and done already has been," Mr. Kato says. "But the big issue is that the monetary resources put into it are very different."



Citing a paper based on twenty years of data from the Organisation of Economic Cooperation and Development (OECD), of which Mr. Kato is co-author, he observed, "we found that the higher the social expenditure, the higher the birth rate." France and Sweden each spend more than 3% of gross domestic product (GDP) on family support policies. Japan, however, spends a mere 1.6% of GDP on such policies. This is "unambitious", according to Shinji Yamashige. Comparing expenditure on childcare and education in France and Japan reveals the relative priorities of both governments, he adds. "To get to France's level, you need to spend another 8 to 10 trillion yen," Mr. Yamashige says. "If you don't spend at least ¥8 trillion, you won't reach 3% of GDP. The Japanese government spends around ¥1 trillion or so, but if you compare that to ¥8 trillion (to reach 3% of GDP), it comes as no surprise that the impact is minimal."

Family support policies do not stop at childcare and schooling. Prospective parents are calculating the long-term financial impact of having children. Masahiro Yamada, Professor of Sociology at Tokyo Gakugei University, told us that “in Japan, or in Asia as a whole, people do not give birth or get married unless they are in an environment where you can secure a stable lifestyle at old age.” In many ways, “marriage is less about the realisation of love but rather about a stable future and raising the child in the best environment possible.” Professor Ishihara agrees on the need for governments to look beyond simply support for child care, important though that is. For example, the Professor explains, “make university fees free, have scholarships for private universities, and generally show that the state will offer support until the child has graduated from university.” It is these long term commitments from the state that young couples are looking for.

Sawako Shirahase Professor of Sociology at the University of Tokyo, agrees that a long term view is important, and that children are an investment—not only for families but for society as a whole. “There is a service industry in child-rearing support, especially in the information, sustainability and welfare sectors. These will then spin-off and develop new industries. And while children themselves don't add value, they will become the next generation of consumers. You must pay the cost in the beginning, but it is an upfront investment.”

With debt worth some 250% of GDP, Japan's government has few options for sharply increasing spending unless it finds a way to increase revenues. Mr. Kato and Mr. Yamashige suggest that the government needs to increase the consumption tax, but acknowledges that this is likely to be very unpopular. “In the countries where there is good childcare support and good nurseries, the consumption tax is high—about 25% or so,”



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Ultimately, Mr. Kato adds, if the government is interested in even maintaining population numbers, it will need to choose between introducing greater immigration or spending more money on benefits to encourage larger families. If policies stay as they are, the fertility rate will continue hovering around the current level, he says. In order to reach the government's desired fertility rate target of 1.8, it must increase its financial commitment to existing family friendly policies.

Without a change in mindset, policies will have a limited impact

It is not only a question of money. Having a family-friendly culture matters too. "France sees increasing the population in a positive light", Mr. Kato says. "A big difference between France and Japan is that in Japan, for example, when there are stairs at the train station and a woman with a stroller is there, everyone will try to avoid them instead of helping them."

The persistence of traditional gender roles in Japan plays a significant role in maintaining these cultural differences. Job insecurity means that many men remain reluctant to take their allotted parental leave. In 2019, just 7.5% of men took parental leave, according to Mr. Kato, compared

with 83% of women. He noted that Japan lagged most other developed countries in this regard. Although the maternity leave law theoretically allows women to take one year off on subsidised pay, many are unwilling to take that much time off, especially at a time of economic uncertainty.

Another factor in Japan is the rigidity of work culture. Long working hours is one aspect, but employers' unwillingness to take spousal obligations into account also contributes to family-unfriendly workplaces. Mr. Komamura notes that this is especially true in the case of two-career couples, where employers expect employees to make regular geographical moves, which often requires one spouse to give up their job. Corporate culture is therefore frequently a barrier to raising a family in Japan.

An equally compelling problem is changing norms related to the desirability of raising families. "If you look at younger people these days, their values with regards to kids have changed," Mr. Kato adds. "Their own lives are the main focus and when the future doesn't look so bright, you reconsider having kids." This is especially important because in Japan people do not tend to have children outside of marriage, meaning that those who marry late or not at all will depress fertility rates.

