

# The global effects of Asia's aging population

Leading perspectives to navigate the future



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## General disclaimer / important information

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# Introduction

I am delighted to present the latest study from the Credit Suisse Research Institute, “The global effects of Asia’s aging population.” This new work draws off the insights of our research analysts across the full breadth of the region, complemented by new primary research, proprietary to Credit Suisse.

Asia is home to nearly 60% of humanity and its economic rise in the last few decades has transformed the global economy. It has also proved to be the manufacturing hub of the world and a net supplier of savings that has supported consumption in the developed world.

However, with the dynamism of Asia, particularly China, having been so central to the success of the global economy, a key question going forward is what will be the implications of a significant aging and shrinking in the workforce within this engine of growth, both within the region and outside of it. Our work highlights consequences for global growth, inflation, and interest rates and, in turn, investors and companies.

To help inform the discussion, the CSRI has taken a lead commissioning a proprietary survey of 6,000 people in the six most populous countries in Asia. This survey uniquely explores the impact of demographics on supply-side factors like labor and savings, as well as social preferences that drive demographic and work choices. The “bottom up” insights from the study illuminate existing academic work in the field.



Most importantly, our research deepens an understanding of the diversity of the region. Even as demographic transitions accelerate in Japan and South Korea, for example, they are remarkably slow in Indonesia and the Philippines. While China and Thailand run the risk of growing old before they become wealthy, India’s challenge over the coming decade would be in deploying its burgeoning workforce.

I trust you will find the first edition of our prospective studies designed to explore global demographic challenges highly informative and thought-provoking.

**Axel P. Lehmann**

Chairman of the Board of Directors  
Credit Suisse Group AG

# Executive summary

In the ten years ending 2019, ten economies in Asia, i.e. China, India, Indonesia, Japan, Philippines, Vietnam, Thailand, South Korea, Malaysia, and Taiwan (Chinese Taipei), made up 50% of incremental global GDP and 60% of incremental goods exports, and supplied USD 5 trillion in capital to the rest of the world. As half of these countries (we call them the A-10) are aging rapidly, how will the global supply of labor and capital be affected? A team of 28 researchers in Asia combined a survey of 6,000 people in the six most populous countries in the A-10 with comprehensive secondary research and analysis to find answers to these important questions.

## Demography is changing faster

It is normal for population growth to slow and average ages to rise as countries prosper. The demographic shift in the A-10, however, is faster than the economic transition. Their economies have grown two to three times faster than the pace at which the EU/USA grew at similar income levels, but the drop in their fertility levels has been five to seven times faster. Most of the A-10 countries have reached low fertility levels at much lower per capita income levels than in the EU/USA. They are aging faster too: whereas the average age in the EU/USA rose from 30 to 40 over half a century, this occurred in just 17 years in South Korea and 22–24 years in Japan, China and Thailand. Thailand and China have a higher median age and a lower wealth per capita than all countries outside Eastern Europe, and their economies may grow old before they get wealthy. In Japan and South Korea, there is a steep decline in births as the number of women of child-bearing age is now falling. At this demographic stage, confidence weakens. Just 30% of Japanese respondents in our survey expect to be better off than their parents, versus 80% in other countries.

## Productivity matters over headcount

The A-10 countries made up more than half of incremental global working-age population in 2010, but will see a shrinking workforce by 2032. A continuing shift away from agriculture can help release workers for industry and services, but, most importantly, the quality of the workforce may matter more than its quantity. A-10 countries with low fertility rates have also seen the strongest increases in average height and years of schooling. This means a longer working life (more educated people tend to retire at an older age), as well as higher productivity. Despite a growing preference

for services employment, as corroborated by our survey, we find that the supply of industrial labor to global value chains from A-10 countries is less at risk than feared, at least over the coming decade. Risks to supply can come from geopolitical conflicts, which can hamper productivity growth. Labor-supply-related challenges should intensify after 2035, in our view.

## Asia to continue providing capital

The A-10 countries are also a major provider of capital to the world, with USD 15 trillion in net international assets. Given that A-10 dependency ratios (the number of children and retired elders per 100 workers) are set to rise, many people fear a drop in their savings. However, we think this is unlikely over the next decade for two key reasons. First, due to insufficient pensions and public healthcare in most of the A-10 countries, households may continue to save for emergencies and retirement, as confirmed by our survey. Further, as people age, they become more cautious: Japan had the lowest percentage of respondents who thought their pensions were sufficient, despite Japan having the largest pension assets in the A-10. Second, rising dependency ratios mean weak real house prices (China, Japan and South Korea are most at risk, in our view): reducing real estate investments would mean a shift toward financial assets. Most A-10 economies still need to increase their pension wealth, implying continued strong demand for less-risky assets.

## Slower growth, lower rates/inflation

We believe the future risks to A-10 growth are less related to labor supply, and more to sluggish growth in capital deployment, particularly in real estate and infrastructure investments. Further, in several of the A-10 countries, total factor productivity growth (or efficiency of use of labor and capital) has fallen in recent years, creating a headwind for global growth. Separately, we do not see demography affecting inflation meaningfully, with the A-10 dependency ratio unlikely to rise in the next decade (we assume younger economies will increase their participation in global value chains). Combined with the continued demand for less-risky assets and anemic productivity growth, this would mean low interest rates again once the current macroeconomic volatility subsides. A sharp rise in the A-10 dependency ratio that could affect inflation is only likely to occur after 2035.



Photo by d3sign, Getty Images

# Demography changing faster than economies

Neelkanth Mishra, Prateek Ancha, Abhay Khaitan

It is common for fertility to fall and average age to rise as incomes grow. However, several Asian economies are aging much faster than the growth in their economies, running the risk of growing old before they grow rich. In some economies, where fertility fell below the population replacement rate two generations back, population is shrinking, and they will be among the oldest globally by 2040. Some others are at the other extreme, with work-force growth expected until 2060–70.

Figure 1: The curve of fertility vs. income is L-shaped (2019)

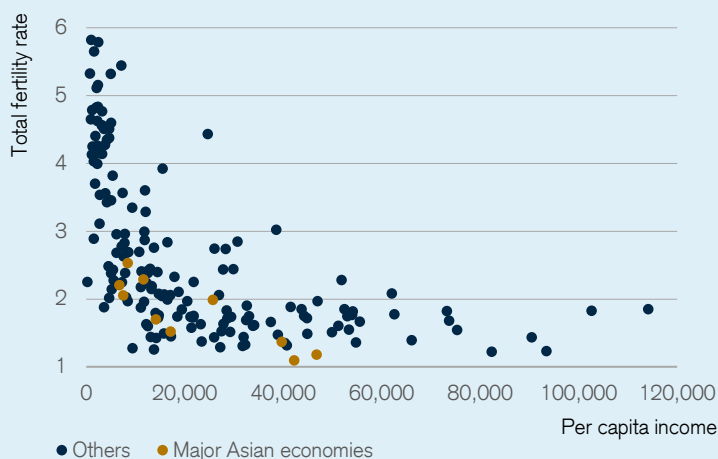
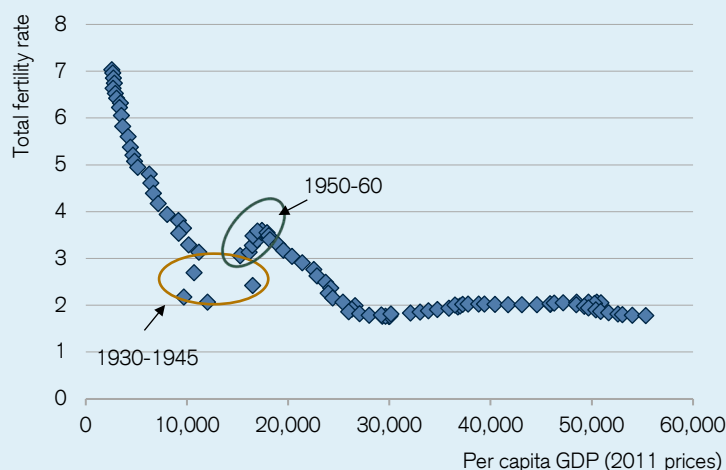


Figure 2: The link between TFR and GDP is not deterministic over short periods, e.g. USA



Source Figures 1 and 2: UN, Penn World Table, Credit Suisse

## Fertility rates decline with rising income

A comparison of global fertility using the total fertility rate (TFR), i.e. the number of children a woman has during her life, with per capita GDP reveals an L-shaped chart (Figure 1). As incomes rise, fertility first drops sharply and then flattens out at around USD 20,000–25,000 of per capita GDP<sup>1</sup>.

## Income growth affects several of the major factors driving fertility

One should note that this relationship is far from deterministic over short periods. For example, in the United States, total fertility fell steadily from 1800 to 1925 as per capita GDP grew from USD 2,500 to USD 11,000, but plummeted during the depression years alongside the drop in incomes (Figure 2).

1. Note that all population data in this report uses the medium outlook for the UN World Population Prospects

Conversely, in the post-World War II boom years, despite a sharp increase in per capita GDP, fertility bounced back to 3.5 by 1960 before restarting its decline. From the bottom of 1.8 in 1979, it again rose marginally to 2.1 in 2005 and has been falling again ever since.

Over the medium term, however, income growth affects several of the major factors driving fertility. For example, as higher incomes improve the quality of healthcare, the infant mortality rate (IMR), i.e. the death rate of children below the age of five, falls rapidly as per capita GDP grows: the curve is even more L-shaped than that of fertility (**Figure 3**). A lower IMR reduces the need to have more children. That said, technology/best practices that drive the IMR are not directly income-linked: the IMR in Peru today is half that of the United Kingdom in 1960<sup>2</sup>, despite its per capita GDP being 10% lower than that of the United Kingdom in 1960. Income growth is coincident with factors like urbanization, which also reduce fertility. Across the world, urban fertility lags rural fertility. In rural areas, children can start contributing economically at a very early age (say herding cattle or helping with crops), whereas there are very few child-appropriate jobs in urban areas. Moreover, given expensive real estate, which drives rental costs and costs of services like education and healthcare, the cost of raising a child is higher in cities.

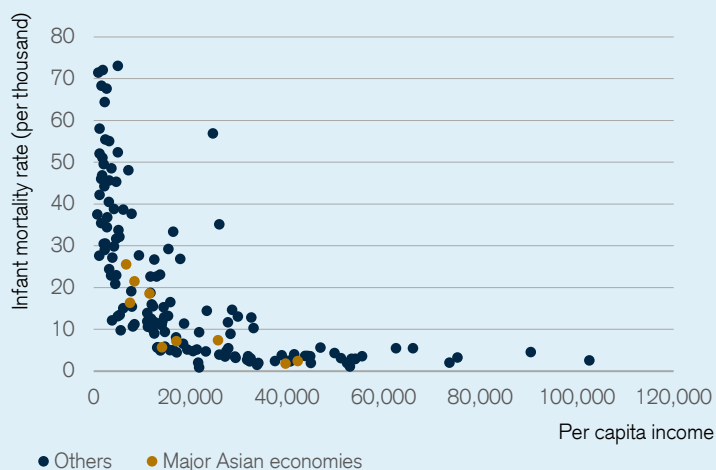
However, some factors affecting fertility also have a weak or indirect relationship with income, such as female literacy, which is one of the most significant drivers of the IMR as well as the TFR<sup>3</sup>. Literate women can read and follow instructions (like usage of contraception or medications and nutritional supplements for early-age children), even if they do not join the workforce and earn income. Basic literacy, however, does not significantly affect income and literacy can rise much faster than GDP. But more years of education mean that people marry and have children later in life. Data show that much of the global drop in fertility is due to a delay in *primigravida* (the age of first pregnancy): across cohorts of women born in 1970, 1980 and 1990, the number of children born to women over the age of 28 has not changed materially (**Figure 4**). Most of the decline is due to the number of children that were born before the mother turned 28. Much of the decline in the TFR in Asia is also due to fewer children being born to mothers younger than 28 (**Figure 5**), where the rising age of marriage and workforce participation are contributing factors.

Further, given the easier availability of various affordable forms of contraception, ideals still drive demographic decisions as much as income.

2. Source: Tomorrow's People, Paul Morland

3. "Female education and its impact on fertility," IZA World of Labor

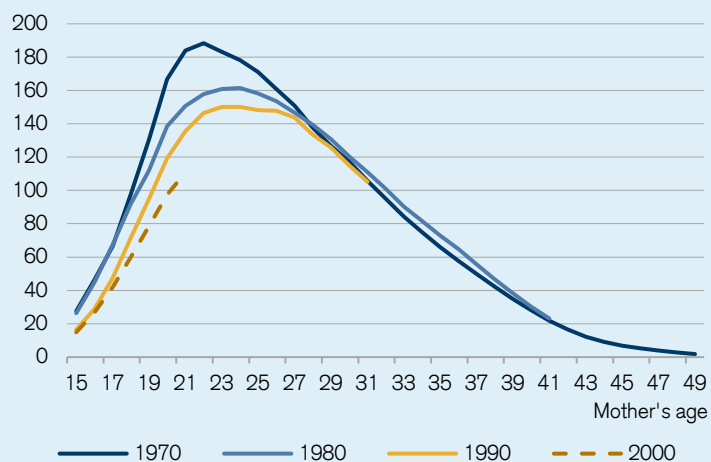
**Figure 3: Infant mortality rate also falls as income rises**



Source: UN, Penn World Table, Credit Suisse

**Figure 4: Much of the decline in fertility worldwide is due to having children later**

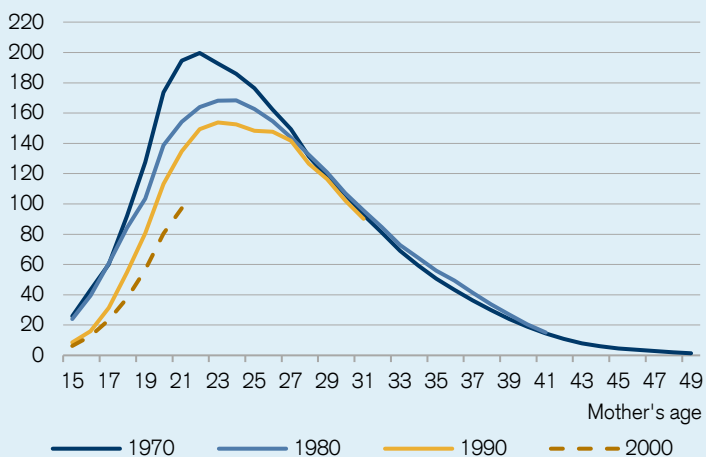
Child births per 1000 women by cohort (birth year of mother)



Source: UN WPP, Credit Suisse

**Figure 5: Asian fertility rate much lower for younger cohorts**

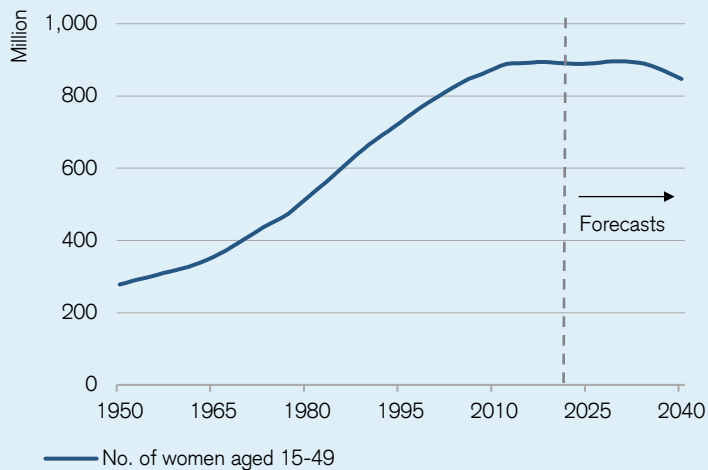
Child births per 1,000 women by cohort (birth year of mother)



Source: UN WPP, Credit Suisse



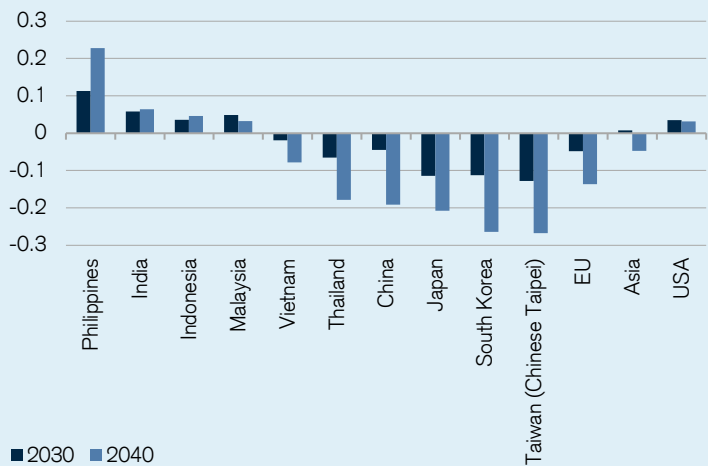
**Figure 6: The number of women of reproductive age in A-10 countries levelling out between 2015 and 2035**



Source: UN WPP, Credit Suisse

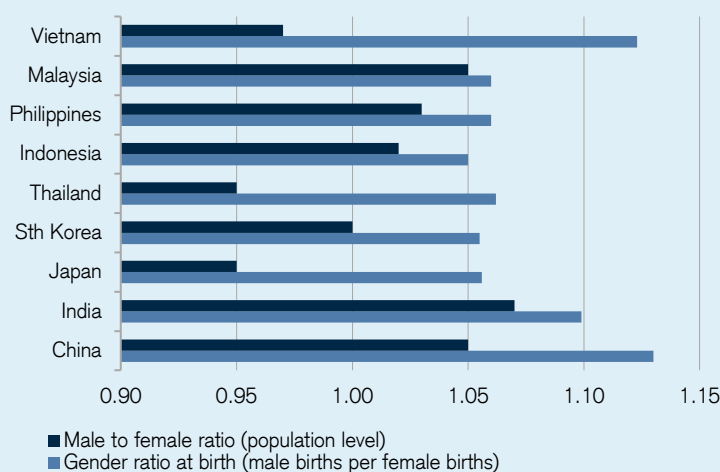
**Figure 7: Significant variation across countries**

Change in population of women aged 15-49 vs. current population



Source: UN, Credit Suisse

**Figure 8: Above-normal gender ratio at birth is a problem**



Source: UN WPP, Credit Suisse

For example, Israel's TFR of 3.0 is substantially higher than that of every Asian country we monitor, despite the country's per capita GDP being higher than most of these countries. Another example is Amish women in the US state of Ohio who on average have three times more children than other women in the state.

## Demographic shifts show up with a lag in population

A decline in TFR does not automatically mean an immediate fall in population – that may occur 25–40 years later. To start with, some drops in fertility can be temporary: in their TFR estimates, demographers assume younger women today are likely to have the same number of children at a later age as the previous generations did. So, if a generation of women start having children later in life (e.g. due to higher workforce participation and/or marrying later), the TFR calculated by demographers might fall for a time, but rebound later when this cohort starts having children.

Further, populations can keep growing for many years after their TFRs fall below replacement levels, mainly because the number of women able to have children peaks much later. For the ten countries in Asia that we cover in this report, the collective count has now flattened and should start falling from 2035 onward (**Figure 6**). There is, however, significant variation across countries: while this number is declining steeply in China, Japan, South Korea, Thailand, and Taiwan (Chinese Taipei), it is flattening out in Malaysia and Vietnam, and still rising in India, Indonesia, and the Philippines (**Figure 7**).

## “ An important driver is also the gender ratio

In addition to past fertility trends, an important driver is also the gender ratio or the number of males per 100 women. The range considered normal is 103–106 (male children have higher mortality, so the species has more of them), but several Asian economies have a significantly higher ratio, given the preference for male children and better access to technologies that allow for pre-natal gender selection (**Figure 8**). In countries like Vietnam, where this appears to be a more recent phenomenon, the impact on fertility would

show up with a lag. However, in countries where this ratio has been high for 20 years, the number of childbearing women is lower than it would have been. Another outcome of this phenomenon is that more males are unable to find partners in countries with high gender ratios.

Over the years, the average age of marriage has risen and countries that are more advanced in the demographic transition like South Korea and Japan have a significantly higher average age of marriage than in countries less advanced in the demographic transition like India, Indonesia and the Philippines (Figure 9). That fewer people in the younger cohorts are planning to marry is a bigger concern in Asia because cultural factors in Asian societies mean that very few children are born out of wedlock compared to more than 50% in the USA.

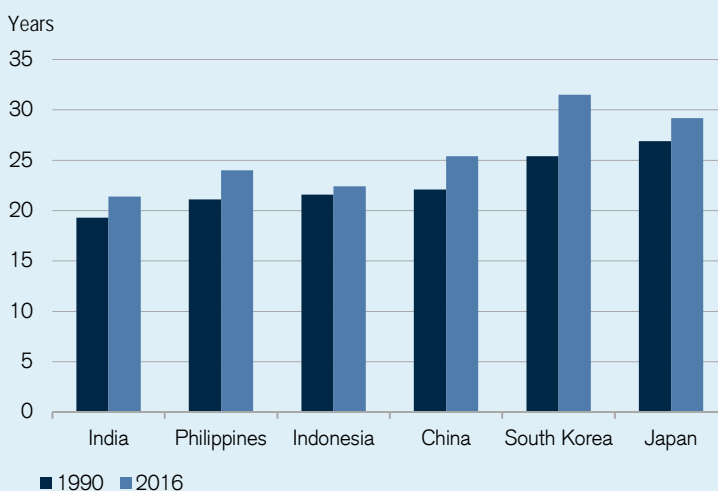
A late marriage means that the age at which parents have their first child increases too. In addition, they may prefer to have fewer children, as we found in our proprietary survey conducted by leading global consumer research firm Nielsen on behalf of Credit Suisse. Across the six countries in which we conducted the survey, most respondents in less demographically advanced economies want two or more children. In Japan, on the other hand, around 30% did not want to have any children, whereas in China most wanted to have one child. Due to our survey methodology (e.g. conducted online and mostly urban), the samples are not completely representative of all countries, but the trends are still instructive.

### The pace of demographic transition is accelerating

Population experts define four stages of demographic transition (see Figure 10). While there have been exceptions, countries generally start with Stage 1 (stable population), and then progress through Stages 2 (rapid growth in population), 3 (slowing growth with a moderate rise in average age) and 4 (falling and aging population). The ten countries we study are in the third or the fourth stage of transition. Countries in Stage 1 or 2 are mostly in sub-Saharan Africa. While nearly every country goes through the stages in the same sequence, the pace at which the transition occurs has accelerated. In the 19th century, a country saw a meaningful fall in death rates over 100 years. In the first half of the 20th century, this occurred in around 60 years, but by the second half of the century, it had fallen to just 35 years (Figure 11).