Box 1: Living with a smaller population?

Raising the fertility rate is not the only solution to Japan's demographic challenges. What if Japan ultimately decided to resign itself to current demographic trends? Indeed, Mr. Matsutani suggests that policymakers would be better off assuming fertility rates remain depressed and thinking about ways in which Japan can sustain its current lifestyle under these conditions. These would include a heavier focus on broader economic measures, such as increasing productivity, rather than purely focusing on fertility rates.

A significant challenge would be to increase the country's low labour productivity rate, Mr. Matsutani says, which is around 70% of that of Germany. The country also lags behind other developed economies in research and development, he adds.

"Over the next 20 years [if current trends remain unchanged], Japan's working population will decrease by 20%. If Japan is able to reach the productivity level of Germany, then this would have a big effect on the working population as well," he adds.

Of course, higher productivity on its own will not solve the problems of an ageing population with fewer younger people left to care for them. This is where innovations such as robotics, in which Japan has played a leading role, could potentially help to fill the gap. A 2018 report quoted the government's robot strategy as saying that it hoped that four out of five care recipients would accept some care by robots by 2020.¹⁸

While Japan has led the world in concerns about low fertility, could it play a similar (and more positive) role in leading the world in how to manage a declining population?

The proportion of unmarried Japanese has been increasing steadily over the past two decades, says Akihito Matsutani, a professor emeritus in economics at the National Graduate Institute for Policy Studies (GRIPS) in Tokyo. Indeed, in the early 1970s the annual number of marriages in Japan exceeded 1 million couples, with a marriage rate of over 10 per 1,000 population; by 2019, just 598,965 couples married, at a marriage rate of 4.8.¹⁷ "Marriage is now not a must anymore, but rather an option," says Dr. Yoshimura. He adds that the persistence of archaic regulations, such as the requirement that both spouses must take the same surname to register a marriage, are symbolic of the inflexibility of the culture. Another reason for the low marriage rate is that "young men who have student debt and a low income are not good candidates for marriage", explains Professor Yamada. To fix that, "requires the exemption of people who already have student debt, and making university free".

Because women are still responsible for the bulk of child-rearing and housework in Japan, marriage is a particular burden for young women, Mr. Matsutani says. He argues that it's about time that policymakers "think about the woman's point of view, and think about what would make a woman want a child." He argues that the economic environment and conditions for raising children are less significant than promoting marriage and improved gender equity. "It's not about improving the conditions for pregnancy, birthing and raising a child. If you really want to increase the birth rate, there isn't much else to do but promote marriage."

Lessons from Germany?

Despite their different cultures, Germany and Japan share some similarities that makes the European country a useful pointer for Japan. Both have grappled with falling birth rates, and—at least in Western Germany—have societies which take a relatively traditional role toward childrearing and gender responsibilities. In fact, Germany offers a natural experiment on the impact of culture. During the time that Germany was split into East and West (from 1949 to 1990), women in West Germany—similar to Japan—had traditional family roles. They made up a relatively small proportion of the workforce and held few senior jobs compared with their counterparts in the East, where Communist policy underpinned funding of nurseries and promoted a more egalitarian approach to gender roles, at least on the surface. Even 30 years after reunification, echoes of these differences remain, emphasising how long it can take to change cultural norms.

The German government has increased its financial support to families in recent years. Since 2013, all German children have been entitled to a place in day care from the age of 1. This is a clear contrast with the waiting lists in larger Japanese cities, and a decision that puts pressure on local governments to find the funding to build and staff child care centres. Large subsidies for day care were further introduced in a number of regions of Germany in 2018, and in August 2019, the Good Daycare Act exempted families that receive social benefits and those with low incomes from day care contributions. The Act entitled 1.2 million children to free day care. The federal government has also allocated a total of €5.5 billion to federal states until 2022 to help them further improve the quality of day care and lower the fee burden for parents.

Historical research on the impact of a previous German child care policy, from 2005, showed it significantly raised fertility rates. The policy provided child care facilities to all children under 3 whose parents were working or in training. Increasing childcare coverage for under three year olds from 5% to 35% upped fertility rates by roughly 0.13 children per woman. Other initiatives were less successful. For example, studies of child allowances (benefits paid to families according to the number of children they have) showed no impact on the fertility rate.[†]

At a macro level, Germany spent 2.3% of GDP on family benefits in 2017, according to data from the Organisation of Economic Cooperation and Development (OECD). Lower than the 2.9% spent by France, but significantly higher than the 1.6% spent in Japan.



* For more details on day care in Germany, see the relevant pages on the website of the Federal Ministry of Family Affairs, Senior Citizens, Women and Youth. Available at: <https://www.bmfsfj.de/bmfsfj/meta/en/youth>

† For a more detailed description of the way child allowances are treated under tax law, see Child Benefit and Child Allowances in Germany: Their Impact on Family Policy Goals, from the ifo Institute. Available from: <https://www.ifo.de/DocDL/dicereport114-rm1.pdf>

Making the promise a reality

The low fertility rates found in Japan did not just happen—they are the product of years of economic and cultural change, and long-forgotten policy initiatives. One historical narrative was put to us by Mr. Yamashige. He explained that up until the 1970s, couples had children in part as a kind of personal insurance to make sure they were cared for in old age. That all changed in 1973, when the government introduced major welfare reforms that ensured that even single people would have a guaranteed pension. As with most policies, it created unintended side effects, one of which was a steep drop in the marriage rate from the mid-1970s. “In that way, the government has taken the place of the child,” Mr. Yamashige says. “So having a child or marrying is not a must anymore and has become more of a choice. This is the biggest change.”

Despite the somewhat disappointing results from the raft of fertility-boosting measures introduced in recent years, greater political will, and a determination to increase the financial backing for such policies, could yet bring better results.

Of course there are other “root causes” that could be prioritised in the retelling of Japan’s long and ongoing fall in fertility rates, but it is clear that culture, the decline of marriage, and the changing role—and expectations—of women in society has played a big role. Mr. Yamashige argues that more women entering politics could be a trigger for change. Japan is currently in 120th place in the World Economic Forum’s gender equality index and political participation remains low: women make up just 9.9% of the National Diet, Japan’s legislature. “However, the issue with values is big and it cannot be changed that quickly”, he adds. Certainly the evidence from Germany would support that. In the same way that falls in fertility rates happen over generations, so will their recovery.

Raising birth rates is hard. As Noriko Tsuya, a Professor of Economics at Keio University, points out, there is “not a single example of a country who was able to successfully increase their low birth rates”. Nevertheless, despite the somewhat disappointing results from the raft of fertility-boosting measures introduced in recent years, greater political will, and a determination to increase the financial backing for such policies, could yet bring better results.

We conclude with the following key takeaways.

The policy principles from our 2018 report remain valid

Our original report on fertility in Japan concluded with listing five principles around which successful fertility raising policies could be designed. These were to:

- 1. Build a family friendly society; don't just aim to raise the fertility rate**
- 2. Implement stable, long-term packages of complementary policies and programmes**
- 3. Improve access to assisted reproduction technology alongside family friendly policies**
- 4. Fund the long-term implementation of policies in order to witness their impact**
- 5. Be guided by a long-term, investment driven mind-set**

We believe that these remain relevant and a reliable guide to thinking about fertility in the country. Many of these principles were raised by our expert interviewees, and we recommend readers to refer to our original report to see more detailed discussion of each point.

It's not about maintaining the population size, but managing its decline

We have described how even under the most ambitious of our scenarios—that of achieving a TFR of 2.1 from today until the end of the century—Japan's population is still expected to be at least 10% smaller at the end of the century than it is today. At baseline levels, the shrinkage will be up to 40%. Therefore efforts to shore up fertility rates should not be seen as an attempt to maintain the population size. Rather, the goal of the policy should be to slow the decline sufficiently so that the relationship between generations remains sustainable. Our model suggests several scenarios in which even a partial reversal of current demographic trends leads to not only a reduction in population decline, but a lowering of the old-age dependency ratio, stronger economic growth and increased personal income. In the best-case scenario, these benefits could be substantial.