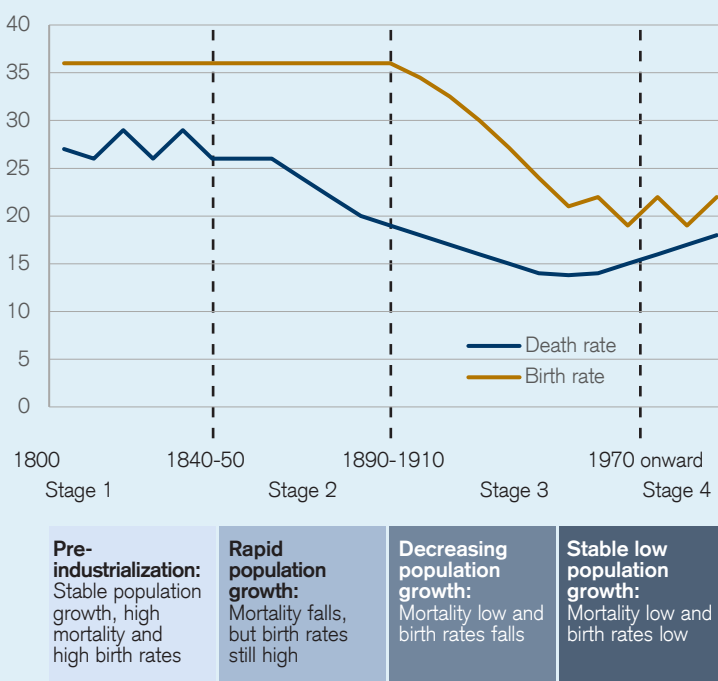
The pace of decline in birth rates has been even faster, with the period of transition falling from nearly 100 years in the first half of the 19th

**Figure 9: Average age of marriage for females in 1990 vs. 2016**



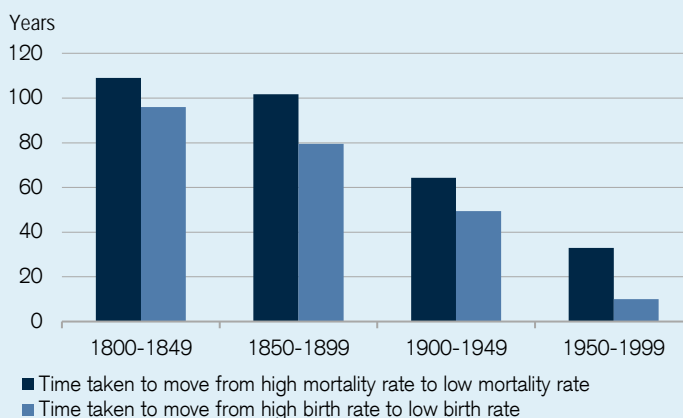
Source: UN World Marriage Data 2019

**Figure 10: The classic model of demographic transition**



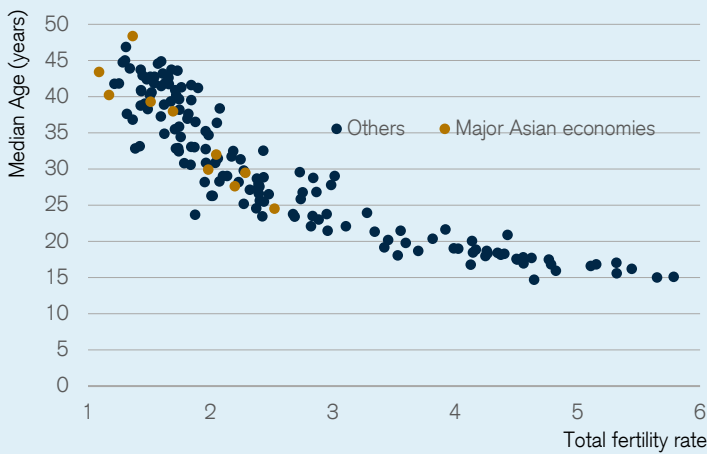
Source: Four stages of demographic transition in Western Europe, Thomas Malthus

**Figure 11: The pace of transition has picked up over the years**



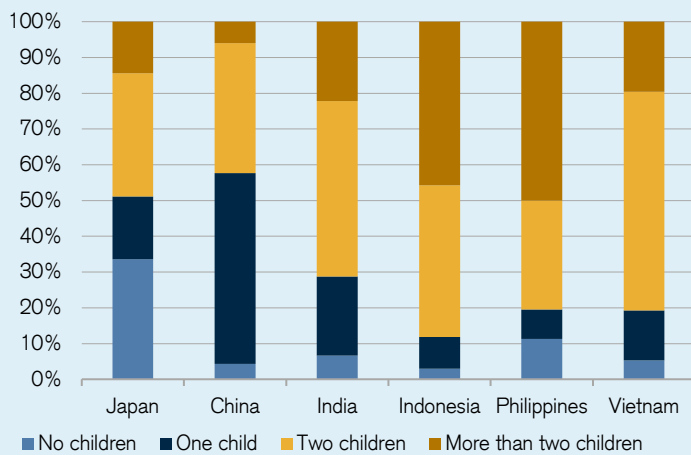
Source: Delventhal et al. (2021), Credit Suisse

**Figure 12: As the TFR drops, population aging starts**



Source: UN WPP, Credit Suisse

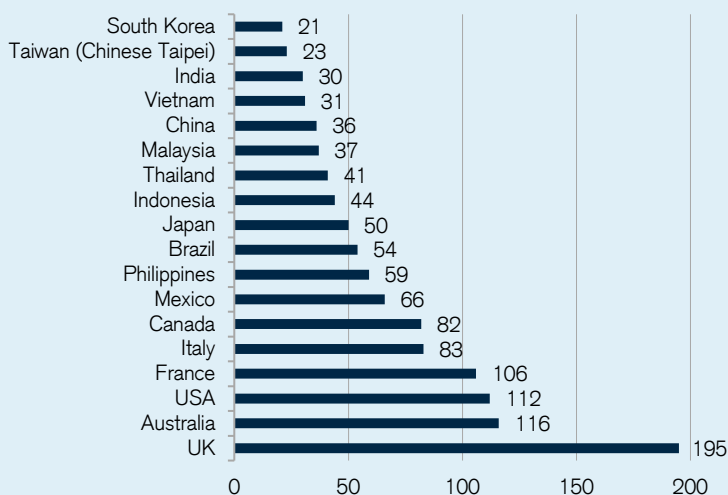
**Figure 13: CS Survey – how many children do you intend to have?**



Source: CS-Nielsen Survey

**Figure 14: Asia's growth has been much faster than for developed markets**

Estimated time taken for per capita GDP (PPP, constant prices) to grow from USD 3,000 to USD 15,000 (in years)



Source: PWT, Credit Suisse

century to just ten years in the second half of the 20th century. Not only is this too rapid for income growth to keep up, but the population also ages much faster as birth rates fall faster than death rates. The A-10 Asian economies, i.e. China, India, Japan, Indonesia, Vietnam, Philippines, South Korea, Thailand, Malaysia and Taiwan (Chinese Taipei), are aging much faster than the mostly developed economies where demographic transition has been slower (Figure 12).



The A-10 economies are aging much faster than the mostly developed economies where demographic transition has been slower

### Demography is changing faster than the economies

Not only does economic progress affect demographic choices, but demographics also significantly impact economic development through channels like the dependency ratio (fewer dependents – counted as young children or retired elders – per worker means there is more time to undertake economically productive work, as well as consume the income generated from it) and human development (parents with fewer children can spend more time and resources to develop them).

Asian economies have had sustained high economic growth rates for several decades and the transition from USD 3,000 per capita GDP (PPP adjusted) to USD 15,000 per capita GDP has taken or is likely to take much less time than it did for the developed nations (Figure 14). In our analysis for countries that have not reached USD 15,000 yet, we project economic growth going forward at the same annual rate as seen in the 2015–19 period. The United Kingdom covered this ground over 195 years, but other developed markets did so over 80–120 years.

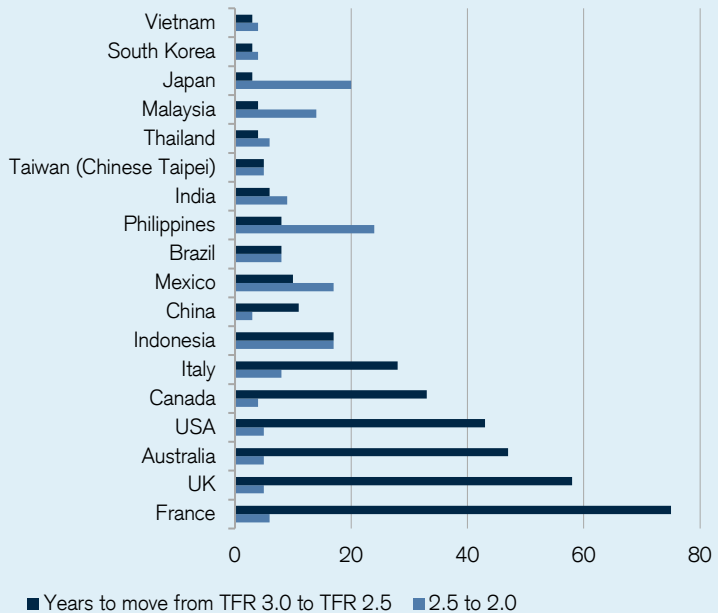
By sustaining 3%–5% per capita GDP growth rates annually, Asian economies have progressed two to three times faster than most developed markets in the last few decades. However, this is still significantly slower than the pace of demographic transition. Most of the developed world moved from a TFR of 3.0 to a TFR of 2.5 over 40–75 years, whereas Asian countries saw this transition occur in ten years or less (**Figure 15**), with only Indonesia taking 17 years to make the transition (we measure this gap as the first time a country's TFR fell below 3.0 until the last time it saw a TFR of 2.5). The post-World War II baby boom in the USA and Western Europe was a major contributor to their prolonged transition: their TFRs rose from very low pre-war levels to above 3.0 before falling steeply again.

The move from 2.5 to 2.0 in Asia has been much the same as that seen in North America and Western Europe, occurring within 5–10 years, with Japan a meaningful outlier. Japan's TFR fell sharply from 4.0 in 1950 to 3.0 in 1955 and 2.2 in 1960, but then fell below 2.0 only in 1975. Thus the factors affecting fertility spread and were adopted much faster than the pace at which economic best practices could be. This creates two challenges of slower subsequent growth and of a prematurely aging population.

## “ Having fewer children also allows parents to invest more in their children

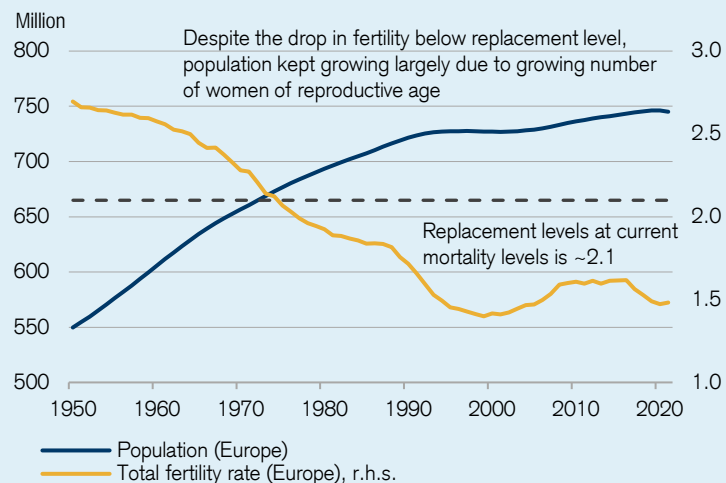
As discussed earlier in this section, populations can keep growing for a generation or so after TFRs fall as mothers of the next generation have already been born and life expectancy continues to rise (**Figure 16**). Having fewer children also allows parents to invest more in their children and investment in human capital has a strong inverse relationship with TFRs (**Figure 17**). As we will see in the second section of this report, this results in higher per capita GDP. Further, with fewer dependents, these adults also have more time to invest in productive activity, although increasing life expectancy means that old-age dependency starts rising after 20–30 years.

**Figure 15: But the progression on fertility is even faster**



Source: UN, Credit Suisse

**Figure 16: Population can grow for 20 years after the TFR drops**



Source: UN, Credit Suisse

**Figure 17: A lower TFR improves per capita human capital**



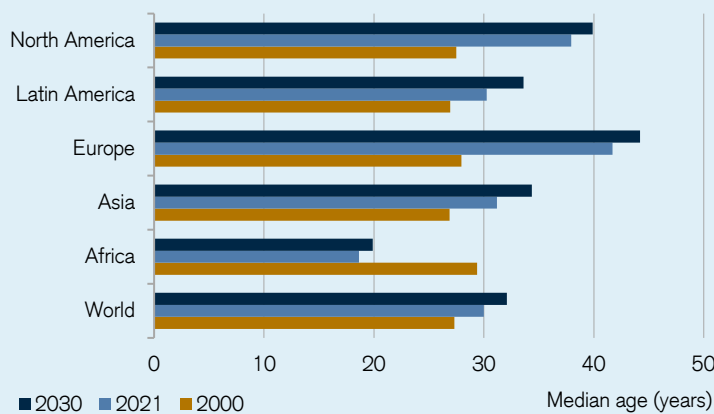
Source: NIH/European Journal of Population, Credit Suisse

**Figure 18: Asian TFRs fell below 2.5 at a much lower level of per capita GDP**



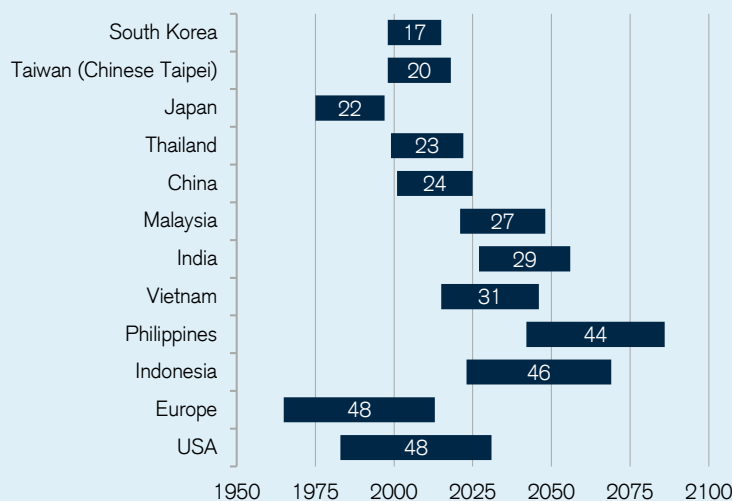
Source: UN, Penn World Tables, Credit Suisse

**Figure 19: Pace of aging between 2000 and 2021/2030**



Source: UN, Credit Suisse

**Figure 20: Time for median age to rise from 30 to 40 years**



Source: UN, Credit Suisse

Thus GDP growth tends to be high for two to three decades after the TFR falls below replacement levels (at current mortality levels this is set at 2.1).

However, the level of per capita GDP at which the TFR last fell below 2.5 in the USA was ten times that of China (Figure 18). The lower this level of per capita GDP, the higher the necessary future growth in productivity to attain developed country status. Although Japan also crossed this threshold at a low level, its fertility rate was above 2.0 for two decades (Figure 15), stretching the period of a growing workforce.

### Growing old before growing wealthy poses new risks

The second challenge of a rapid demographic transition is the pace of aging (how quickly or slowly people age). Even if mortality rates are falling slower than birth rates, life expectancy continues to improve and average ages are rising steadily across regions other than Africa (Figure 19). For all continents ex-Africa, the average age in 2030 would be 7–15 years higher than in 2000 and 2–4 years higher than in 2021.

“  
Longer lives and low fertility rates result in rapid population aging (more people living longer) in many countries

However, if birth rates fall sharply, the pace of aging accelerates, i.e. longer lives and low fertility rates result in rapid population aging (more people living longer) in many countries. Within Asia, the average age rose in just 17–20 years from 30 to 40 in South Korea and Taiwan (Chinese Taipei), and 22–24 years in Japan, Thailand and South Korea (Figure 20), whereas it would take 29–31 years in India and Vietnam, and 44–46 years in the Philippines and Indonesia. Perhaps, equally importantly, this transition has occurred in South Korea, Taiwan (Chinese Taipei) and Japan, and is imminent for Thailand and China, much sooner than it is occurring in the USA. At the other extreme, it would occur in the Philippines and Indonesia in 2070–90.

A median age of 40 is an important milestone as the average life expectancy of around 80 years in several developed markets (including some Asian ones) means that half the people are in the second half of their lives. This affects demographic factors like fertility and economic factors like demand for real estate, the ability to undertake physical work and financial risk appetite. As the demographic bulge shifts to the right on the population scale, collective behavior changes – not only regarding political preferences, but also the economy and its role in the world.

Similar to individuals saving for old age, countries with a rising share of elderly people would need a certain level of wealth to sustain their lifestyles, if necessary by importing labor and talent. This wealth creation can also reduce the burden on the younger population, which, if retirement funds are insufficient, may end up being excessively taxed so that the older population can be cared for. For example, aging populations in Europe can afford lifestyle assistance and medical care provided by foreign labor attracted to their countries by higher incomes and wealth.

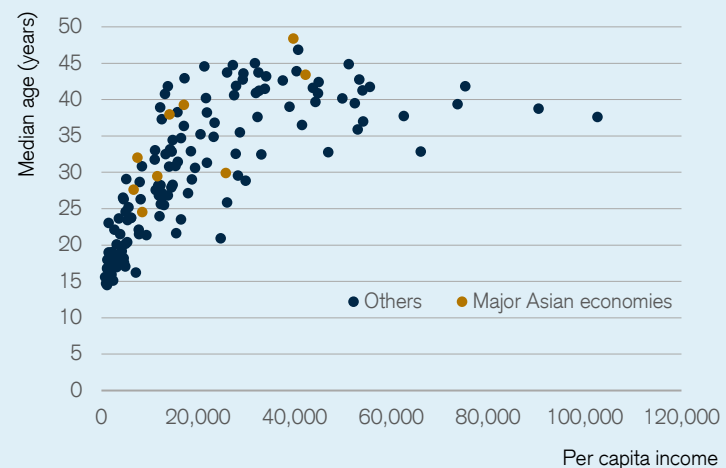
## “ The first step for wealth accumulation is income

The first step for wealth accumulation is income. We find that Asian economies are mostly on the upper end of the age-income frontier, which means that, for a set of countries with a given per capita income, their average age is among the highest (Figure 21). This is mainly because, over the decades, the curve of fertility versus average incomes has flattened progressively – from being sharply downward sloping in the 1960s (the orange dots in Figure 22), to nearly flat in the last decade (the black dots). This is what demographers call premature aging.

While income and savings are not directly related (more on this in the third chapter of this report), the inability to generate high and growing levels of income for a few decades is likely to affect the accumulation of wealth. Several Asian countries therefore rank poorly on the age versus per capita wealth score (Figure 23). This is especially the case with wealth that can cross

borders, which excludes real estate, and consists mostly of financial assets (Figure 24). Put simply, the value of a house/property only matters locally – not only can it drop if the population plunges, but high real estate prices may discourage immigrants instead of attracting them. Financial assets, on the other hand, can be used to buy goods and services from abroad. For example, there are no countries outside Eastern Europe (which also has a well-documented aging problem) that have a higher average age and a lower per capita wealth than Thailand and China. Despite Japan having high per capita wealth, just 30% of the respondents aged 24–44 in Japan in our survey felt they would be better off than their parents. A decade later Thailand may be in a similar if not worse condition in terms of consumer confidence. In other countries we surveyed, 80% or more of the respondents felt they would be better off than their parents (Figure 25).

Figure 21: 2019 – age vs. income



Source: UN, Penn World Tables, Credit Suisse

Figure 22: The TFR vs. per capita income curve is flattening



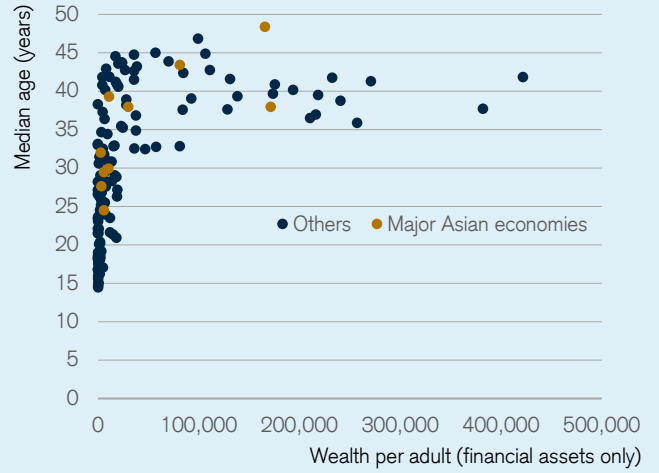
Source: UN, Penn World Tables, Credit Suisse

**Figure 23: Some A-10 economies poorer given their age (2019)**



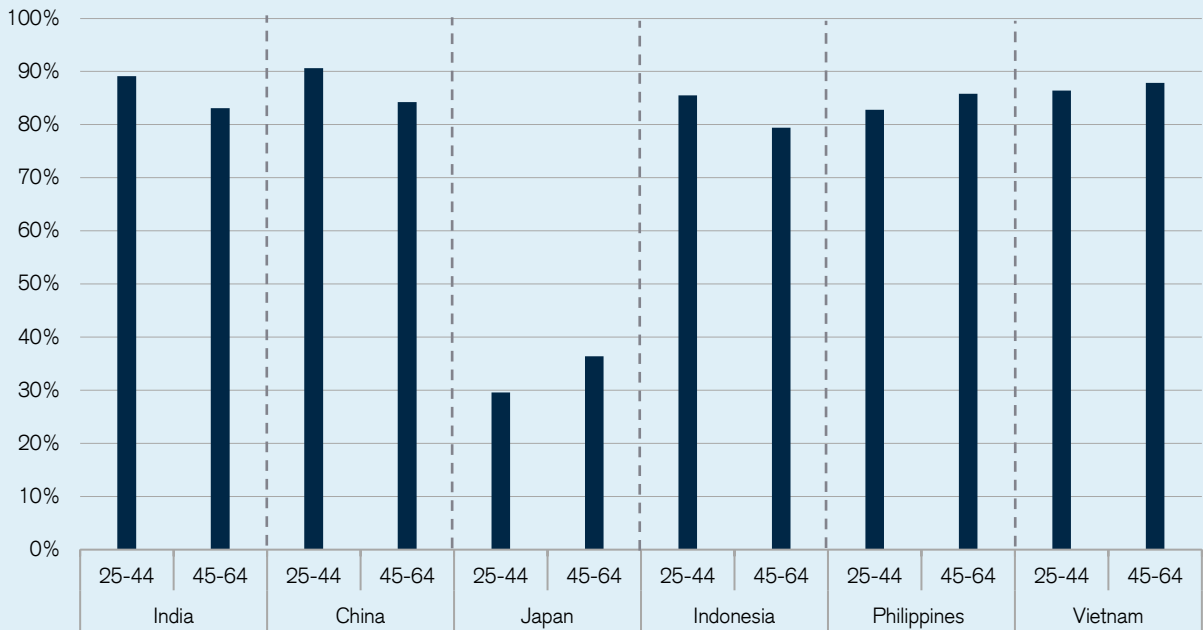
Source: Credit Suisse Global Wealth Report 2022

**Figure 24: This is more accentuated for financial assets**



Source: Credit Suisse Global Wealth Report 2022

**Figure 25: CS Survey – respondents who believe they are financially better off than their parents**



Source: CS-Nielsen Survey



Photo by somethingway, Getty Images

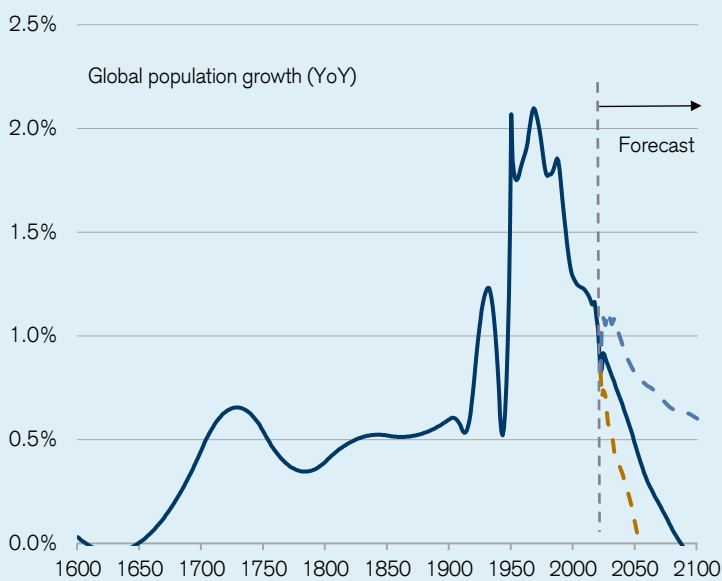


# Productivity matters more than headcount

Neelkanth Mishra, Prateek Ancha, Abhay Khaitan

Will the anticipated drop in working-age population in Asia reverse the low average inflation the world has seen over the past two decades and drive another disruptive shift in global manufacturing supply chains? In this chapter, we assess the key moving parts. We find that workforce availability should not be challenging for the next ten years. Rising participation ratios and improving human capital (lower fertility often means physically stronger children with more years of schooling) can also offset the drop in headcount.