Any increase in fertility rate, therefore, even if it remains well below the replacement rate of 2.1, is valuable. Regardless, policymakers need to start thinking about how the economy can continue to thrive with a diminishing population.



People need to want to have children before they will have children

More than one interviewee spoke of the need for policymakers to look at things from a woman's point of view. There was wide agreement that a greater willingness to address the cultural norms that make Japan an unattractive place for women to marry, and for couples to start families, will be key to reversing current trends.

Mr Kato captures this when he says "enabling people who want to have kids, to be able to have kids, is very important for society. However the policy is not good for people who don't want to have children [...] the right policy would be one where an individual can work and have a child at the same time, and that would contribute to the individual's happiness". Similarly, while childcare is important, Mr. Komamura highlighted the futility of narrow policy change when culture change is also required: "just making nurseries free for children from three to five doesn't mean that people will want to have children more."

Another reason why policy makers need to focus on needs and desires of citizens rather than just an end point measure of TFR is that it is possible to lose sight of how policy affects people's lives. For example, Professor Tsuya suggests that "in my opinion, a policy can't just look at 'birth rates and how they declined, despite investing a lot of money in child care services'. We must consider it a personal issue—even if birth rates continue to decrease, couples in Japan should be able to have as many kids as they want, and get supported in their private as well as professional life, and to improve their quality of marriage and life".

Corporate values and economic security are as important as cultural norms and family-friendly policies.

One of the most important contributing factors to the family-unfriendly culture in Japan is the fragile economy and the rigid corporate culture. Men and women in Japan often find themselves in insecure or irregular employment. There has been a dramatic increase in *keijaku* (fixed-term employment with limited social insurance provision), *haken* (contract work in which workers are sent by an agency to an organisation for a fixed period) and *freeta* (young people without stable employment who jump from one temporary job to another). This instability in the economic and labour market adds to the deferment of both marriage and births.

The corporate culture in much of Japan makes it difficult for women to work and start a family. The expectation of long hours and the few opportunities for part time work (but with the same security as full time employees) mean that a work-life balance is out of reach for many. Women are also having to leave their jobs to raise children, whether they want to or not. The importance of corporate culture seems often to be overlooked by policy makers in Japan, yet they play a central role in keeping fertility rates low.





If you can only fund one thing, fund childcare

The government of Japan, like many post-COVID, is likely to be short of money. In addition to addressing corporate and wider cultural factors, if there is just one “family friendly” policy that the government wishes to focus its resources, childcare should be the clear priority. This is especially so in larger urban areas where the waiting list for nursery places hasn’t substantially changed over the past few years.

The child care challenges faced by city dwellers exacerbate the decline in birth rates in two ways, Mr. Kato points out: young people from rural areas with plentiful childcare places are attracted to cities by employment prospects, which leads to declining birth rates in the areas they leave, as well as further limiting births due to the expense of raising children in cities. Although ironically, he observes, the pandemic and the increase in home working has led many younger people to leave big cities such as Tokyo, which could reduce their populations and make the urban environment a more attractive place to raise children in the future.

Whatever may happen in the next few years, insufficiently funded childcare has long been a problem in Japan. Fixing this particular problem would be a good way to herald a new, and more fertile, future.

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Appendix: Methodology

Model overview

In this report, we assess the implications of policy changes which aim to increase the fertility rate in Japan. We use an excel-based modeling approach, developed based on an extensive data audit and literature review, which assesses the demographic and economic impacts to 2100 of a change in the total fertility rate (TFR) in Japan under alternative scenarios. The model compares impacts against a baseline scenario. This section provides an overview of the methodology used to develop demographic and economic projections for Japan under baseline and alternative total fertility rate scenarios.

Baseline forecasts

The baseline assesses changes in the demography of Japan, and the economic consequences, based on underlying forecasts of the total fertility rate in Japan from the United Nations World Population Prospects (2019).

- Demographic baseline:

The demographic baseline for Japan is obtained from the United Nations World Population Prospects (2019) which provides forecasts of the total population in the country from 2021 to 2100, broken down by gender and by age cohort.