**Figure 1: Global population growth slowing**



Source: HYDE, UN Population Division estimates, Credit Suisse

Not only does Asia account for nearly 60% of humanity, it also dominates global goods value chains. The ten economies we cover: China, India, Indonesia, Japan, Philippines, Vietnam, Thailand, Malaysia, Korea, and Taiwan (Chinese Taipei) accounted for a third of global goods trade in 2021, and nearly 60% of incremental global trade over the past decade<sup>1</sup>. Their share of non-commodities or the manufacturing trade is even higher. Integration of the Asian workforce in the global economy (mainly after China's ascension to the World Trade Organization in 2001) has been a transformative development for the entire world.

## Global population set to keep growing at least until 2050

The surge in human population growth after World War II has begun to decelerate and forecasts from the United Nations Population Division (UNPD) in the World Population Prospects 2022 (WPP)<sup>2</sup> suggest a continued slowdown in growth until the end of the century (Figure 1).

We note, however, that these projections have significant uncertainty<sup>3</sup>. While the United Nations makes three projections with different assumptions, its middle or medium scenario is the most often cited, where global population peaks at 10.4 billion

1. International Trade Centre (ITC) and UN Comtrade

2. <https://population.un.org/wpp/>  
DefinitionOfProjectionScenarios

3. How far will global population rise? Researchers can't agree (nature.com)

people in 2086, ending the century at 10.3 billion. In its low scenario, the peak occurs in 2053 at a level not much above the current world population at 8.9 billion. In the high scenario, on the other hand, global population continues growing well into the next century, reaching 14.8 billion by 2100 (Figure 2).

As with most forecasts, there is significantly less uncertainty in the near term, with the range for 2030 in a narrow band of 8.4–8.7 billion people. This is because the mothers who will have children in the coming decade have already been born, and both fertility and life expectancy change slowly. On the other hand, when forecasting for 2050, the uncertainty is not just in the number of children mothers will have, but also in the number of mothers. For 2100, this becomes compounded several times, driving the wide range of projections, from seven billion to nearly 15 billion. For most of the analysis in this report, we focus on WPP estimates for 2030–35, not just because decision-making horizons for many readers are unlikely to go beyond a decade, but also due to the significantly lower uncertainty about the projections themselves.

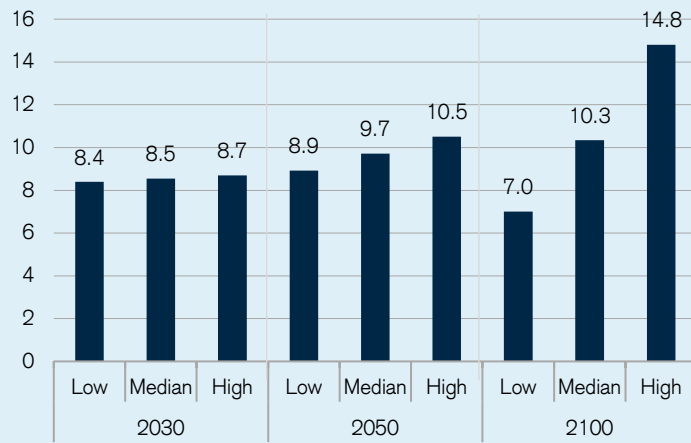
### Asia’s share of incremental global workforce shrinking

Through the 19th and the first half of the 20th centuries, owing to rapid population growth in Europe and North America, Asia’s share of global population declined from 69% in 1800 to 56% in 1950. Its share then rebounded, rising to 61% by 2000 (Figure 3). Thereafter, owing to rapid growth in Africa, its share is now down to 59% and is forecast to fall to 58% by 2030. However, for the foreseeable future, Asia will continue to house more than half of humanity.

## “ Population affects both demand and supply of goods and services

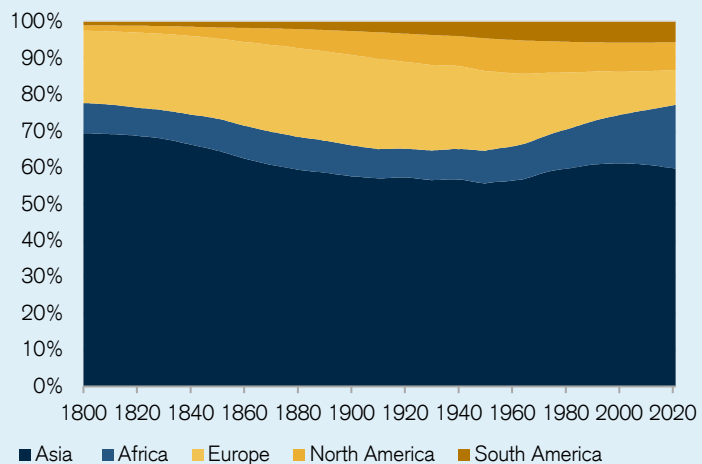
Population affects both demand and supply of goods and services. With strong growth in per capita income, Asia has become a very large source of global demand for commodities as well as finished goods and services, and the impact of

**Figure 2: Probable range of population widens after 2035**



Source: UN Population Division estimates, Credit Suisse

**Figure 3: Asia’s share of world population still above 50%**



Source: HYDE, UN Population Division estimates, Credit Suisse

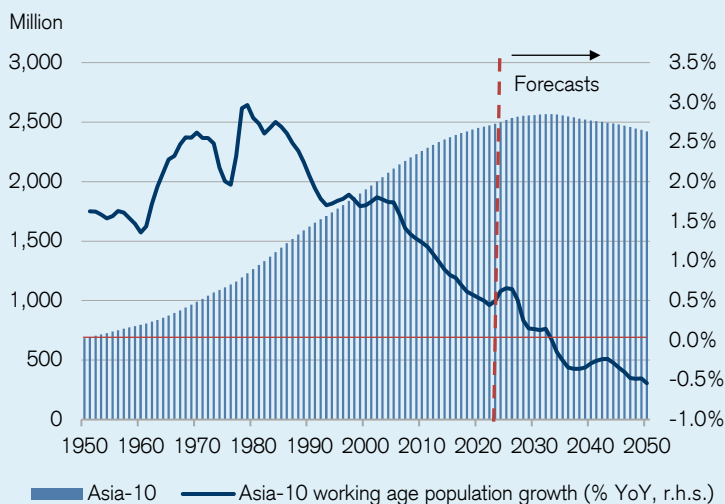
**Figure 4: Working-age population rising in less open nations**

Change in working-age population, 2030 vs. 2021, (m)



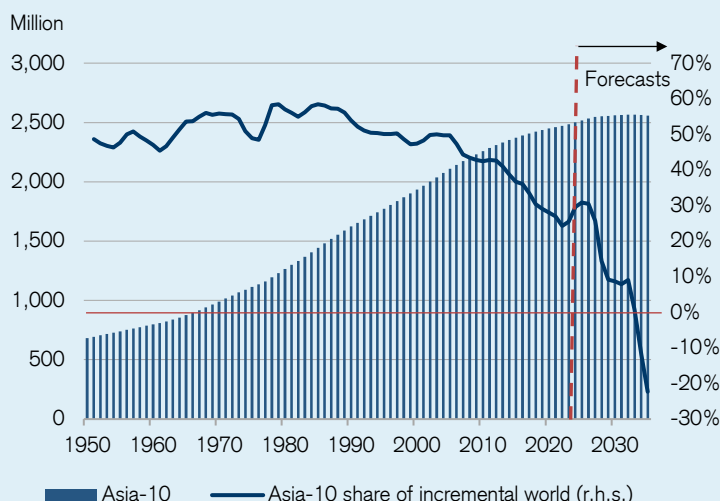
Source: UN Population Division estimates, Legatum Institute, Credit Suisse

**Figure 5: A-10 working-age population growth slowing sharply**



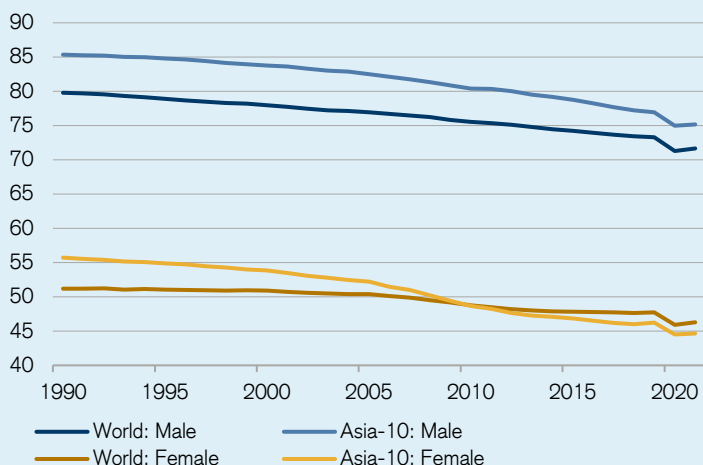
Source: UN Population Division estimates, Credit Suisse

**Figure 6: A-10 incremental global share negative after 2032**



Source: UN Population Division estimates, Credit Suisse

**Figure 7: Asian participation rates already higher than global rates**



Source: ILO, Credit Suisse

aging on this demand can be substantial. In this report, however, we focus on supply-side issues emerging from Asian demographic shifts. Asian manufacturing has dominated global supply chains for several decades and even more so after China joined the World Trade Organization (WTO). Over the next decade, the working-age population is set to decline in several Asian countries that dominate global manufacturing.

While the working-age population will likely grow meaningfully in several large economies like Nigeria, Pakistan, Egypt and Afghanistan, these countries rank poorly on economic openness (Figure 4). They are not yet well integrated into global value chains and still have unstable polity. While this can change in the coming years, it is difficult to determine at this time. Each of the ten major Asian economies we call the A-10, i.e. China, India, Japan, Indonesia, Vietnam, Philippines, South Korea, Thailand, Malaysia and Taiwan (Chinese Taipei) has a rank of less than 100 and is meaningful in size.

Trends diverge among the A-10: India, Indonesia, Philippines and Malaysia have an expected compound annual growth rate (CAGR) of 0.9%–1.6% and Vietnam should remain stable (CAGR 0.4%). However, the workforce in China, Japan, Thailand, South Korea, and Taiwan (Chinese Taipei) is expected to shrink at 0.2%–1.0% CAGR. We will also explore these country-specific trends in this report, but, for the group as a whole, growth in working-age populations began slowing sharply from very high levels after 2005 and is expected to start declining after 2032 (Figure 5). From making up nearly half of the incremental global workforce every year until 2010 for several decades, the A-10's share has already dropped to a quarter and is likely to turn negative after 2032 (Figure 6).

Not only will this impact growth outlook for the A-10, but it can also have a material impact on global inflation, as well as the neutral real rate, i.e. the interest rate consistent with stable inflation, even in developed markets. But sounding the alarm based on population trends alone would be too simplistic. For example, the number of workers is not the same as working-age population, and workers have differing physical and mental capabilities, as well as work preferences.

**Falling participation ratios**

The labor force participation rate (LFPR) is defined as the number of workers per working-age population and, for both men and women in the A-10, the rates are higher than that of the world on average (Figure 7). However, they have also been declining for the last three decades. The International Labour Organization

(ILO) forecasts a continued decline until 2030, partly due to greater educational participation, as people in schools and colleges mostly cannot be workers. Within the A-10, the decline in the male LFPR is similar to elsewhere, but the female LFPR has risen for some countries, explaining some of the variance in the overall LFPR (**Figure 8**).

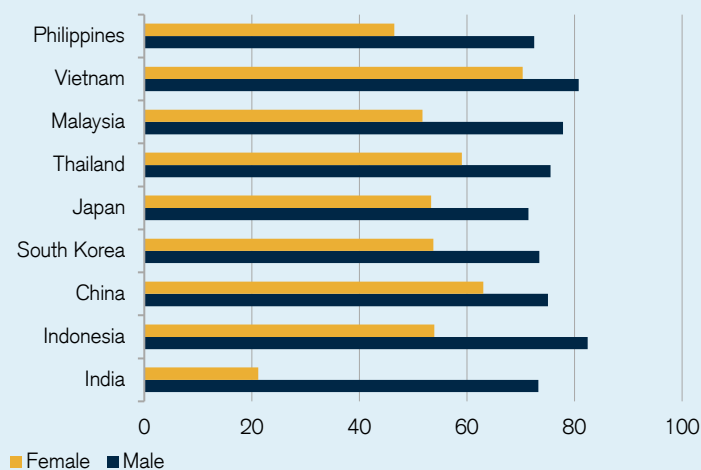
There are also some definitional issues. For example, India's very low female LFPR could be due to different standards of surveys used in India. Further, in economies with high informality, workers sometimes do multiple jobs during a year, as also emerged in our survey, making data interpretation particularly challenging. For example, in nearly every A-10 country, the LFPRs are higher for both genders in rural areas than in urban areas, likely reflecting different types of work.

## “ People in schools and colleges mostly cannot be workers

The decision to participate in the workforce is also a complex one. For example, the share of men in the 25–54 age group in the USA who have dropped out of the workforce has been rising steadily for half a century and is now nearly 12% (**Figure 9**). On the other hand, the LFPR in the 55–64 age group has increased sharply across aging societies (**Figure 10**). Whether this is due to underfunded pensions, better health conditions, the changing nature of work or simply a shortage of workers is difficult to say. The sharp drop in India's female LFPR might also be attributed to improved household incomes freeing up women for childcare and allowing them to step away from unhealthy working conditions.

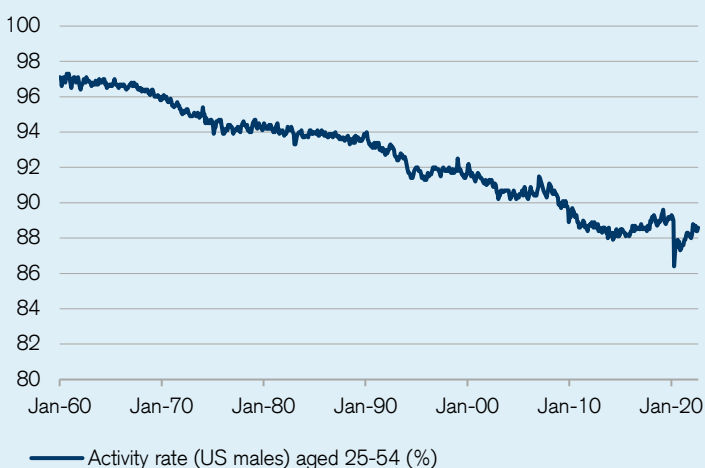
The post-COVID dip in LFPRs, currently the topic of much debate in the USA, is visible in Asia too. A drop in LFPRs due to education is likely to be productive on average, as a few years of education can mean several decades of more productive work later. However, there are non-educational factors such as cultural attitudes, values and preferences that can burden workforce availability and exacerbate demographic pressures. Addressing these factors, as has happened somewhat successfully in Japan with the rise in female LFPR, can address workforce shortages.

**Figure 8: Significant variation in LFPRs among the A-10 nations**



Source: ILO, Credit Suisse

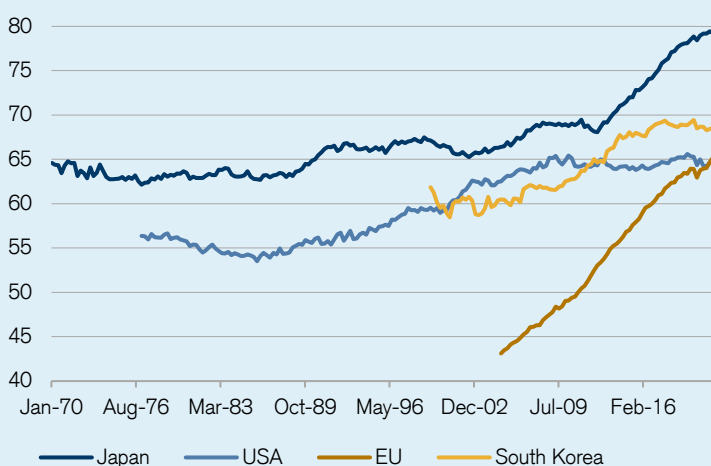
**Figure 9: US men in prime working age leaving workforce**



Source: FRED, Credit Suisse

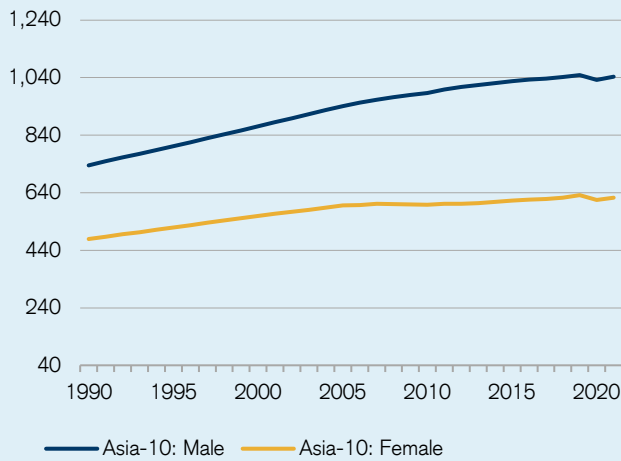
**Figure 10: Aging populations now working longer**

Activity rate for all persons aged 55–64



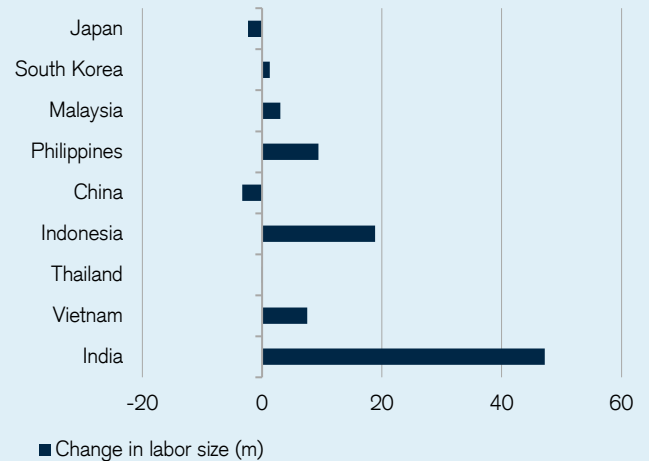
Source: FRED, Credit Suisse

**Figure 11: Workforce trends in A-10, by gender, over the last 30 years (m)**



Source: ILO, Credit Suisse

**Figure 12: Size of workforce set to rise mostly in India, Indonesia and the Philippines (2019–30)**



Source: ILO, Credit Suisse estimates

Annual growth in the number of workers in the A-10 has slowed rapidly, falling from 1.7% in the 1990s to 1.1% in the 2000s, and just 0.5% between 2010 and 2020. It may reach near-zero in the coming decade, given slowing growth in working-age population and falling LFPRs (Figure 11). Strong growth in India, Indonesia and the Philippines is offset by a fall in China (Figure 12).

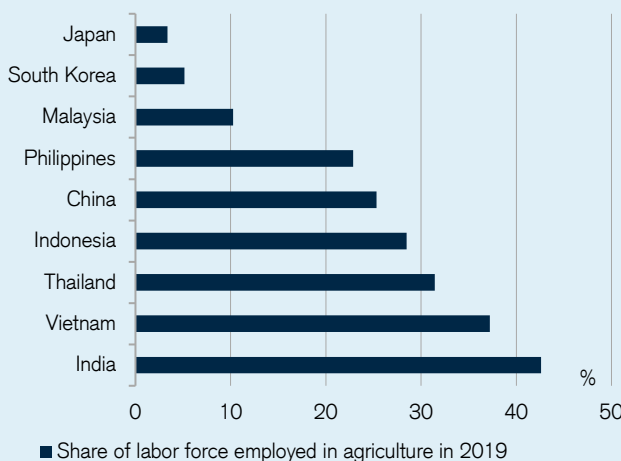
As the A-10 accounts for 40%-plus of global workers and a number of countries with a growing number of workers are less politically stable and economically open, can this slowdown affect the global economy? Let us now peel away a few more layers.

### The shift from agriculture

Twenty-eight percent of the A-10 workforce is still deployed in agriculture (Figure 13); whereas this percentage is negligible in Japan and South Korea and only 10% in Malaysia, it is 20%–40% in other populous countries.

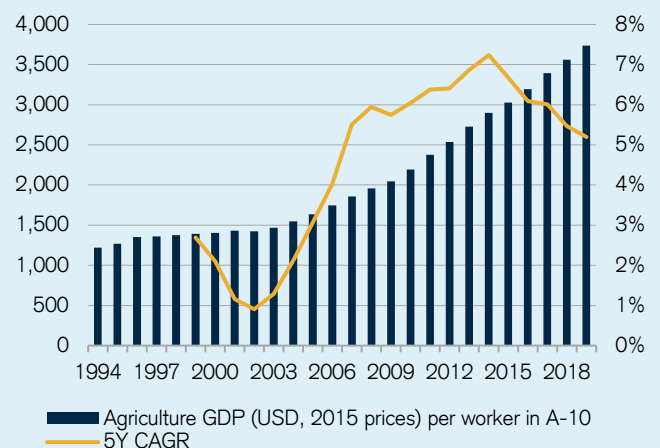
Agricultural output per worker in the A-10 has grown at 5%-plus annually for nearly two decades (Figure 14). Demand growth, on the other hand, is slowing with population growth, and falling per capita calorie demand (older population and more automation). Thus, these economies need fewer workers in agriculture. Ideally, such analysis should incorporate global productivity shifts rather than just Asian productivity, given that food is traded.

**Figure 13: Agriculture still a large part of A-10 workforce**



Source: OECD, Credit Suisse

**Figure 14: Agricultural output per worker in the A-10 growing at 5% p.a.**



Source: World Bank, Credit Suisse

However, global food trade has significant non-tariff barriers, and Asian food output (except palm oil from Indonesia and Malaysia, and some grains/fish from India) is mostly for domestic consumption. That said, growth in Chinese agricultural productivity is important to support domestic food security/improve self-sufficiency.

While moving individuals from agriculture into the industrial or services sectors is hard from a skills perspective, the pace of transition,  $-2.3\%$  a year from 2003 to 2019, (Figure 15) is not much faster than just the retirement of existing agricultural workers (this implies a 44-year working life), with new workers choosing to be in industry or services. However, as economies grow more prosperous, strong demand for labor for services is a threat to industrial labor availability.

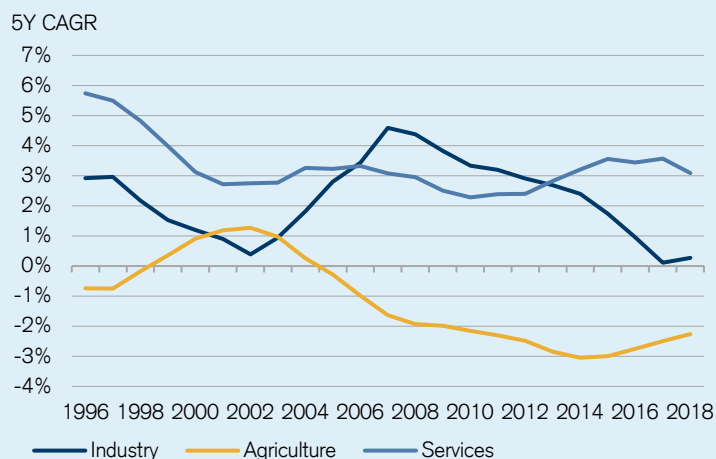
## “ Strong demand for labor for services is a threat to industrial labor availability

The transition from agriculture to industry or services, and even from industry to services is broadly positive for productivity growth within economies. However, could the near-zero growth in availability of industrial labor over the coming decade be disruptive for the global economy? After all, while much of agriculture and services are largely local, and immigration is at a much smaller scale (more on this later in this chapter), manufacturing goods are more tradeable.

### Quality of the workforce matters as much as quantity

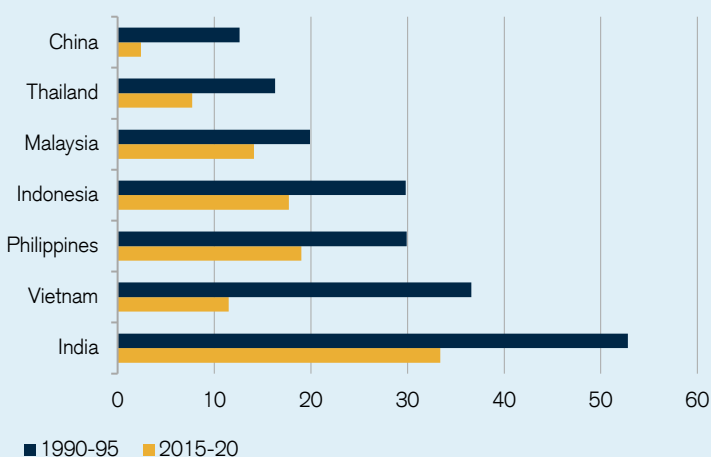
More important than the total number of workers is the quality of those workers. As seen in the first chapter, parents with fewer children also have the time and resources to invest more in their development. This not only affects their average level of education, but also their physical development. The prevalence of underweight children has fallen meaningfully across countries in Asia (Figure 16). For India, Indonesia and the Philippines, we believe the still-high levels of malnutrition and stunted growth in children are a policy challenge that these countries must

**Figure 15: Based on past trends, non-farm workforce expected to grow**



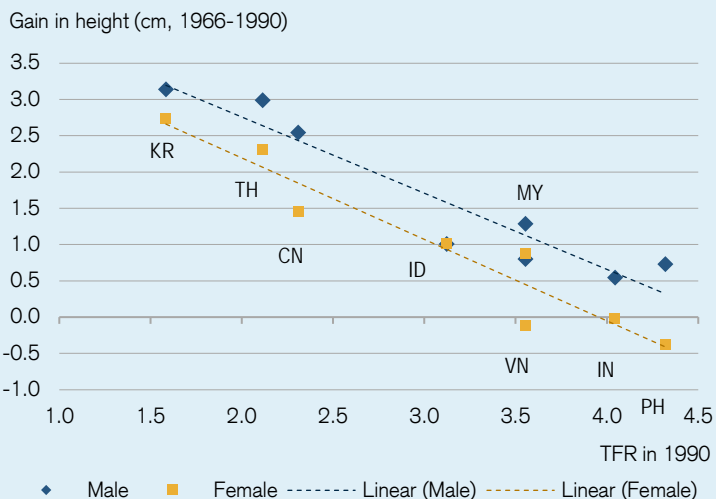
Source: ILO, Credit Suisse

**Figure 16: Falling prevalence of underweight children**



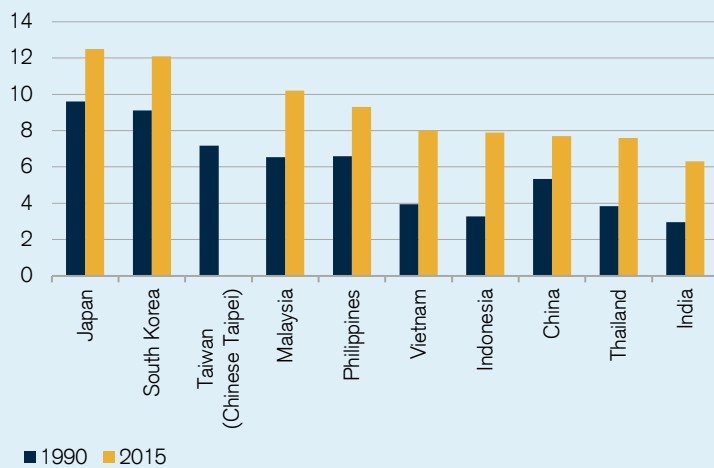
Source: UNICEF, Credit Suisse

**Figure 17: Falling fertility versus gains in height**



Source: UNICEF, UNPD, Credit Suisse

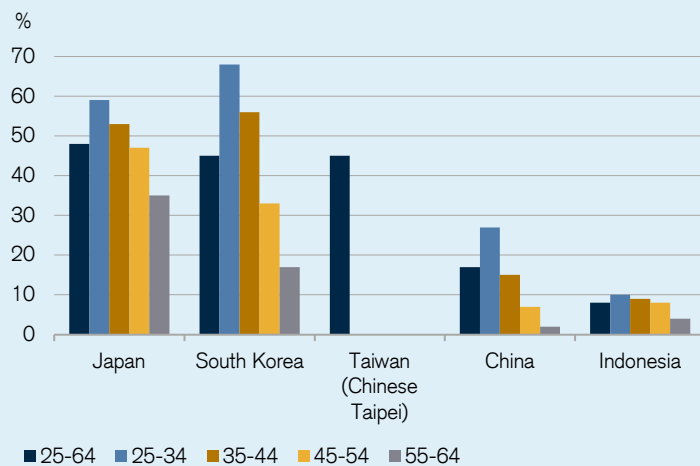
**Figure 18: Average number of years of education**



Source: Lee-Lee (2016), Barro-Lee (2018) and UNDP (2018), Credit Suisse

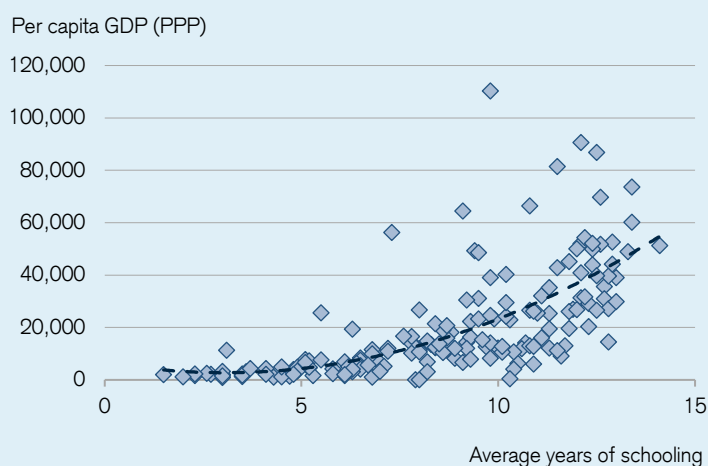
**Figure 19: Younger cohorts are better educated**

Tertiary education attainment by age group



Source: Lee-Lee (2016), Barro-Lee (2018) and UNDP (2018), Credit Suisse

**Figure 20: Years of education correlated with output**



Source: UN Population Division, Credit Suisse

address urgently. However, even based on the improvement seen so far, the physical abilities of the workforce a decade from now are likely to be substantially better than that of previous generations. While the improvement in child nutrition depends on government interventions, there is also a direct correlation between fertility rates and health indicators. The improvement in height between people born in 1966 and those born in 1990 appears to be inversely correlated with the prevalent TFR in 1990 for both males and females (**Figure 17**). We chose a 24-year gap as a proxy for the average age of the mother when she has her first child and are using average height as an important indicator of population health, with a strong link to life expectancy.

In countries like South Korea, Thailand and China, where TFRs fell much earlier than in other countries, the improvement in height has been much more significant. The current generation of workers are therefore physically more capable than the workers that joined earlier and are likely to retire over the next decade. Further, better early-childhood nutrition also affects mental development, adding to government efforts across countries to improve educational attainment. Average years of schooling have risen substantially across the region by 3–5 years, with the most improvement seen in Indonesia and Vietnam (**Figure 18**). And we observe a stronger trend in educational levels for younger cohorts, which are materially better, driven by both government efforts as well as the ability and willingness of parents with fewer children to invest more in their education (**Figure 19**).

Thus, in 2018, 27% of 25–34-year-olds in China had a graduate degree versus just 2% of the 55–64-year-olds and 7% of the 45–54-year-olds. In India, nearly 30% of adult males had completed high school in 2016 versus 20% in 2006 (22% and 12% for females, respectively).

### Education affects output, duration of work and fertility

The number of years of education correlates strongly with per capita GDP. The parabolic nature of the trend line in **Figure 20** is probably because causality is bidirectional: a more educated person is capable of learning more sophisticated skills that deliver more value, and conversely, richer economies can afford to invest more in their children.

Several factors can drive the increase in output per worker. To start with, LFPRs rise with education (**Figure 21**), also suggesting that the drop in aggregate LFPR in Asia is due to more time spent on education and is not due to workers dropping out of the workforce due to socio-cultural factors. This trend is very

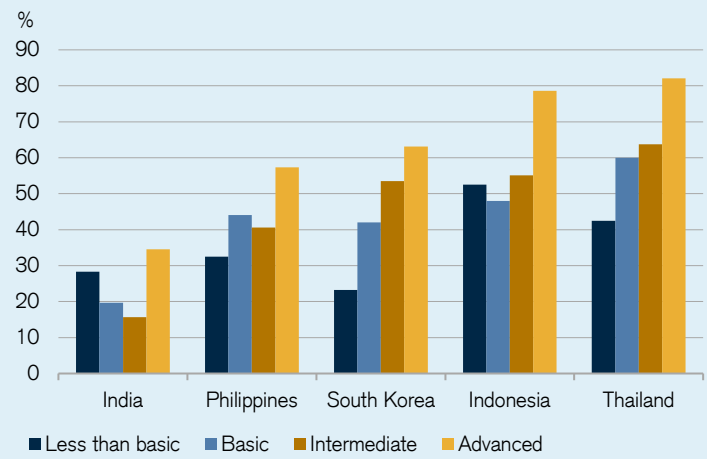
clear for women across the A-10 countries: female literacy inversely affects fertility, thus reducing time spent on childcare, which is mostly done by women.

Higher education levels in developed economies like the USA have also been observed to drive a longer working life (Figure 22); such data is unavailable for Asian economies, but the trends should be similar. This may be because more educated workers tend to take up jobs that are less physically demanding. Since physical abilities deteriorate long before mental abilities as people age, jobs involving less physical effort can further expand the average working life for an individual. In our survey, we found a pattern where, the older the cohort, the greater is the expected age of retirement (Figure 23). While this trend could also be due to factors like a lack of savings, the ability to work for longer is likely to be a factor too.

## “ The number of years of education correlates strongly with per capita GDP

While higher education levels and the ability to work for longer drive the quantity of labor input (more people working for more years), it also increases output per unit of time spent. While it may be tempting to conclude that this would mean higher earnings per hour worked, it is important to remember that wages and value-added are not correlated (see the example of taxi drivers in India later in this chapter). Whether the value added is captured by the firm or the worker depends on the demand-supply balance for labor. Given that human capital is much less mobile than physical goods, if a certain skillset is more easily available locally, labor may lose bargaining power and more of the value added may accrue to the employer, raising the capital share of income. Some researchers have attributed at least part of the lower income for women to such factors.

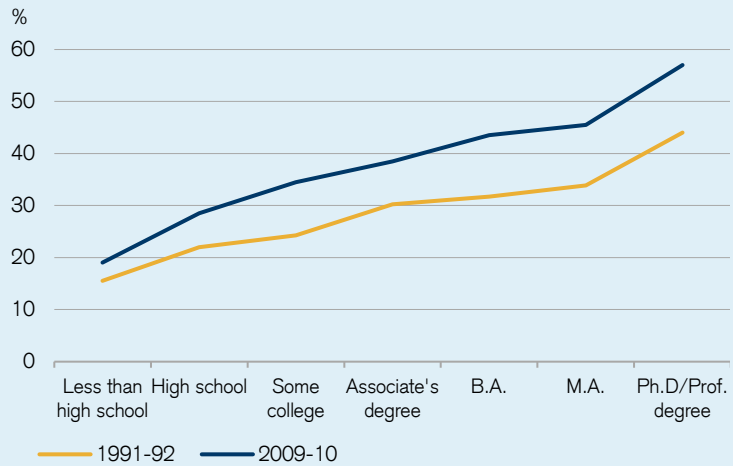
**Figure 21: LFPRs rise with education, more so for women**



Source: ILO, Credit Suisse

**Figure 22: Educated people in the USA work for longer**

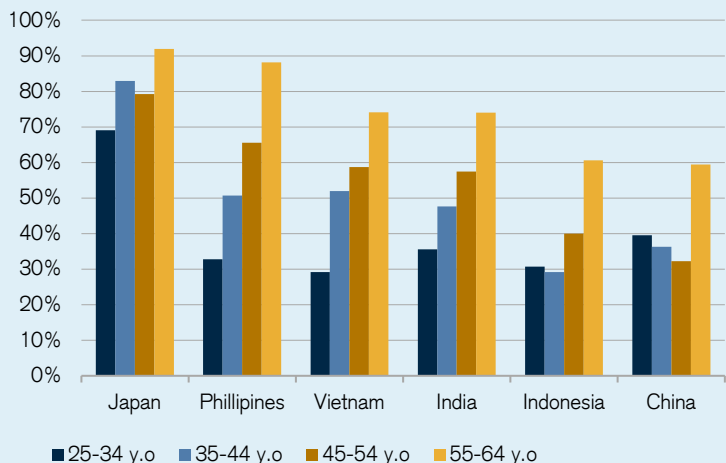
Labor force participation rate for persons aged 62–74



Source: Brookings Studies, Credit Suisse

**Figure 23: CS Survey – rising age of retirement in older cohorts**

Proportion of people in each age group who say they will retire only after they are 60 years old

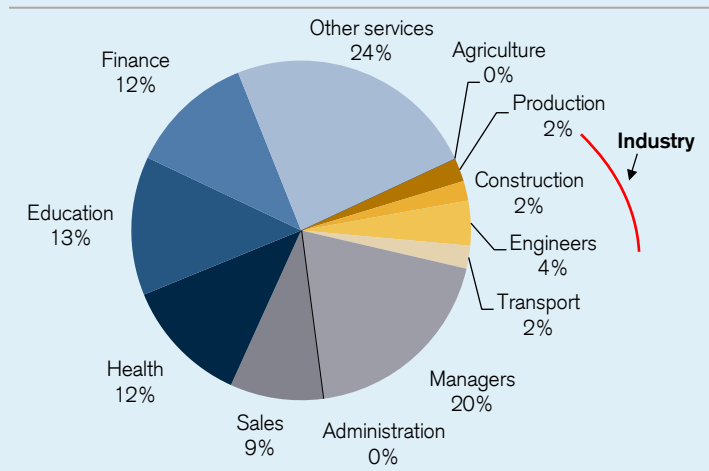


Source: CS-Nielsen Survey



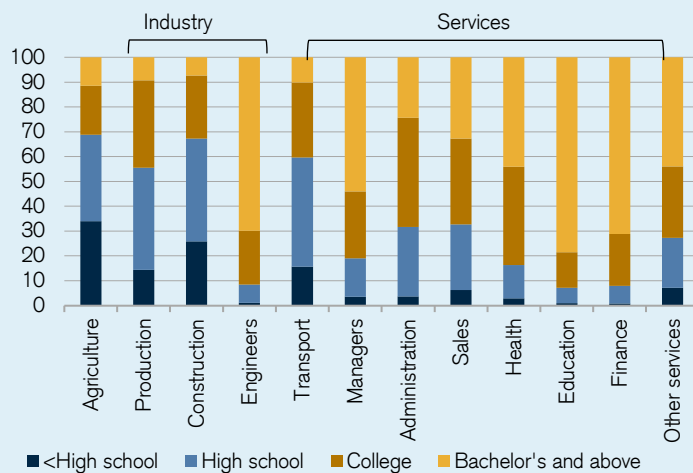
**Figure 24: 92% of US graduates work in services**

Split of occupations for those with bachelor's degrees and above



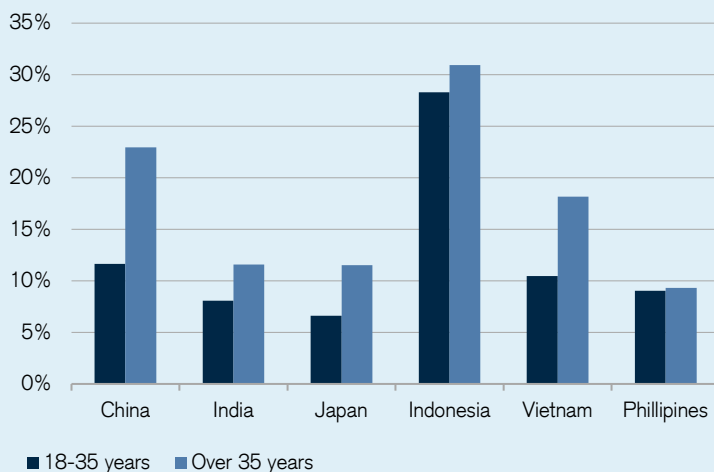
Source: US Bureau of Labour Statistics, Credit Suisse

**Figure 25: US share of graduates high in high-value activities**



Source: US Bureau of Labour Statistics, Credit Suisse

**Figure 26: CS Survey – share of respondents who prefer to work in a factory/construction site (by age cohort)**



Source: CS-Nielsen Survey

## More education shifts the workforce toward services

As individuals become more educated, there is less likelihood of them working in agriculture or industry and more likelihood of them working in services. Comprehensive data on this front is available only in the USA, but we believe these trends apply to other countries too, including in Asia.

According to the US Bureau of Labor Statistics, as many as 92% of graduates in the USA work in services (Figure 24), less than 8% of graduates work in industry and a mere 0.2% in agriculture. Seen from another perspective, whereas graduates make up 10% or less of the workers in agriculture, production and construction, they make up 37% of the overall workforce and account for 43% of the services workforce.

Within services, segments like transport (mostly truck drivers and port and warehouse workers), administration and sales have a lower proportion of graduates (Figure 25). Similarly, there are some types of manufacturing, e.g. semiconductor fabrication or robot manufacturing, which require higher levels of education. From these trends, it is reasonable to expect that, as the A-10 workforce continues to progress educationally, the workforce will continue to gravitate toward services. In particular, the propensity to work in construction or factories would be lower. This trend would be stronger in countries with maturing demographics like China, Japan and South Korea.

## A generational shift in preference for work in services

Social and personal preferences can overshadow immediate economic incentives (as measured by wages) when influencing the supply of people available to do various jobs. Some of these could be longer-term economic expectations (like a legal intern choosing to work for a low salary in expectation of a higher-paying position), some could relate to social status (e.g. a taxi driver in Mumbai ten years ago earned more income post-tax/deductions than an entry-level engineer in an Indian IT services major), and others relate to personal convictions (e.g. pursuing a specific interest).

The higher pay for Mumbai taxi drivers was less due to taxi driving requiring more complex skills and more because of an oversupply of engineers choosing a career in software. This also did not lead to software engineers applying en masse for taxi permits. The steady decline in the share of prime-age working men in the US workforce is also being attributed to social factors. These preferences affect relative wages for various sectors in the economy. The social context and income uncertainty that the generation of people born in the 1970s and 1980s

in most of the A-10 countries faced, except for Japan, South Korea and Taiwan (Chinese Taipei) was very different from that seen by people born in the 1990s or thereafter.

In our survey, we find that the share of respondents who prefer to work in a factory or a construction site is much lower in the 18–35 age group than in the over-35 age group (Figure 26). The gap is much wider in China and Vietnam than it is in India, Indonesia and the Philippines, perhaps reflecting the younger demographic, but perhaps also due to older generations not having much opportunity to work in factories.

The share of people who have migrated for work also rises by age (Figure 27), implying that prior generations were more mobile. Factory work tends to be more concentrated given the need to have economies of scale at one geographical location and the advantages of a supply-chain ecosystem close by. This is less necessary in services, where offices can be more spread out, and several services can only be delivered in person, necessitating being closer to the consumer. The finding for China is a bit surprising but may be explained by how respondents interpreted the China’s household registration (hukou) system: it restricts access to public schools to migrants’ children without local city hukou.

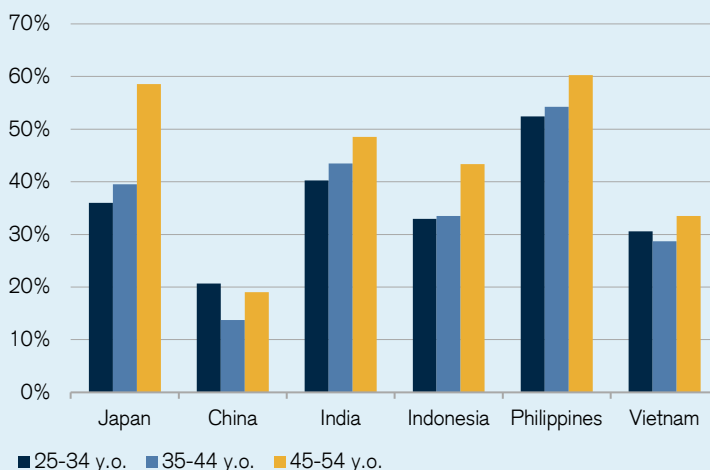
We must highlight that this preference for office work/work-from-home and lower propensity to migrate for work is not a reflection of the willingness to work hard: the survey does not show a noticeable difference in number of hours worked every week by various age cohorts.