The EIU has conducted separate analysis to break down top-level forecasts of the population in Japan based on underlying variables including:

- Forecasts of birth rates by age of mother
- Forecasts of death rates across age cohorts and gender
- Forecasts of migration
- Economic baseline:

To estimate the economic baseline, we have first developed forecasts of total economic growth (measured by Gross Domestic Product, or GDP) to 2100 under the baseline assumptions on the demographic profile of Japan as above. Forecasts of economic growth from 2021 to 2050 are extracted from the EIU's country analysis database. We assume that between 2050 and 2100, GDP continues to grow at the constant annual growth rate (CAGR) estimated between 2040 and 2050 which is equivalent to a growth rate of 0.25% per annum.

In addition to estimating overall GDP growth in the baseline to 2100, we also estimate the economic contribution per person of working age in each gender and age cohort and in each year. In each year, baseline GDP is broken down as follows:

$$GDP^t = \sum_{i,j} emp_{i,j}^t * contribution_{i,j}^t$$

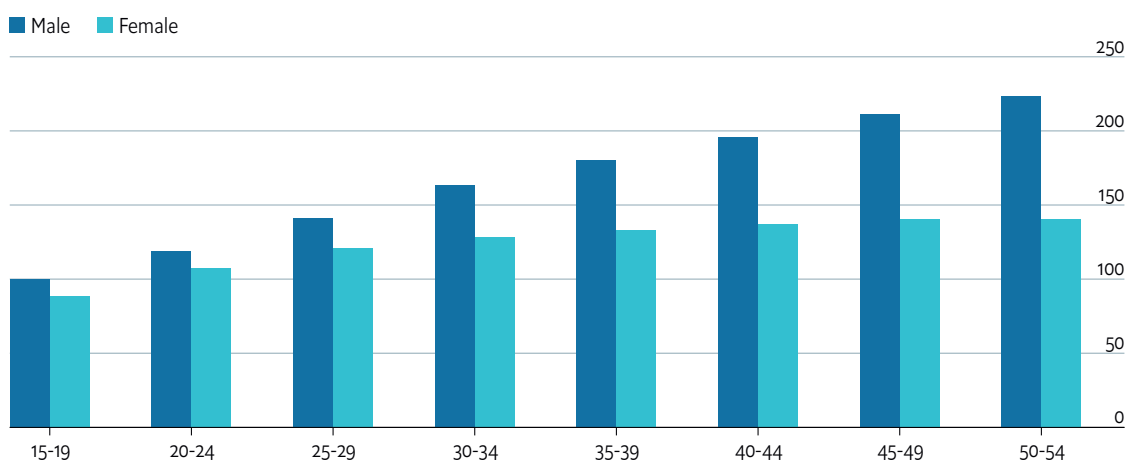
where:

- t refers to the year (from 2021 to 2100)
- i refers to gender (male and female)
- j refers to the working age cohort contributing to GDP (10 cohorts including: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64)
- GDP^t is the baseline GDP in time period t
- $emp_{i,j}^t$ is the employment in time period t of gender i in age cohort j
- $contribution_{i,j}^t$ is the contribution per working person to GDP in time period t of gender i in age cohort j

The EIU estimates employment across gender and age cohorts based on annual data on the total population size across gender and age cohorts (obtained from the UN World Population Prospects 2019) and data on the employment rate across gender and age cohorts in 2017 (obtained from the Ministry of Health, Labour and Welfare, Japan). It is assumed that the employment rate remains constant across genders and cohorts over time at 2017 levels.

The contribution per person is estimated based on the equation above, using GDP and employment forecasts. It is assumed that the relative GDP contribution across gender and age cohorts is the same as the relative earnings across these cohorts in 2017 (based on salary data obtained from the Ministry of Health, Labour and Welfare, Japan). In other words, if men aged 20-24 earned 119% of the salary earned by men aged 15-19, it is assumed that their total contribution to GDP is also 119% that of the 15-19 cohort (see Figure 6 below). We estimate the GDP contribution per person in each year (across gender and age cohorts) based on the forecast total GDP. These estimates are used to assess the impacts on GDP of changes in the demographic profile of the country following changes in the total fertility rate under the scenario analysis discussed on page 28.