### Demand for labor in services may grow at 1.8% p.a.

In the decade preceding COVID (i.e. 2010–19), growth in nominal services GDP was faster than the growth in overall GDP for most of the economies in our study (Figure 28). This is normal in developing economies, which tend to grow faster. As they grow more prosperous, their ability to spend on more expensive services improves. Once the share of services in the economy becomes high, not only does overall growth slow down, but the share of services by then is also high enough to be the primary driver of GDP growth.

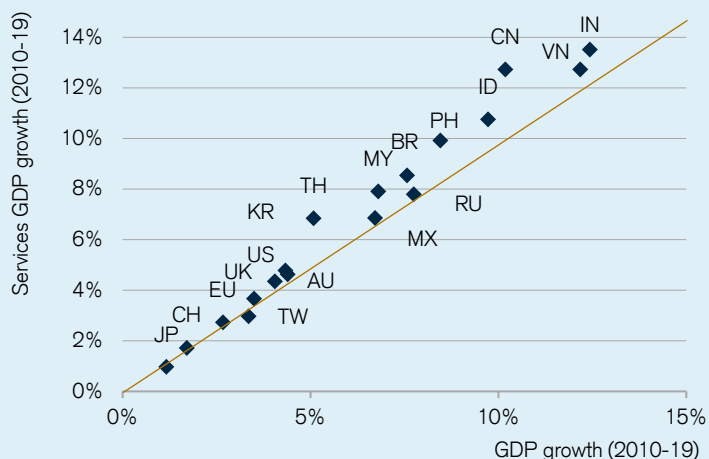
In US dollar terms, the nominal value of services GDP for the A-10 economies at then prevalent exchange rates grew an average of 7% p.a. starting 2011 to USD 15 trillion by 2019 (Figure 29). If we assume 6% growth until 2030 (the slower rate building in some lost time because of COVID disruptions as well as a normal slowing of economic growth as

**Figure 27: CS Survey – more older cohorts migrated for work**  
% of people who migrated for work to a city (by age cohort)



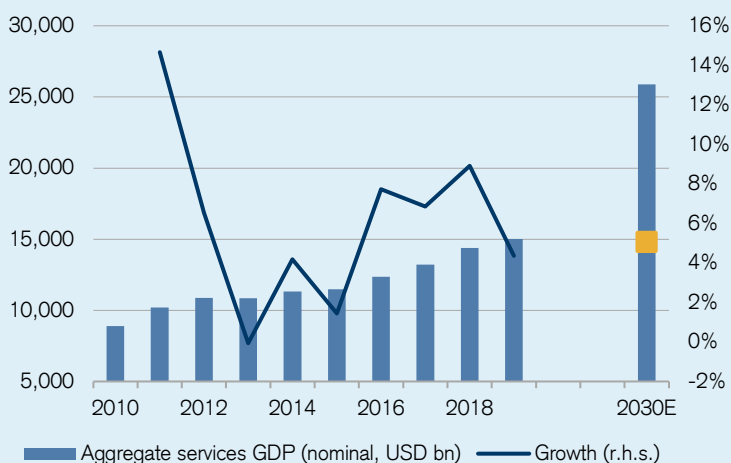
Source: CS-Nielsen Survey

**Figure 28: Share of services growing in most Asian economies**



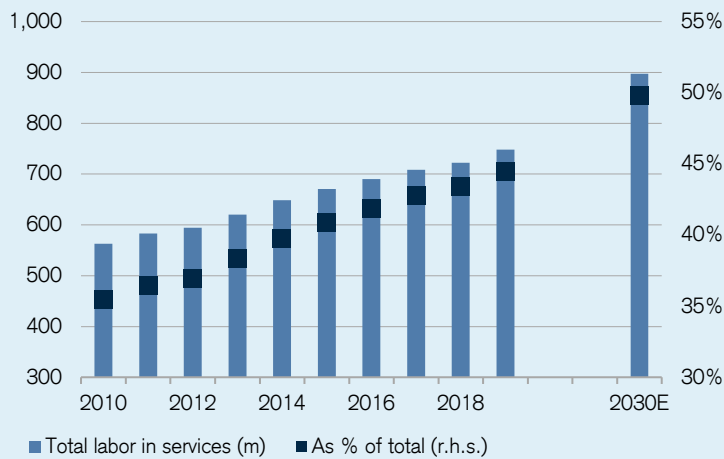
Source: World Bank, Credit Suisse

**Figure 29: A-10 services demand to reach USD 26 trn by 2030**



Source: World Bank, Credit Suisse estimates

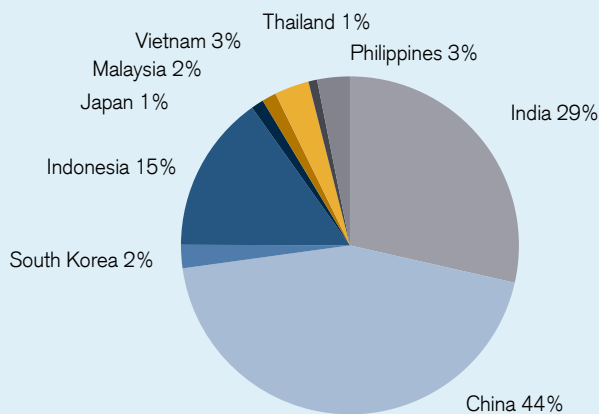
**Figure 30: A-10 would need 160 million more workers in services**



Source: ILO estimates, Credit Suisse estimates

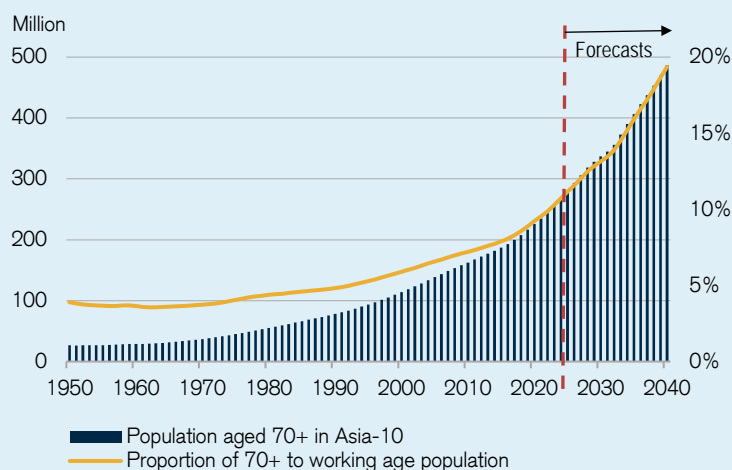
**Figure 31: Much of the growth expected to be in India, China and Indonesia**

Split of incremental services workforce



Source: ILO estimates, Credit Suisse estimates

**Figure 32: Dementia not at risk of being a burden until 2030**



Source: UN Population Division, Credit Suisse

economies grow over time), the combined services GDP of this set of countries would reach around USD 26 trillion.

Assuming unchanged growth in labor productivity in services, demand for labor in the services sector in the A-10 economies would grow at 1.8% a year to around 900 million workers by 2030 (Figure 30).



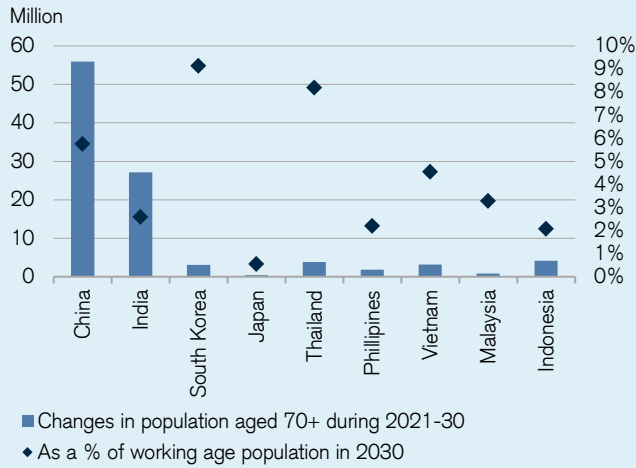
**Assuming unchanged growth in labor productivity in services, demand for labor in services sector in the A-10 economies would grow at 1.8% a year to around 900 million workers by 2030**

**Healthcare in an aging population – the case of dementia**

Some researchers in demographics have been understandably concerned about the growth in demand for healthcare in an aging population, particularly of the type that is hard to automate, such as the care needed for the growing numbers of people with dementia. The main concern here is that some of these pressures may show up suddenly. For example, the classic “4-2-1” problem for China (four grandparents, two parents, and just one adult to take care of them) would intensify dramatically as the last pre-One-Child-Policy (OCP) generation ages.

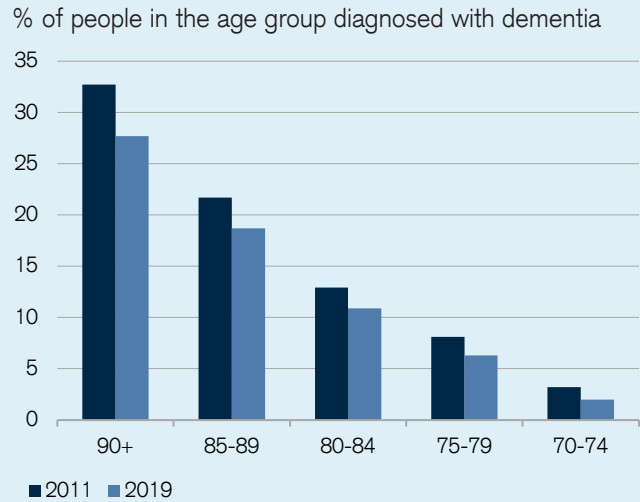
In our view, this will not be a major concern until 2030, as the ratio of the 70-plus population in A-10 countries to the working-age population would rise from the current 10% to 13%. However, it could worsen materially in the decade that follows if the ratio crosses 20% rapidly (Figure 32). Among the A-10 countries, the increase in numbers until 2030 is substantial in China and India, but the increase as a share of workforce should be manageable, except in South Korea, Thailand and Taiwan (Chinese Taipei), see Figure 33.

**Figure 33: By 2030, dementia risk higher in South Korea and Thailand**



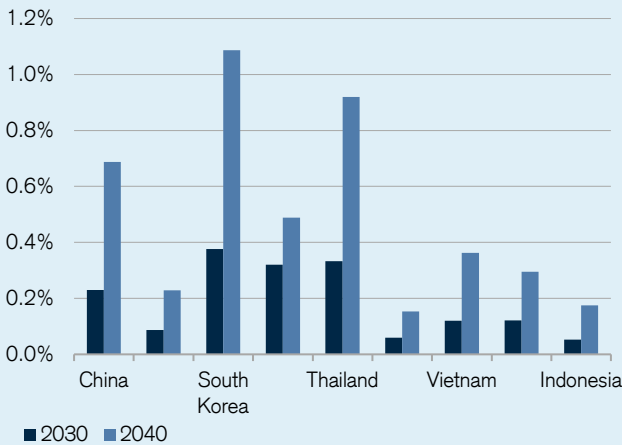
Source: UN Population Division, Credit Suisse

**Figure 34: Dementia incidence falling across age groups (USA)**



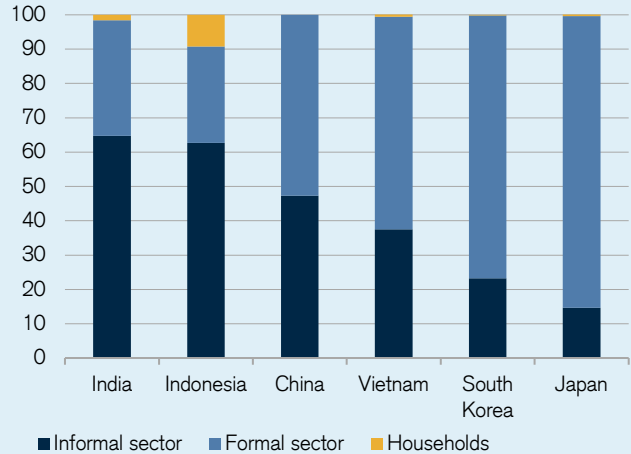
Source: Freedman VA, Cornman JC, Kasper JD. 2021

**Figure 35: Estimated additional demand for workers 2030 vs. 2040 (% of working-age population)**



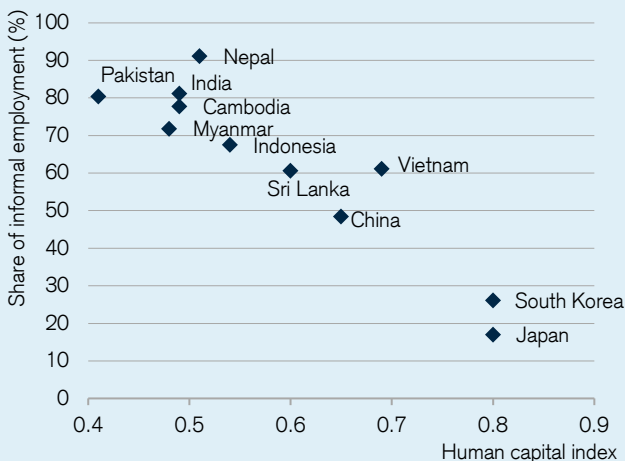
Source: UN Population Division, Credit Suisse estimates

**Figure 36: Non-agricultural employment: High share in informal sector gives scope to catch up**



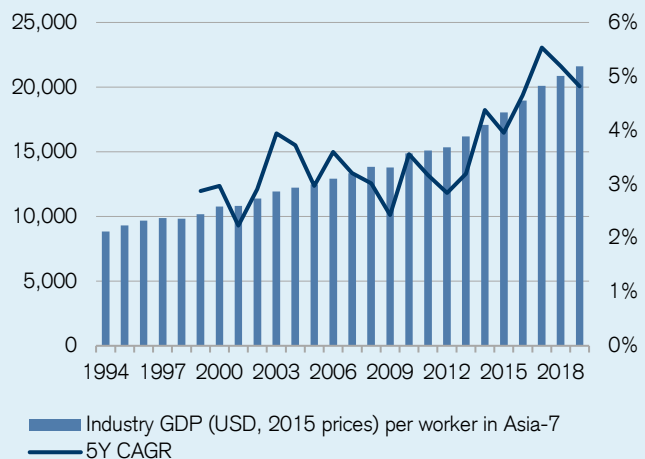
Source: ILO, Credit Suisse

**Figure 37: Lower levels of education are correlated with a high share of informal employment**



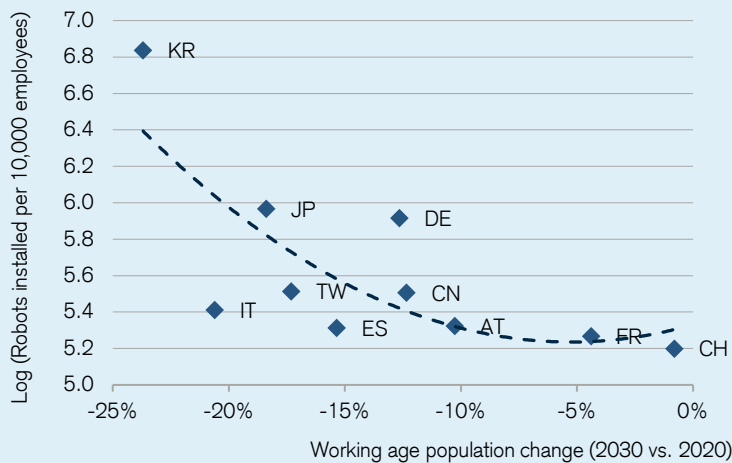
Source: ILO, World Bank, Credit Suisse

**Figure 38: Industrial output per worker growing 3%–5% p.a.**



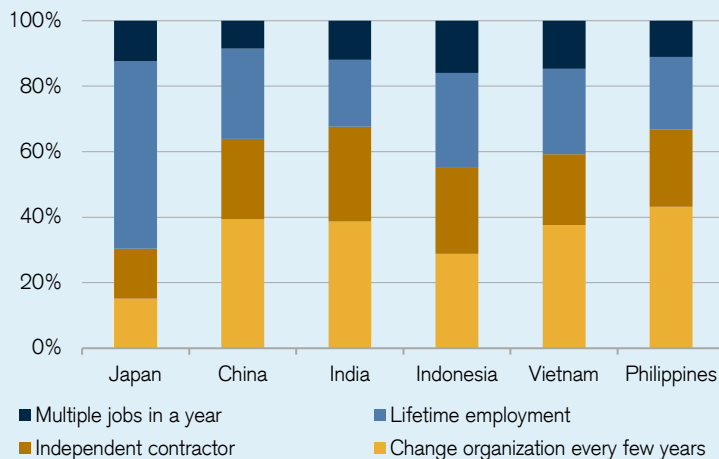
Source: ILO, World Bank, Credit Suisse

**Figure 39: Higher robot density correlates with aging societies**



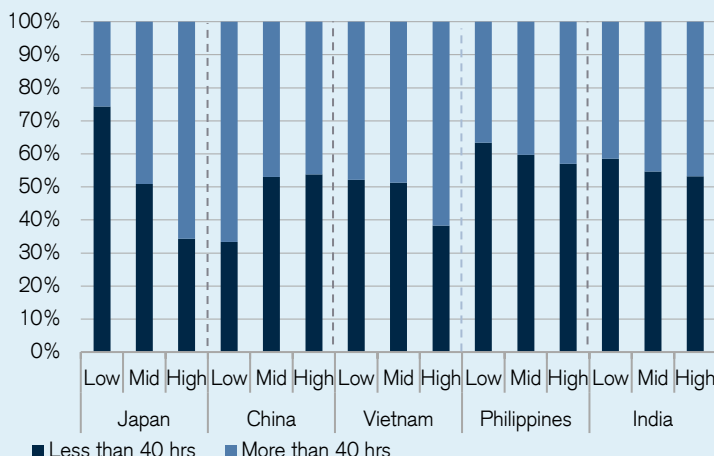
Source: UNDP, World Robotics 2021, Credit Suisse

**Figure 40: CS Survey – Japanese workers prefer lifetime employment**



Source: CS Nielsen Survey

**Figure 41: CS Survey – high-income workers work longer hours**



Source: CS Nielsen Survey

With better awareness and generally improving health over generations, the incidence of dementia has been falling across the 70+ age groups over the past decade (Figure 34). While this data is only available for the USA, trends may be similar in Asia. Potential new drug discoveries could also accelerate this process. If one assumes continued improvement, even assuming half a worker per person with dementia, growth in the share of workforce needed for dementia patients would be meaningful only in the 2030s and only for a few countries in the A-10.

### Significant scope for continued productivity catch-up

Productivity is also dependent on labor organization. Except for Japan, South Korea and Taiwan (Chinese Taipei), A-10 economies still have high informality in their labor force (Figure 36). Informal workers tend to have lower productivity, partly due to a skill gap, as measured by the Human Capital index (Figure 37) and partly due to the smaller size of the informal enterprises they work in. For this reason, A-10 labor productivity has significant scope to catch up, as the workforce formalizes steadily, even if gradually, over the next decade.

This improvement in productivity can help sustain output even if the industrial workforce shrinks, as has been the case for much of the last three decades, when industrial output per worker has grown at 3%–5% a year, with the growth rate rising meaningfully over the past decade. More specifically, automation and robotics are accelerating in aging societies (Figure 39). For example, one study suggests that robots are more widely adopted where populations become notably older in order to fill the gaps in an aging industrial workforce. The authors found that aging alone accounts for 35% of the variation of robot use among countries<sup>4</sup>.

In our survey, we also found a striking difference between the work-type preferences of respondents between those in lower per capita GDP economies and those in Japan. Nearly 60% of workers in Japan preferred lifetime employment, compared to just 20%–30% in the other countries (Figure 40). This has three possible drivers, in our view. First, a more formal economy offers more jobs where workers can opt for lifetime employment – these employer-employee relationships are mutually beneficial: the employer invests in the employee and the latter in turn provides stability and also becomes a repository of the firm’s institutional memory, which shortens the learning curve.

4. “Demographics and Automation,” Daron Acemoglu, Pascual Restrepo, *The Review of Economic Studies* (2021)

Second, Japan's post-World War II revival was led by a somewhat unique government-industry-employee relationship, which encouraged lifetime employment. Thus, even if workforce formalization in Vietnam or China were to climb above 80%, the preference for lifetime employment may still be lower than seen in Japan. Japan's extreme situation has been criticized, justifiably in our view, for workforce rigidity that slows down productivity growth. Third, as we discuss in the country section for Japan at the end of the report, Japan's youth holds a very small share of national financial wealth. They are also the most indebted, given expensive real estate, and also have the lowest share of people who believe they will be economically better off than their parents. These factors likely reduce the confidence to handle the uncertainty of job changes.

The first two of these three factors are important for continued productivity growth in the economies with a younger demographic. We also note that among our survey respondents, the higher-income workers tend to work longer hours, with China being the exception (Figure 41).

### A-10 labor supply still not a risk (at least till 2030)

Before we come to the final calculation of the labor demand-supply balance, a word on construction. Rapidly growing economies see a phase of strong construction activity, driven by rapid urbanization, infrastructure development and residential and non-residential building. After some years, the construction share of GDP normalizes, and while repair/replacement demand continues, it requires fewer workers. For example, the construction share of GDP in Japan and South Korea today is much lower than it was a few decades back. For India, Indonesia and the Philippines, which still need to build a large part of the infrastructure that they will need in 2050, construction is likely to absorb some of the growing workforce. In China, on the other hand, construction is now 7% of GDP, not meaningfully different from the 4%–7% ratio seen in developed economies and is not likely to add or shed workers disproportionately.

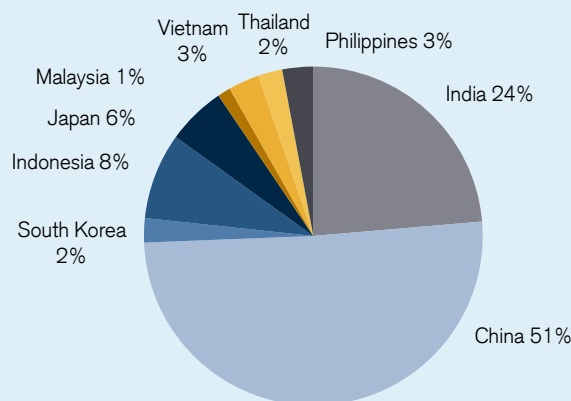
The figure for the supply of workers is relatively easy to assess: the 2030 population mix is already known, as is the direction of change of the participation rate. This gives us an A-10 non-agricultural workforce of 1.4 billion people in 2030, which is an increase of 234 million workers. In 2019, China accounted for more than half of these workers (Figure 42) and will still be 47% of the total in 2030. To assess the demand for workers, we start with IMF projections for economic growth for the A-10 economies from 2019 to 2027 and use similar growth rates for the 2027–30 period. We then

assume that demand for goods and services in these economies will grow at the same pace. In addition, as explained earlier in this section, we assume that demand for services in each economy grows one percentage point faster than average and that demand for goods grows one percentage point slower.

We then factor in productivity growth. On the supply side, these assumptions for goods and services matter much more than labor supply, which had already started to become constrained without much of a sustained increase in goods pricing pre-COVID. It is also clear to us, given the dominant position that China has in non-agricultural labor supply and its far higher productivity growth from 2011 to 2019 (Figure 43), that forecasts for productivity growth in China will matter much more than for other economies.

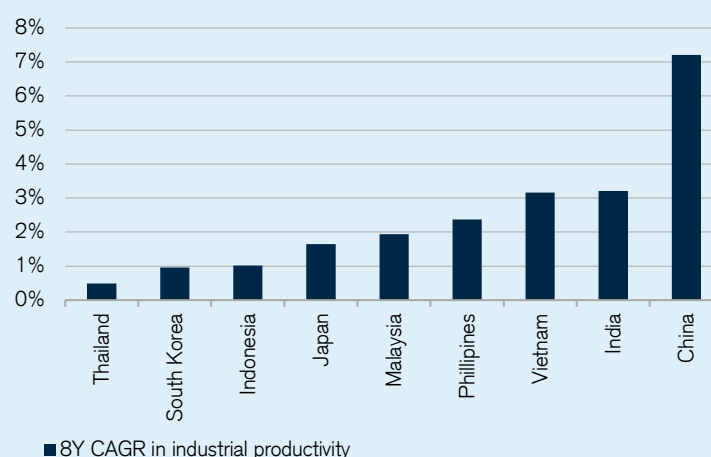
**Figure 42: China dominates supply of non-agricultural workers (2019)**

Split of non-agricultural employment 1.2 billion



Source: UN Population Division, ILO, World Bank, Credit Suisse

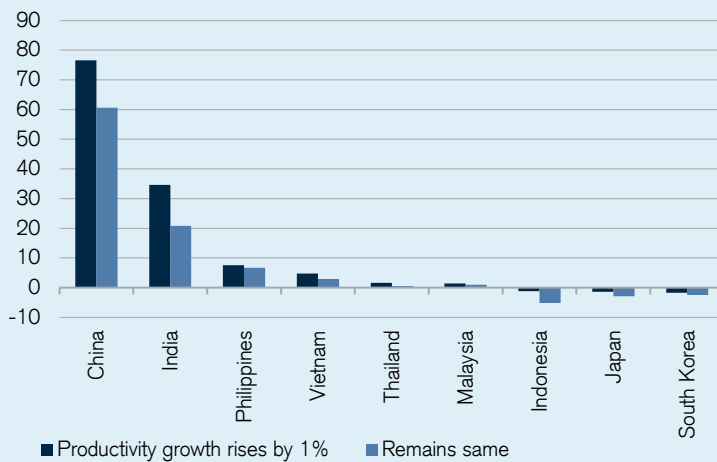
**Figure 43: China's industrial labor productivity growth is high**



Source: UN Population Division, ILO, World Bank, Credit Suisse

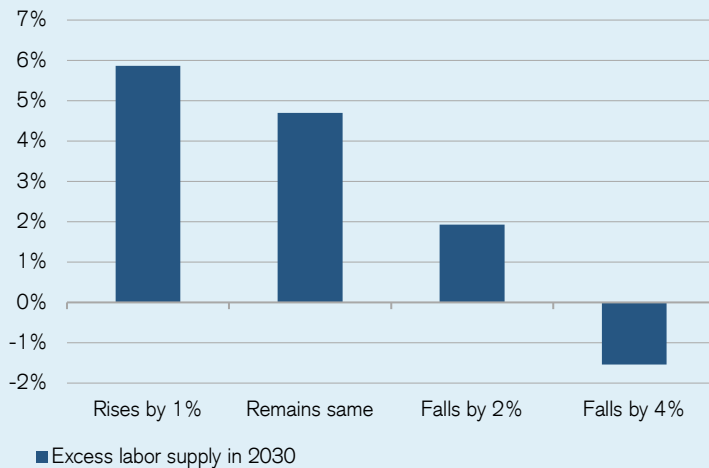
**Figure 44: Even with unchanged productivity growth, labor still in surplus**

Labor supply minus labor demand (2019–30)



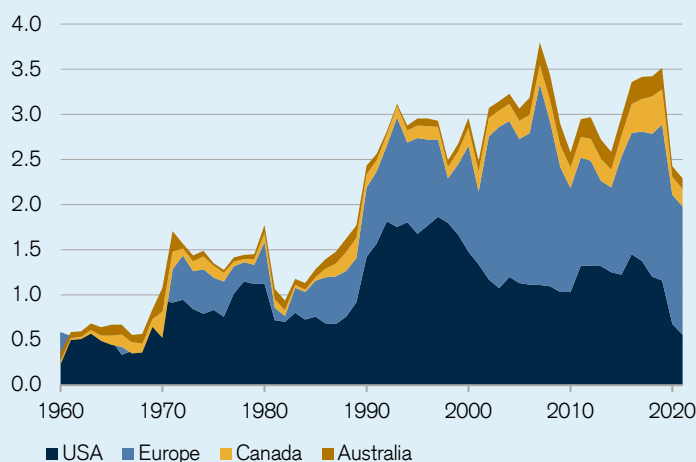
Source: UN Population Division, Credit Suisse

**Figure 45: Chinese productivity growth must slow sharply for there to be a deficit**



Source: UN Population Division, Credit Suisse estimates

**Figure 46: Relatively small immigration into developed markets (m)**



Source: UN Population Division, Credit Suisse

We examine two scenarios – one in which productivity growth remains the same as in the 2011–19 period, and another in which it grows by 1% due to improved automation/infrastructure.

For both these scenarios, the A-10 aggregate would be in surplus (**Figure 44**), with minor deficits in Japan and South Korea. Equally importantly, in the event that India, Indonesia and the Philippines were unable to connect their growing workforce quickly enough to global value chains, China’s labor supply would also be in surplus. In fact, even if China’s productivity growth slows by two percentage points annually, it would still have surplus labor. Only if its productivity growth slows by four percentage points, would there be a meaningful deficit in A-10 labor supply (**Figure 45**). In the various scenarios modeled in the chart, we assume unchanged productivity for other economies.

The consolidation of Asian (mainly Chinese) workers into the global economy in the first two decades of this century has been an important contributor to a period of sustained low inflation. From our analysis, any apprehension about a decline in China’s working-age population automatically putting upward pressure on global goods prices appears to be misplaced. The only challenge may be disruptions to productivity due to shifting trade linkages for non-economic reasons. China’s surplus labor supply represents a large buffer against the risks of non-Chinese economies being able to sufficiently train/integrate workers into the global economy. Within the overall labor force, it is likely that supply will be biased toward services, keeping local services inflation limited in most economies.

### Limited impact on service exports from Asia too

Asian workers have also helped offset labor shortfalls in services in the developed economies – not only through immigration, but also via the remote/offshore provision of services. Immigration has been an important source of population stability/growth in the EU/USA, adding 20–30 basis points to population growth. In fact, without immigrants, the European population would have been declining from 1995 onward. Given that many legal immigrants tend to be highly skilled, sourcing them from other countries with large populations is still a viable option. The USA, Europe, Canada and Australia together only allow around 3–3.5 million immigrants annually (**Figure 46**). Not only is this a small proportion of the A-10 workforce of 1.6 billion people, but immigration from the A-10 in aggregate has also already slowed over the past decade

(Figure 47), and is being replaced by Pakistan, Bangladesh, Turkey, Myanmar, Cambodia, and other countries. This is similar to the change after World War II, when the mix of immigration to the USA shifted away from the EU to India/China.

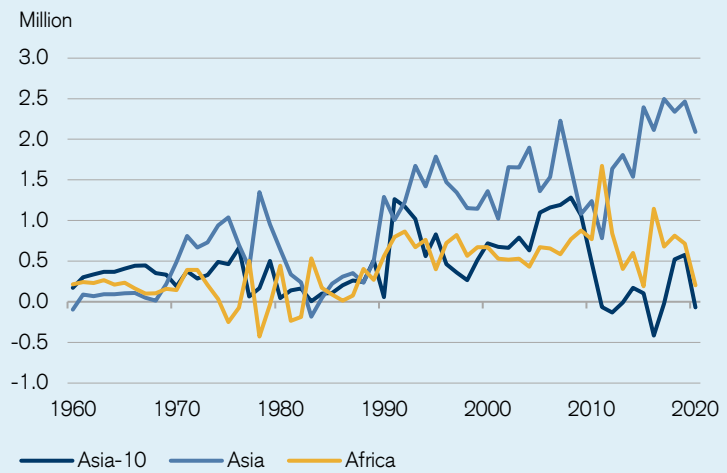
Other than immigrant settlers in North America in the 19th century, there have been very few instances of legal, large-scale and long-distance immigration in the last two centuries. The reasons are understandable with the emergence of nation states and their improving ability to enforce border controls. Even prehistoric population movements were gradual. While the movement and resettling of people invokes changes to ethnicity and culture, and can be politically challenging, there are faster and cheaper communication channels (e.g. better transcontinental data transfers enabling cross-border collaboration) and travel, which mean that exports of services can continue their growth path (Figure 48). Growth may be steady in conventional services like trade, transport and tourism, but remains strong in newer IT and/or business process outsourcing (BPO) segments (Figure 49).

Altogether, these services account for roughly 3% of A-10 GDP and, with significantly higher added value per worker than the country average, they involve around 1% of the workforce. This ratio is higher in India and the Philippines, where growth in exports is also high, but demographic pressure in these countries is unlikely in the coming decade. The risk of manpower shortages is therefore low.

There are a number of assumptions in our above analysis: (1) that industrial workers in India, Vietnam, Indonesia and the Philippines will mobilize fast enough to offset the decline in China; (2) that the trends within these countries are uniform (in reality they are not – there is significant divergence in fertility rates, participation ratios and skill-development between provinces of China and India, for example, but intra-country mobility should address some of these concerns), and (3) that geopolitical tensions and intensification of trade wars will not distort any of the trends.

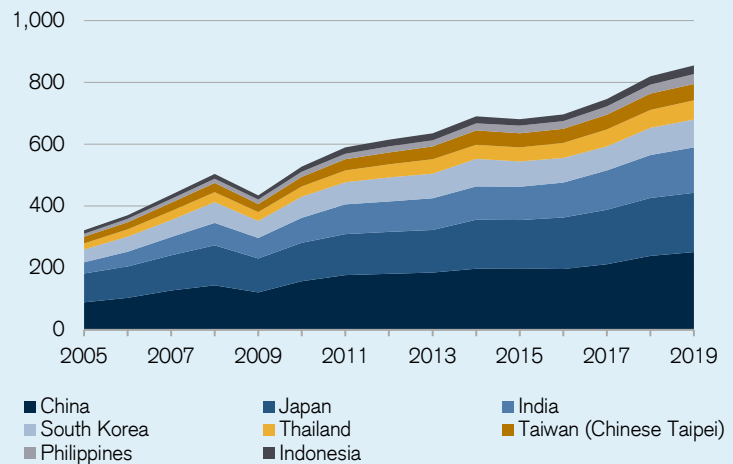
Of these, we are most apprehensive about the third. Geopolitical constraints on productivity growth could be the driver of cost-push inflation, not A-10's demographic transition.

**Figure 47: Much of it now occurs from non-A-10 economies**



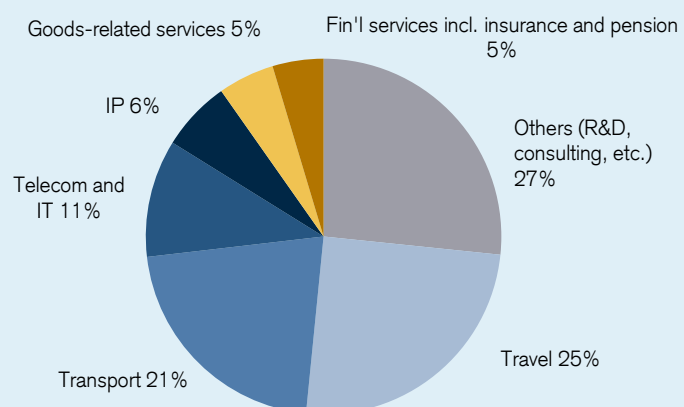
Source: UN Population Division, Credit Suisse

**Figure 48: Growth in service exports from Asia (bn)**



Source: OECD, Credit Suisse

**Figure 49: High value-added services need fewer people**



Source: OECD, Credit Suisse



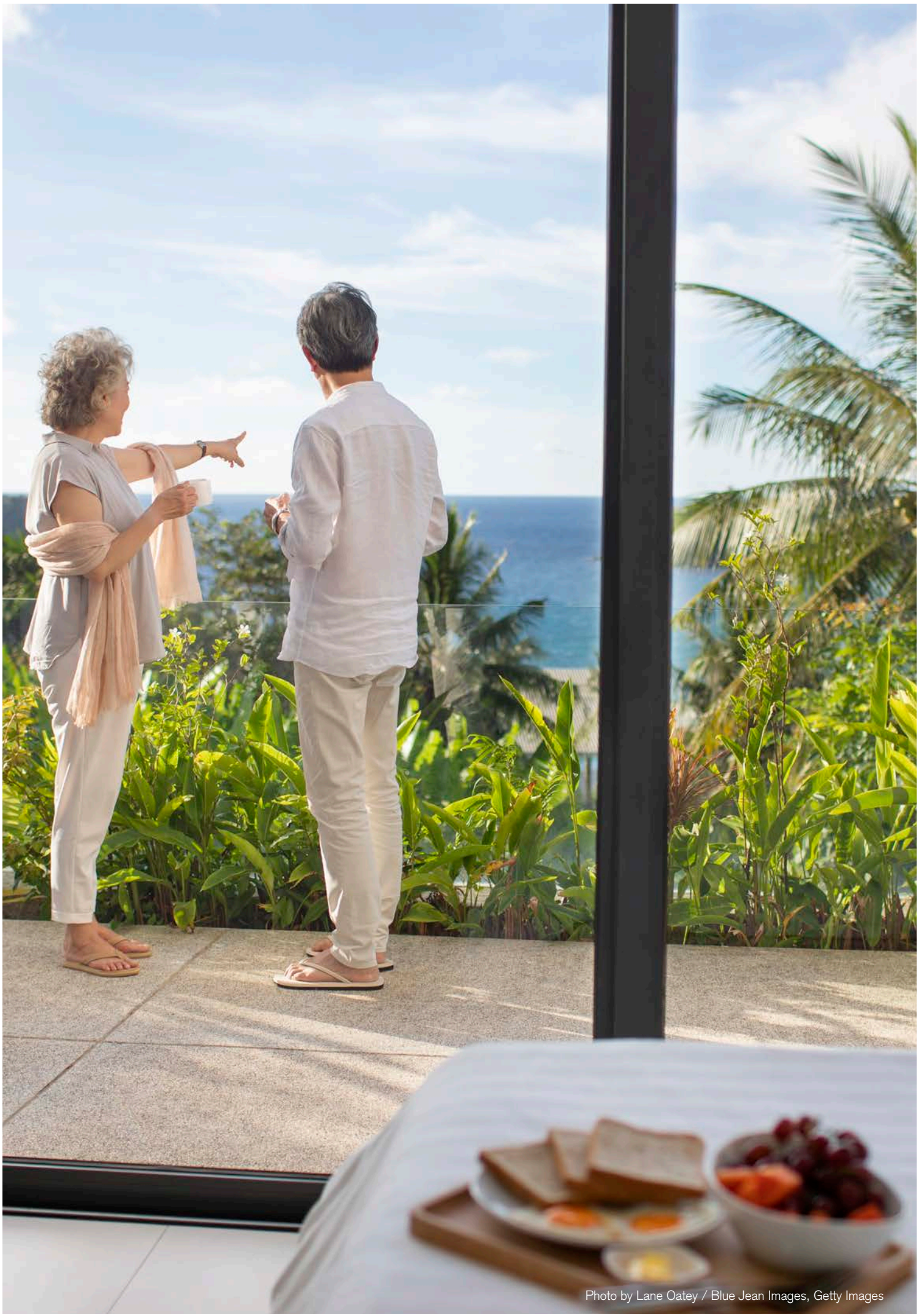


Photo by Lane Oatey / Blue Jean Images, Getty Images

# Asia would still provide savings to the world

Neelkanth Mishra, Prateek Ancha, Abhay Khaitan

Asia has been a net saver and therefore a net provider of capital to the rest of the world for several decades. In this chapter, we explore whether rising dependency ratios, normally associated with a drop in savings, will slow or reverse this flow of capital. We find that financial savings and demand for safe assets may continue to grow as younger economies save for their future and the falling attractiveness of real estate in rapidly aging ones means more financial savings.

## Asia is a major provider of capital to the world

A crude but effective measure of a country's savings is its current account balance. Economies that produce more goods and services than they consume have a current account surplus, and those that do not, have a deficit. Here, "consumption" stands for a combination of consumption and domestic investment. The ten Asian economies we study have had an aggregate surplus continuously for the last three decades and their net savings, which have been exported, have been around half a percent of world GDP annually in the last decade (Figure 1).

As can be expected, there is significant disparity among the A-10 economies on this count too. Of the cumulative savings of USD 4.7 trillion in the 2012–21 period, nearly USD 2 trillion were attributable to China, USD 1.3 trillion to Japan, and USD 0.6–0.7 trillion each for South Korea and Taiwan (Chinese Taipei) (Figure 2).

Steady surpluses have also meant an accumulation of international assets. Collectively, the A-10 economies have some of the largest net international investment positions among the global economies. Largely reflecting the nature of their current accounts over the past few decades, economies like India and Indonesia have net international liabilities, whereas Japan, South Korea, Taiwan (Chinese Taipei), China and Vietnam have net international assets (Figure 3).

Figure 1: A-10 have been net savers for a few decades

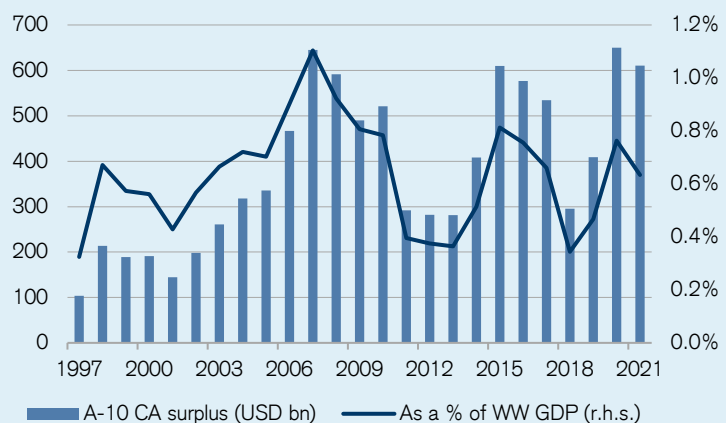
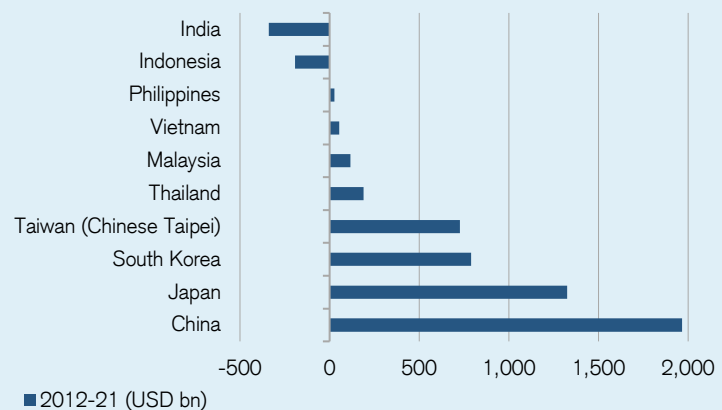


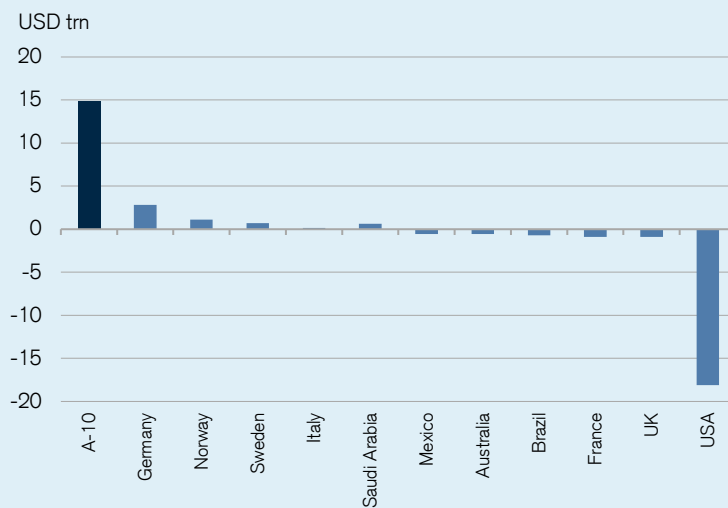
Figure 2: China, Japan, South Korea and Taiwan (Chinese Taipei) have dominated savings 2012–21

A-10 cumulative surplus USD 4.7 trn



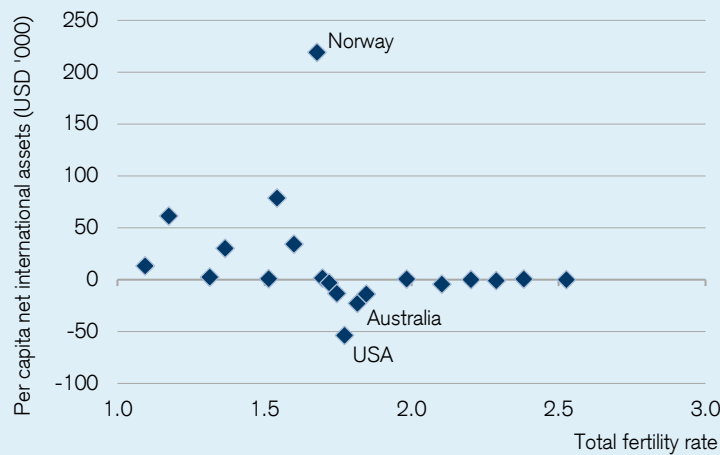
Source Figures 1 and 2: IMF WEO, Credit Suisse

**Figure 3: A-10 economies dominate international assets**



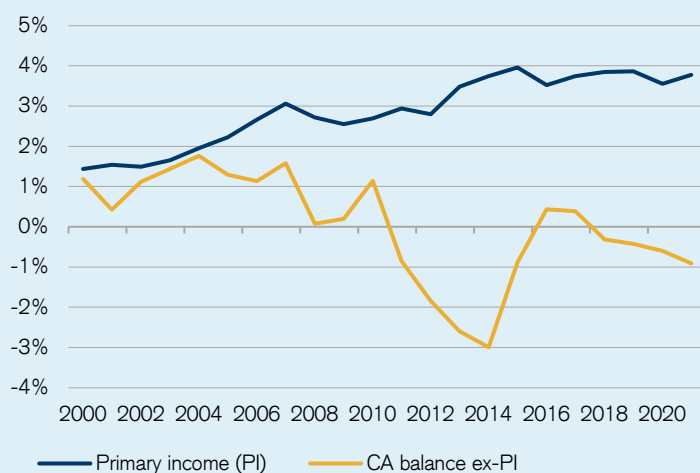
Source: CEIC, Credit Suisse

**Figure 4: Net international assets per capita vs. TFR**



Source: CEIC, Credit Suisse

**Figure 5: Japan's current account in deficit ex-primary income as a % of GDP**



Source: CEIC, Credit Suisse

On a per capita basis, Japan, South Korea, and China lag energy exporters like Norway and Saudi Arabia, but otherwise are among the largest holders of net international assets (Figure 4). This can have important implications for their future current account balances. These assets yield returns, which add to the national income.