Figure 6: Relative earnings across gender and age cohorts, relative to males aged 15-19, 2017 (%)



Sources: Ministry of Health, Labour, and Welfare, Japan; EIU analysis.

Scenario analysis

The scenario analysis assesses the impacts of a change in the total fertility rate (TFR) on the demographic structure of Japan, and the subsequent economic consequences.

- Demographic impacts:

We first assess the impact of a change in the TFR on the number of births in each year. The TFR is estimated as follows in each period:

$$TFR^t = \sum_j^t ASFR_j^t$$

where:

- t refers to the year (from 2021 to 2100)
- j refers to the age cohort of mothers (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49)
- TFR^t is the total fertility rate in time period t (given by the scenario modelled)
- $ASFR_j^t$ the age-specific fertility rate for women in each cohort in each year, estimated as the number of births per woman in each cohort divided by the number of women in each cohort

To assess the impact of a change in TFR on births, it is assumed that the age-specific fertility rate (ASFR) in each cohort changes proportionately to the change in TFR—in other words, it is assumed that the change in fertility rates is the same across all cohorts. The change in ASFR is used to estimate the change in number of births for each age cohort of women in child-bearing years. It is assumed that the male/female split of new births is in the same ratio as the UN's projections of the birth sex ratio in Japan, obtained from the World Population Prospects 2019.

Having estimated the change in number of births, we then estimate the change in total population across age and gender cohorts in each year compared to the baseline as follows:

For cohorts aged 0-4:

$$\text{Pop}^t = \text{Pop}^{t-1} - \text{Deaths}^{t-1} + \text{Births}^{t-1} - \text{Change}^{t-1}$$

For cohorts aged 5-14 and 65+:

$$\text{Pop}^t = \text{Pop}^{t-1} - \text{Deaths}^{t-1} - \text{Change}^{t-1} + \text{Change}^t$$

For cohorts aged 15-65:

$$\text{Pop}^t = \text{Pop}^{t-1} - \text{Deaths}^{t-1} - \text{Change}^{t-1} + \text{Change}^t + \text{NetMigration}^{t-1}$$

where:

- Pop^t is the population of the cohort in the current period
- Pop^{t-1} is the population of the cohort in the previous period (in the first period of the analysis, this is given by the baseline estimates)
- Deaths^{t-1} is the number of deaths in the cohort in the previous period (Note: it is assumed that the share of deaths relative to the size of the cohort remains the same in the scenario analysis compared to as in the baseline)
- Births^{t-1} is the number of births (estimated based on the change in TFR under each scenario)
- $\text{NetMigration}^{t-1}$ is the number of migrants across each cohort from the previous period (Note: it is assumed that the total number of migrants remains the same as in the baseline)
- Change^{t-1} is the movement of individuals from the previous age cohort into the subsequent age cohort in the new period, for example the share of individuals in the 0-4 cohort that move into the 5-9 cohort in the following time period (Note: it is assumed that the share of movement across cohorts relative to the size of the cohort remains the same in the scenario analysis compared to as in the baseline)

- $Change^t$ is the movement of individuals from the current age cohort into the subsequent age cohort in the new period, for example the share of individuals in the 5-9 cohort that move into the 10-14 cohort in the following period (Note: it is assumed that the share of movement across cohorts relative to the size of the cohort remains the same in the scenario analysis compared to as in the baseline)
- Economic impacts:

The economic impact of a change in the total fertility rate is estimated based on: (i) the estimated change in the size of the population across cohorts under the new scenario; and (ii) the contribution to GDP of each gender/age cohort estimated in the baseline. It is assumed that the GDP contribution per person remains the same as in the baseline, hence the economic impact is driven by the change in the size of each cohort, estimated as follows:

$$GDP^t = \sum_{i,j} emp'_{i,j}{}^t * contribution_{i,j}{}^t$$

where:

- t refers to the year (from 2021 to 2100)
- i refers to gender (male and female)
- j refers to the working age cohort (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64)
- GDP^t is the revised GDP under the alternative TFR scenario in time period t
- $emp'_{i,j}{}^t$ is the revised employment under the alternative TFR scenarios in time period t of gender i in cohort j
- $contribution_{i,j}{}^t$ is the baseline contribution per working person to GDP in time period t of gender i in cohort j

Limitations of the analysis

The model developed combines data from multiple sources to offer novel estimates of the potential impacts on the demographic structure and economy of Japan from a change in fertility rates. By using a bottom-up approach, it captures a number of inter-generational dynamics between cohorts of different ages, accounting for in-year changes in the size of each cohort and changes in the overall size of the working age population which contributes economically. Furthermore, the model also accounts for differences in the economic contribution of different age cohorts in the labour force. However, the economic analysis is based on several simplifying assumptions which form important limitations and caveats to the findings.