For example, despite Japan's workforce peaking in 1995, and its dependency ratio rising for the last three decades, its current account has remained in surplus. A major driver has been the highly resilient primary income channel (this includes income from investments in other countries). For Japan, primary income has been USD 180–200 billion annually from 2011 onward. If not for primary income, the Japanese economy would have been running a persistent current account deficit (Figure 5). Thus, if a country has accumulated wealth before it grows old, the economy can better withstand the demographic transition.

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Equally important as the size of an economy's international assets is how they are split

Equally important as the size of an economy's international assets is how they are split, both in terms of their riskiness as well as their channel of ownership. For example, more than two-thirds of India's foreign assets are owned by the Reserve Bank of India (RBI) and are in the form of sovereign bonds from developed markets. These are liquid, safe, and can be used by the RBI to save the Indian rupee from volatility. While these are necessary conditions for reserve assets, they are not high yielding.

China, on the other hand, has diversified its ownership of global assets over the past decade, and its reserves are just a third of gross international assets. Loans by state-owned banks and foreign direct investment

(FDI) have increased, which reduces the risk of being overexposed to one asset class, has geopolitical advantages (e.g. China's Belt and Road Initiative), and can improve returns too. Thus, in addition to the desire and ability to continue saving and add to their holdings of global assets, the risk appetite and nature of these savings also matter to the global economy.

## A-10 dependency ratios to rise materially only by 2040

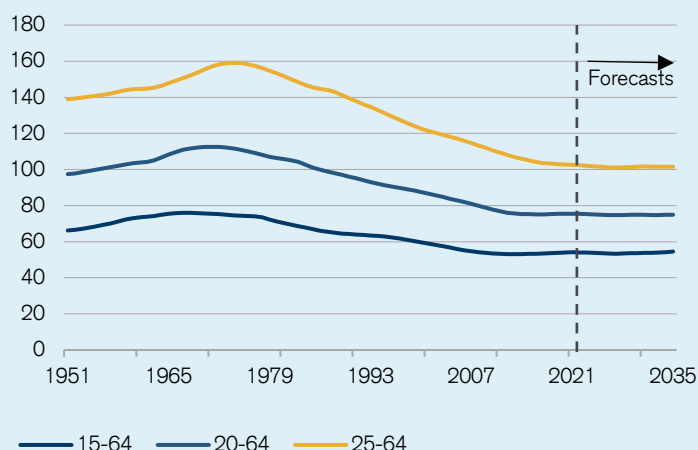
In our research of demographics literature, we noted an almost axiomatic link between an economy's savings and its dependency ratio. This appears logical because, if the dependency ratio rises, there are more consumers per worker and vice versa. Hence, if an economy's dependency ratio is falling, its current account should turn more positive and, if the dependency ratio is rising, its current account should turn more negative.

Over the past four decades, the dependency ratio has declined for the global population (**Figure 6**). Definitions of dependency ratios differ in the age group considered to be of working age. Some like the ILO use the 15–64 age group (which we use in this report), while others use 20–64 or 25–64 age groups. For all three, the decline has either ended (in 2010 for the 15–64 group) or will end shortly (25–64 group).

Going forward, the ratio is forecast to flatten out at least for the next decade and a half. However, as seen in the previous chapter, much of the addition to the global workforce is expected to occur in economies that have low rankings for economic openness or have unstable politics. Dependency ratios in the A-10, which account for 46% of the current global workforce and have been significant net savers, have now begun to rise after declining for the past three decades (except in Japan, where they troughed in 1995). In the coming decade, only South Korea, Thailand and Taiwan (Chinese Taipei) will see sharp increases, whereas sharper and more worrying increases are expected in the subsequent decade from 2030 to 2040 (**Figure 7**).

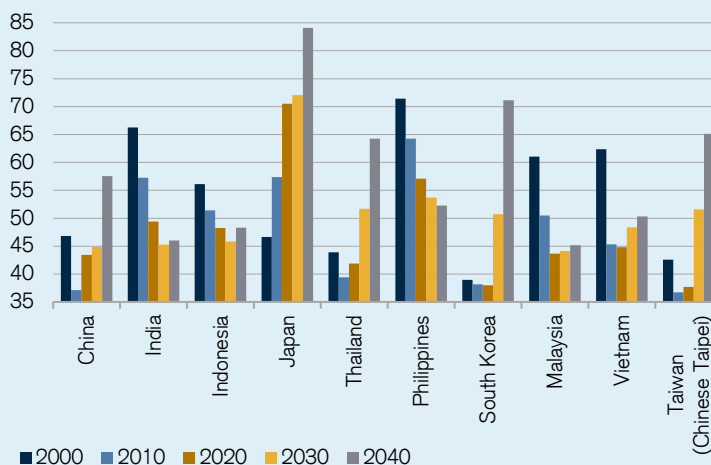
It is important to note that the dependency ratio combines the young and the old-age dependency ratios, but both have very different characteristics. First, while the average time spent by individuals in these two groups is broadly similar (15–25 years each), changes are driven by different factors – the former by fertility, which is falling, and the latter by improving life expectancy, which is rising. Second, as seen in **Figure 8**, consumption levels vary between the two groups.

**Figure 6: Global dependency has fallen over the last four decades**



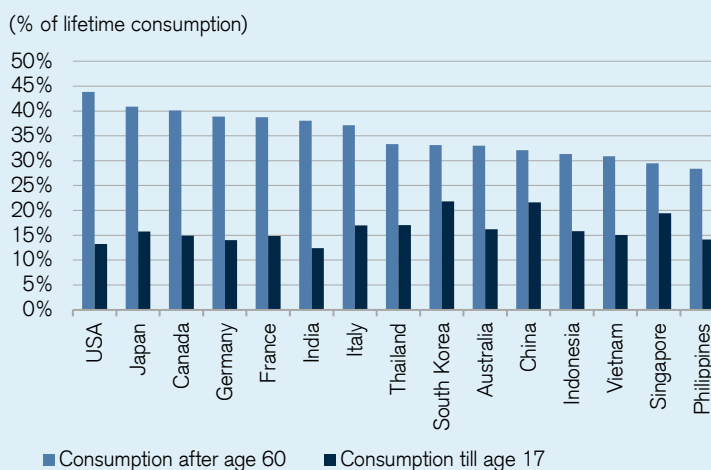
Source: UN WPP 2022, Credit Suisse

**Figure 7: Dependency ratios in South Korea, Thailand and Taiwan (Chinese Taipei) expected to rise in the next decade**



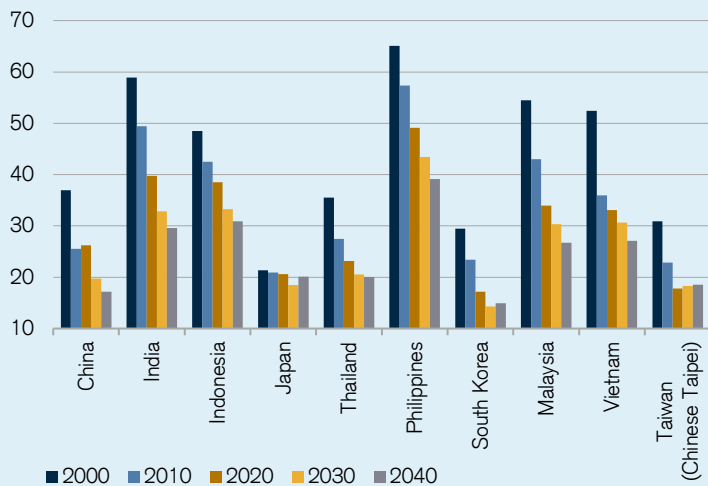
Source: UN WPP 2022, Credit Suisse

**Figure 8: Spending in older cohorts higher than for the young**



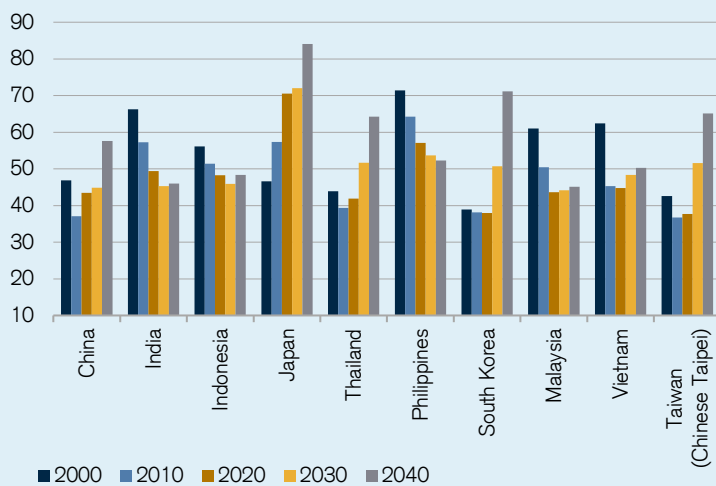
Source: NTA 2016, Credit Suisse

**Figure 9: Young-age dependency set to decline further**



Source: UN WPP 2022, Credit Suisse

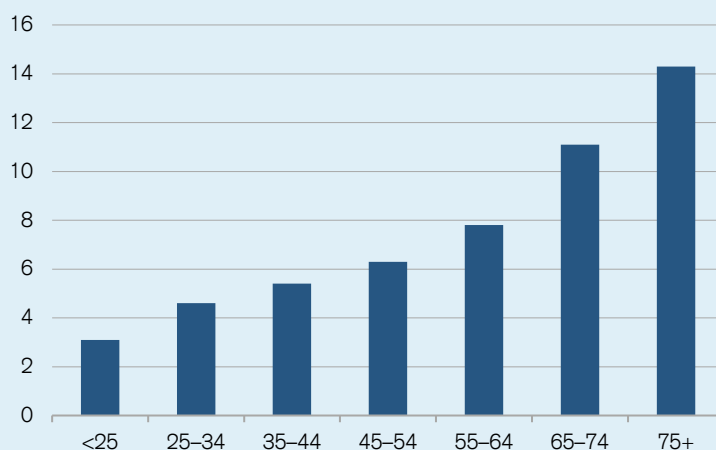
**Figure 10: Old-age dependency set to rise sharply**



Source: UN WPP 2022, Credit Suisse

**Figure 11: Healthcare a major expense in old age (USA)**

Share of spending on healthcare at different ages



Source: Bureau of Labour Statistics (US), Credit Suisse

For the whole region, the young-age dependency ratio is expected to continue the decline seen over the past few decades (Figure 9), which is consistent with the drop in fertility we discussed earlier. This ratio is now only bottoming out in Japan. The notably low levels in South Korea and the continued decline in China even in the 2030–40 period are important too.

On the other hand, old-age dependency ratios are expected to rise for all economies other than India, Indonesia and the Philippines. The increase in the coming decade for Japan will be relatively minor, but very sharp in Thailand, South Korea and Taiwan (Chinese Taipei) (Figure 10). For China, the decade where stress may start to show is in the 2030–40 decade and not this one.

“  
When measured as share of lifetime consumption, young-age consumption is materially lower than old-age consumption

As per comprehensive surveys conducted by the United Nations (the results of which were published in 2016 under the National Transfer Accounts), when measured as share of lifetime consumption, young-age consumption is materially lower than old-age consumption. This trend is visible across all countries. Thus the “relief” of falling young-age dependency may be less than the additional burden of rising old-age dependency.

A major drawback with these data is that they only represent a snapshot. A drop in fertility could increase consumption per child as parents invest their resources in fewer children. Similarly, better health in older age groups and access to funds saved earlier could change spending patterns post-retirement – cohorts retiring in 2030 would be differently placed than those retiring in 2010, particularly if they are on defined contribution pension plans. Lastly, whether healthcare spending is state funded is also important (Figure 11), as this has a direct effect on old-age spending. Going forward, some countries may also raise the retirement age or tweak the age at which retirees are eligible for pensions (Japan has attempted this),

although this is not as easy as it seems, particularly given the productivity gains discussed in the previous chapter.

## Dependency ratios affect, but do not drive, savings

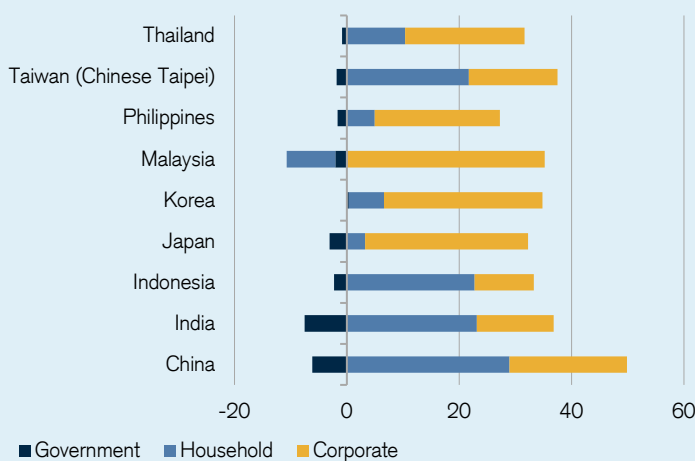
It would be simplistic and as it turns out, incorrect, to attribute an economy's savings to its dependency ratio. As per an International Monetary Fund working paper, "Demographics, Old-Age Transfers and the Current Account," while demographic variables do affect current account balances, they do not account for more than 2%–10% of the variation. Several other factors are at play. To start with, the need for investments is just as important as consumption: the two combined drive total savings as measured by the current account. Put simply, only savings left over after meeting domestic investment needs can be exported. Terms of trade also matter: an energy-importing economy could incur significant deficits if global energy supplies are constrained and quickly close them as soon as supplies normalize.

# “ The need for investments is just as important as consumption

It is analytically helpful to divide an economy's functioning into three groups: households, governments and corporations. How savings are split between these three groups is important as it affects how these savings are deployed.

In conventional economies, households save and finance the government's fiscal deficits as well as corporate investments. Governments very rarely save, except in resource-owning economies like Norway and Saudi Arabia with nationalized resources, or exceptions like Singapore. Corporations also reinvest their savings, i.e. their retained profits. The split of savings between corporations and households is often a political choice. Given the need to invest in research and development (R&D) and manufacturing capacity, and in view of global economic competition, political and economic factors both come to the fore at different times.

**Figure 12: Savings need not all be among households**



Source: IMF WEO, Credit Suisse

In an aging economy where the dependency ratio is climbing, corporations have less need to invest for future growth locally. For example, demand for several goods in Japan has fallen as the population has aged – local manufacturers of these products need not add capacity. Their savings (retained earnings) then may get deployed in global expansion. In several economies, and particularly in A-10 economies, which are embedded in global value chains, corporate profitability and investment intentions may be affected by global trends instead of only local ones. This shows up in an economy's split of ownership of international assets. Corporations' cross-border savings would be in the form of FDI and foreign loans, whereas those of households would be either directly or through funds (including pension funds) in portfolio investments.

Even household savings rates are affected by many factors, and not just the dependency ratio. In the last few decades, for example, among several OECD economies, a decline in personal saving rates has coincided with an increase in households' financial net worth: it is likely that confidence in financial well-being has encouraged higher consumption and lower savings. Among non-wealth determinants of the household saving rate are productivity growth (higher productivity boosts incomes and thus savings, as consumption is slow to change), real interest rate (higher rates encourage savings), the capital-labor tug-of-war in share of profits in an economy, and the public-sector savings rate (see paper by de Serres and Pelgrin<sup>1</sup>), in addition to the demographic factors.

1. "The Decline in Private Saving Rates in the 1990s in OECD Countries: How Much Can be Explained by Non-Wealth Determinants?", de Serres, A. and F. Pelgrin (2002), OECD Economics Department Working Papers

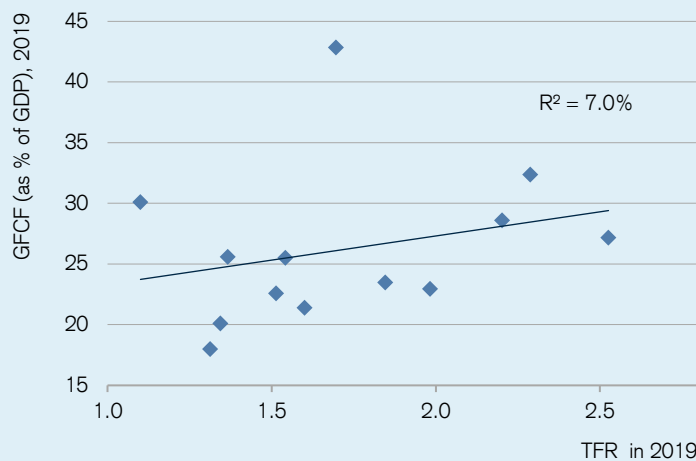
A quick word on the use of savings ratios to GDP instead of modeling savings as the difference between income and consumption: in an economy, consumption for one entity is income for another, except for cross-border provision and consumption of goods and services.

### Investment size may not change, but the type of investment might

Thus, for a given level of savings in the economy, how much capital is imported or exported depends on investment needs. Total investment in an economy broadly consists of infrastructure construction (often by the government), manufacturing capex by corporations and real estate by households/corporations.

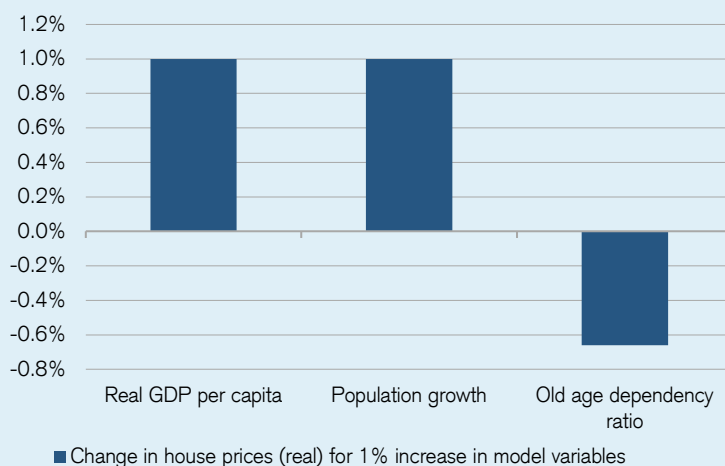
An economy with a higher fertility rate tends to spend more on infrastructure, i.e. building roads, bridges, railway lines, airports, etc. This is a self-adjusting pathway for savings as households in younger countries may save more, but these countries also need to invest more in infrastructure. Conversely, in countries with higher old-age dependency ratios households may save less, but these countries also need to invest less in infrastructure, keeping the current account unchanged. We find a weak correlation between an economy's fertility rate and the share of the income it invests, measured as the GFCF (gross fixed capital formation) to GDP ratio (**Figure 13**). Our sample does not have poor economies with a TFR higher than 2.5, which tend to operate at subsistence levels and may not be able to save enough to fund investments: governments in these economies must attract foreign capital to fund necessary investments.

**Figure 13: Weak correlation between investments and the TFR**



Source: OECD, UN WPP 2022, Credit Suisse

**Figure 14: Real house prices fall if the dependency ratio rises**



Source: BIS paper, Credit Suisse

## “ An economy with a higher fertility rate tends to spend more on infrastructure

Moving to corporate investment: in older but wealthier countries, labor becomes expensive, making capital investment more attractive, and corporate GFCF rises. Since the supply chains for goods tend to be global, the need to invest is driven by global demand-supply balances and not necessarily local ones. This savings-investment balance is also self-adjusting, as globally competitive companies generating investable surpluses will continue to invest to meet growing global demand. Unlike infrastructure and corporate investments, housing investments, which are a large investment area for most economies, are not self-adjusting on the savings-investment scale. Housing is completely local, with its needs strongly linked to demographics. In fact, research shows a very strong dependency of real house prices with per capita GDP growth, population growth and the dependency ratio (**Figure 14**)<sup>2</sup>.

2. "Ageing and asset prices," Bank of International Settlements, 2010

These coefficients help us model inflation-adjusted real estate prices (using time series from the OECD and CEIC). While real estate prices tend to be volatile, affected by factors like supply and mortgage rates as well as risk appetite (which in turn drives mortgage leverage), back-testing for Japan, China and South Korea shows good results. Using IMF projections for per capita GDP growth, and WPP forecasts for population and dependency ratios, we project the likely trajectory of prices in these aging economies.

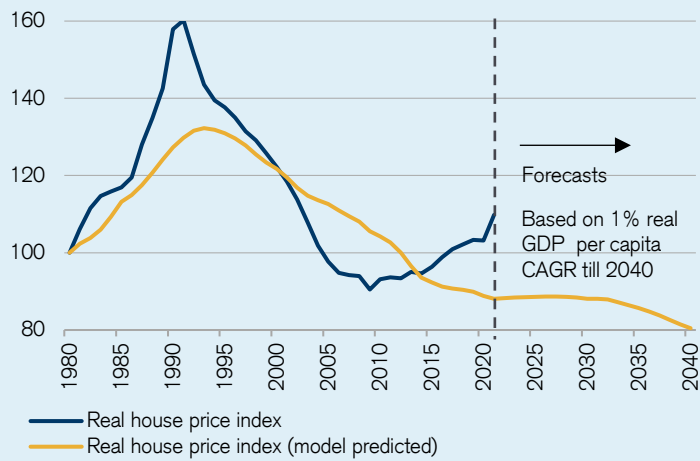
In Japan (**Figure 15**), the model-driven prices peaked in the early 1990s, although the real bubble was much more extreme and peaked slightly earlier. The model forecasts a continued decline in real prices until 2040, falling to nearly half the level of the peak (note that these are average prices in the economy and not of a particular micro-market in one of the major cities).

In China, the model forecasts a peak in 2027 and, if we take the starting point as 2010, current prices are already at those levels (**Figure 16**). However, this is dependent on the pace of economic growth. If growth is slower than currently forecast by the IMF, current prices may already be higher than justified, creating longer-term challenges for the real estate market in China. The model is sensitive to the pace of change of growth, or the second derivative, so that, if growth decelerates faster than currently expected, the impact on pricing can be substantial.

In South Korea, the peak has been crossed (**Figure 17**), the model-driven real estate prices have started a steady decline and actual prices are likely to follow. These model-driven prices are only indicative, however, and sensitive to the starting point. Given near-term volatility in housing prices, different starting points give different answers. We therefore look at changes in affordability to understand which starting year to take and find that China, Vietnam and Indonesia have the least affordability (**Figure 18**). Incrementally, while affordability has deteriorated over the past decade for China, South Korea and Japan, it has improved for India.