Estimates of the economic impact of a change in the fertility rate are driven by the impact of this change on the future size of the working age population. It is assumed that the contribution of each person in the labour force remains the same, hence the economic impacts are linear and driven entirely by the change in the size of the workforce for different age groups. In reality, there are a number of additional factors that would affect the overall economic impact both positively and negatively:

- **Environmental impacts:** There is a school of thought in the economic literature that argues that as fertility rates increase, there are negative environmental impacts which follow. These impacts can put downward pressure on the overall economic gains from population growth despite the positive impacts through labour market effects. The Barro-Becker framework, for example, even highlights a negative relationship between fertility and economic development across countries.
- **Fiscal impacts:** Changes in population dynamics can have significant fiscal impacts, with corresponding economic impacts which are not captured by the model. As the size of the working age population grows, potential tax receipts increase including through personal income tax from a larger workforce, corporate income tax from increased economic activity, and indirect tax through increased consumption. However, at the same time, government expenditure is also expected to increase with increasing fiscal outlays to support a larger population. The net impacts of these opposing effects will determine the overall fiscal impact and the knock-on economic impacts.
- **Non-linearity of impacts:** The analysis suggests that every additional person in the workforce within a certain age bracket contributes equivalently to economic output. However, this relies on a number of underlying assumptions, including that the labour force is able to absorb the additional labour (in other words, that there is sufficient growth in labour demand to meet the increase in labour supply), and that the allocation of this labour across economic sectors remains the same. If, for example, unemployment rates were to rise as the size of the potential workforce grows, the economic impact of changes in the fertility rate would be lower than those estimated.

Data sources

The table below summarises the key data points used in the analysis including the data sources, the availability of data and any assumptions made in using the data for the analysis.

| Data | Source | Data availability and assumptions |
|---|---|---|
| Population of Japan, by age and gender | UN World Population Prospects, 2019 | Annual data and forecasts available from 2050-2100 |
| Number of deaths in Japan, by age and gender | UN World Population Prospects, 2019 | Data and forecasts available from 2050-2100 (over 5 year periods) |
| Number of births in Japan, by age of mother | UN World Population Prospects, 2019 | Data and forecasts available from 2050-2100 (over 5 year periods) Assumed that annual births are constant across the period |
| Birth sex ratio | UN World Population Prospects, 2019 | Data and forecasts available from 2050-2100 (over 5 year periods) |
| Total fertility rate (TFR) in Japan | UN World Population Prospects, 2019 | Data and forecasts available from 2050-2100 (over 5 year periods) Note: published data is not used and the TFR is instead calculated bottom up based on data on the number of births and the number of women of child-bearing age for consistency in the analysis |
| Net migrants in Japan | UN World Population Prospects, 2019 | Data and forecasts available from 2050-2100 (over 5 year periods) Assumed that the gender split of migrants is in the same ratio as the overall population split in Japan Assumed that all migrants are of working-age in Japan (aged 15-64), split across age cohorts in the same ratio as the overall population split in Japan |
| GDP of Japan | EIU country analysis and forecasts | Annual data and forecasts available 1980-2050 Forecasts for 2050-2100 estimated assuming the same constant annual growth rate in GDP as over the period from 2040-2050 |
| Employment and unemployment in Japan, by age and gender | Ministry of Health, Labour and Welfare, Japan | Data available for 2017 Assumed that the employment rate across age and gender cohorts remains the same across time |
| Total earnings in Japan, by age and gender | Ministry of Health, Labour and Welfare, Japan | Data available for 2017 Assumed that the relative earnings across age and gender cohorts remains the same across time |

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