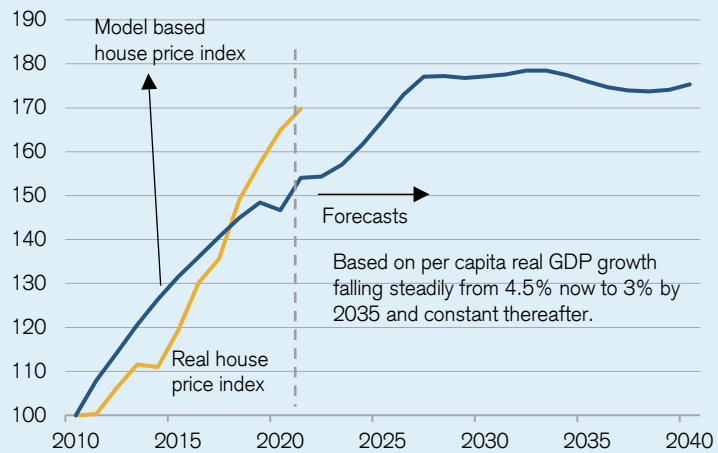
Using the model (based on population, per capita GDP and dependency ratios), we project the expected trajectory of inflation-adjusted house prices in the A-10 economies (**Figure 19**). Understandably, real house prices would be lower than current prices in Japan and South Korea. The growth in China appears positive, but only in the model – on current prevalent prices, model-driven prices would provide limited upside. Price signals affect supply and it appears likely that, beyond near-term volatility, the supply curve would trend downward in China.

**Figure 15: Real house price projections, Japan**



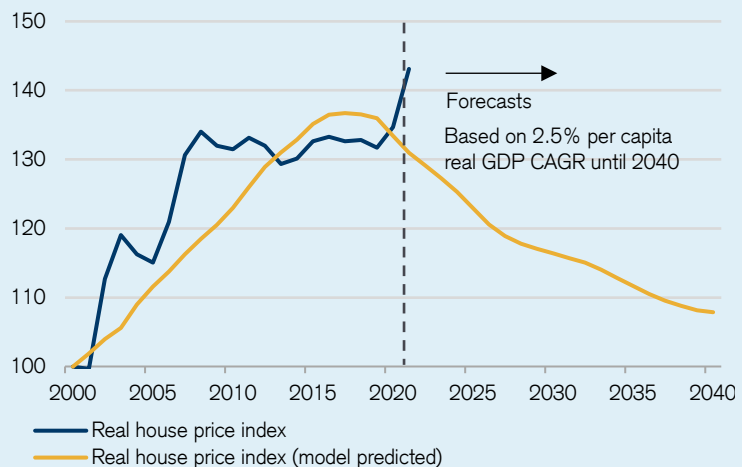
Source: OCED, IMF WEO, UN WPP, Credit Suisse estimates

**Figure 16: Real house price projections, China**



Source: OCED, IMF WEO, UN WPP, Credit Suisse estimates

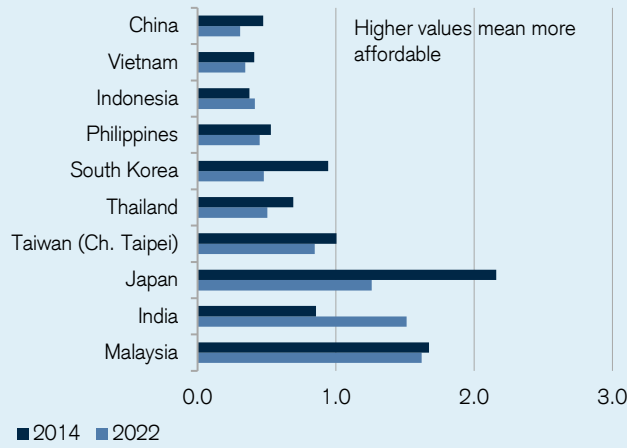
**Figure 17: Real house price projections, South Korea**



Source: OCED, IMF WEO, UN WPP, Credit Suisse estimates



**Figure 18: Affordability in 2014 vs. 2022**



Source: NUMBEO, Credit Suisse

**Figure 19: Projections for real house prices (2030 vs. 2020)**

% change in modeled house prices (real) based on demographic factors and per capita income growth



Source: IMF WEO, UN WPP, Credit Suisse estimates

Note that this is at the aggregate level and not necessarily applicable to all real estate markets. In China, for example, some cities may still see improving demand – larger metropolises tend to attract not only global professionals, but also continuing domestic inflows of people. The “hollowing out,” if at all, may start at peripheries, as it appears to be happening in Japan.

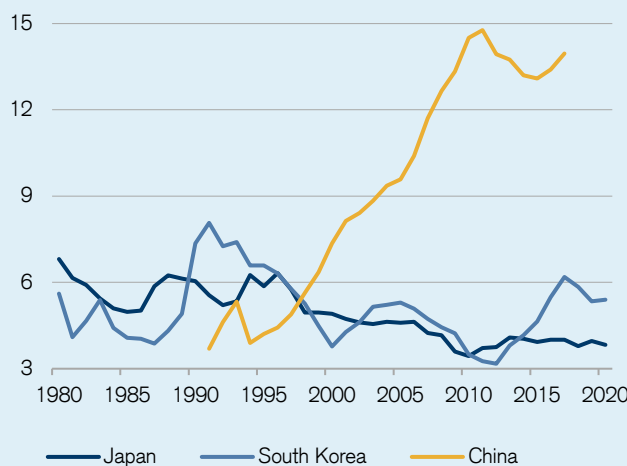
Nevertheless, at an aggregate level, given how large real estate investment currently is in China (Figure 20), this would mean an increase in financial savings that can be exported. On the other hand, it would also affect Chinese and global growth, potentially slowing down Chinese income growth.

### Household savings depend on pensions

People who live until they are 80 only earn income for less than half of their lives. They are dependent on their parents for the first quarter and must have access to a source of income to sustain their consumption and survive post-retirement. To do this, they need to save during their work years (Figure 21).

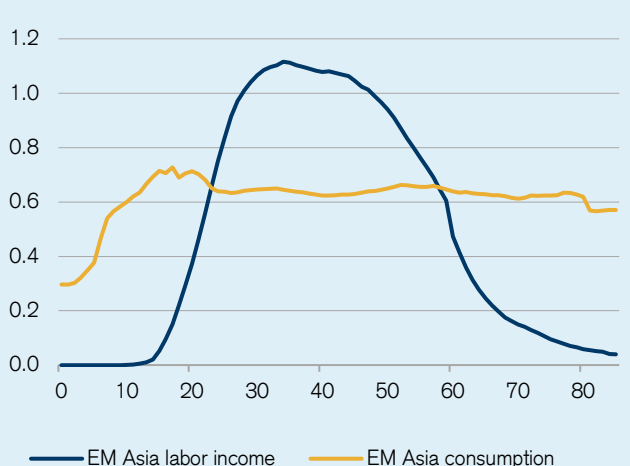
For much of human history, well before formal financial savings existed, investing in children was likely a means of saving for the future, combined with cultural mores on the importance of taking care of elders. In addition, we believe

**Figure 20: Real estate investment is a large part of China's GDP as a % of GDP**



Source: CEIC, MOSPI, OECD, World Bank, Credit Suisse

**Figure 21: Savings during working life fund consumption later**



Source: NTA, Credit Suisse

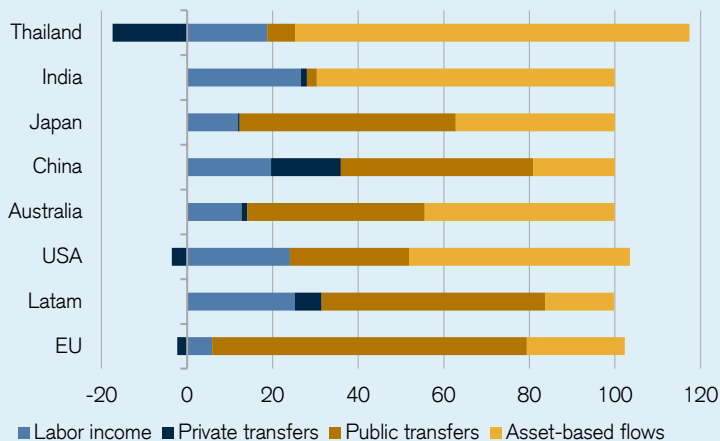
that the genetic proclivity to see children grow into healthy adults has been a prime driver for parents to invest in children.

Today, with far fewer children than their ancestors had, adults save financial assets for their retirement. Today, while many people over 65 years of age still work, most do not. Private transfers (including transfers from children to parents) are a relatively small part of their source of funds (**Figure 22**). Most of the expenditure is funded by asset-based flows, which is primarily the retirement corpus adults build during their working lives and government transfers. In the EU and Japan, these account for a substantial source of funds.

## “ In an aging population, either the individual or the state, or both, need to save for the future

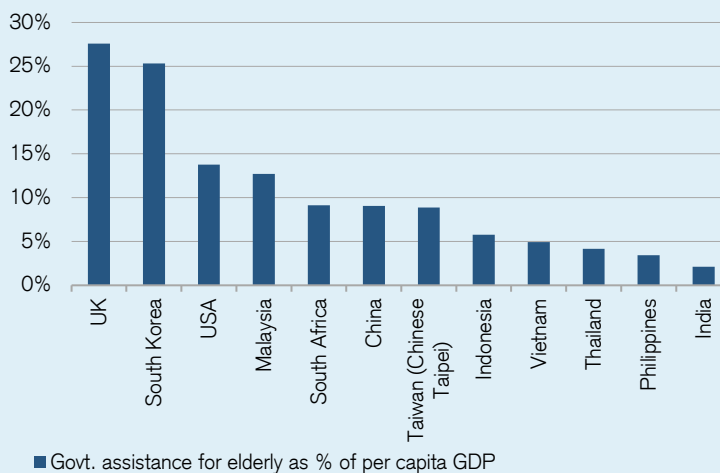
In an aging population, either the individual or the state, or both, need to save for the future. The state, cognizant of the future needs of its citizens, encourages savings in defined contribution pension schemes, which in several countries can only be accessed post retirement. Some governments also provide defined-benefit pensions to take care of the elderly, channeling an economy's savings, but very few countries have universal defined-benefit pension plans. The reasons are understandable: in the past half century, several large corporations have gone bankrupt due to underfunded defined-benefit pension plans. Even some sovereigns (most notably Greece), which only had such plans for government employees, have had to correct course aggressively. While pension payments exist in most countries, these are generally small as a share of per capita GDP (**Figure 23**). The switch to defined contribution plans de-risks the government from inflation and changes in life expectancy, and prevalent economic thought supports this transition.

**Figure 22: Sources of consumption for the elderly, age 65+**



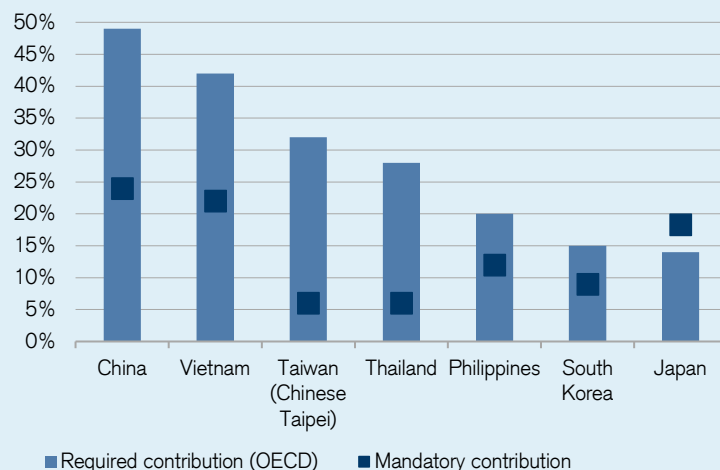
Source: NTA, Credit Suisse

**Figure 23: Mandatory pensions are a small % of GDP/capita**



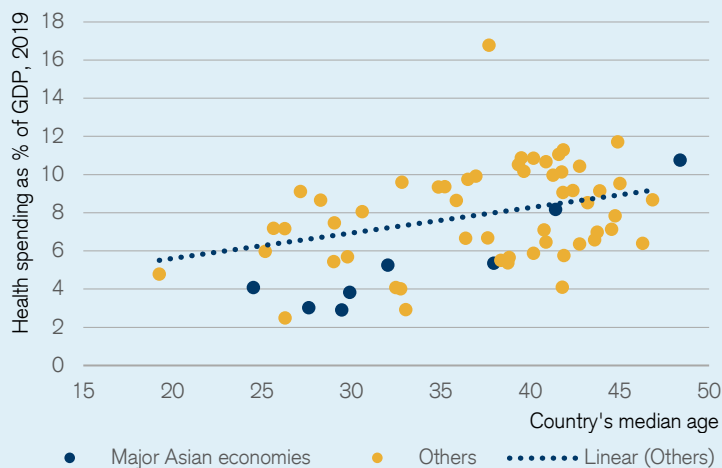
Source: National Agencies, Credit Suisse

**Figure 24: Required contribution vs. current contribution**



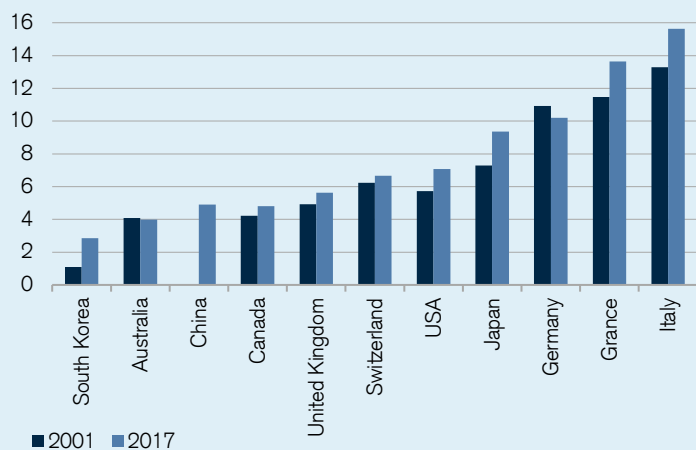
Source: OECD, Credit Suisse

**Figure 25: Public healthcare spending as a % of GDP**



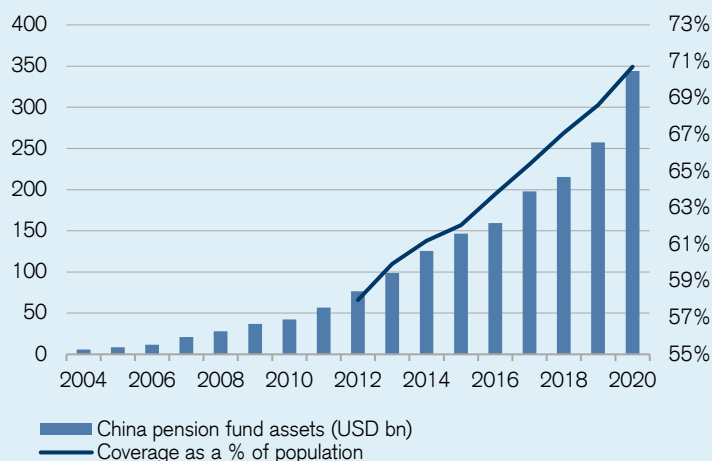
Source: UN, Credit Suisse

**Figure 26: Public pension spending as a % of GDP**



Source: OECD, Credit Suisse

**Figure 27: China's pension fund size and coverage rising rapidly**



Source: OECD, NBS, Credit Suisse

However, this exposes economies to three risks. First, the standard deduction from formal employees' compensation is hard to calibrate and studies show that these are far lower than necessary (Figure 24) in most A-10 economies ex-Japan. Second, in many developing economies, a large proportion of the workforce is informally employed and not part of government-run provident fund programs. Third, given a steady increase in life expectancy and weak public healthcare (Figure 25), older adults may curtail their consumption to maintain savings.

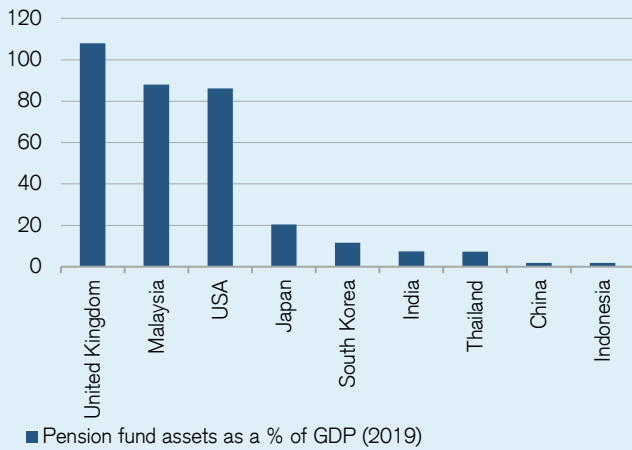
This curtailment may not only occur during retirement, where the burden of spreading the retirement savings over the remaining lifetime is complicated by uncertainty regarding the individual's lifespan. The insufficiency of government pensions means that, several years before retirement, households would start cutting consumption to save more. After all, there are very few options individuals have in the event that savings run out post-retirement.

In societies where the state creates the plumbing to move workers' incomes into retirees' consumption, even if for essentials like healthcare (like the National Health Service in the UK), there is not much of a dip in overall consumption after retirement. Some studies attribute the stagnation/fall in US life expectancy to the lack of universal access to public healthcare.

Economies like Japan and South Korea, which are far ahead of the other A-10 economies in aging, already have significant savings. The Japanese GPIF has USD 1.5 trillion in assets, nearly 10% of all Japanese wealth, with half of it deployed in foreign financial assets. In South Korea, despite the percentage deductions being lower, as explained in the country section, the pension fund is currently in surplus and is only expected to go into deficit after three decades.

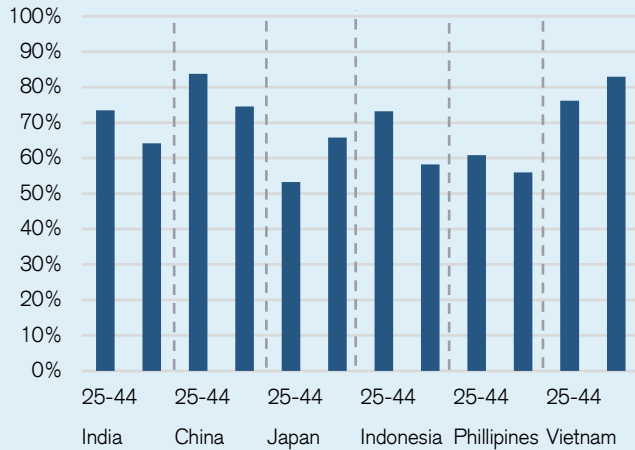
China, the next to age, and reverting to prioritizing "common prosperity," is rapidly expanding its social safety net. Its pension fund is growing steadily (Figure 27). Further, payments under China's primary health insurance (yi bao), which provides basic medical coverage in China, have increased to reduce out-of-pocket health expenses. The government's promotion of the new Huiminbao ("Benefit the People") health insurance provided by private agencies has resulted in 140 million sign-ups. However, it is less about old-age insurance, and some surveys suggest it may not become a major funding source for healthcare.

**Figure 28: Government pension fund assets as a % of GDP**



Source: OECD, Credit Suisse

**Figure 29: CS Survey – respondents with access to a pension plan**



Source: CS-Nielsen Survey

Other economies like India and Indonesia are in early stages of developing their old-age pension and healthcare financing approaches (Figure 28). The total pension fund assets as a share of GDP are still low in these economies but are likely to build up over the next two decades before the population begins to age.

Hence either through personal savings or government-mandated savings, we expect financial savings in Asia to continue to expand. In our survey, a surprisingly high share of workers reported having access to a pension plan (Figure 29). This is likely biased by the online nature of the survey, which reached a largely formal workforce. In all economies other than

Japan, the younger respondents had higher pension coverage. Interestingly, while most respondents also felt their plans were sufficiently large, Japan, which is 2–3 decades ahead of the rest, had the smallest share of respondents who felt their pensions were sufficient (Figure 30). This is despite the fact that Japan has the best pension assets in the whole set. Clearly, as people get closer to retirement, they tend to get more cautious about pension-fund sufficiency.

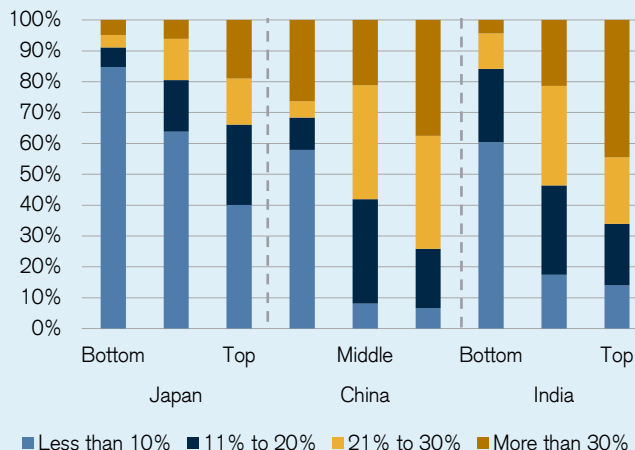
In our survey, we found that the quantum of savings depended on incomes (Figure 31) – the people with lower income levels reported lower levels of saving than those with higher income levels. Not only does this show that savings are

**Figure 30: CS Survey – respondents who think their pension fund will be sufficient**



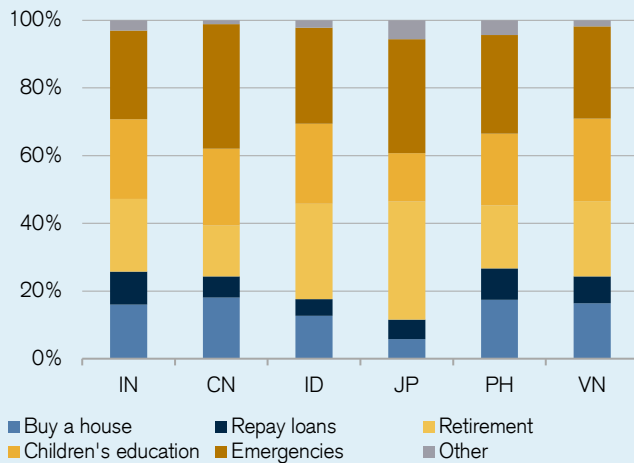
Source: CS-Nielsen Survey

**Figure 31: CS Survey – those with higher incomes save more**



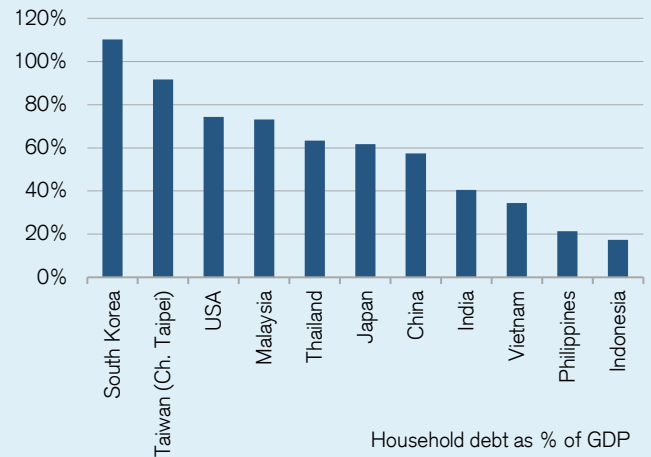
Source: CS-Nielsen Survey

**Figure 32: CS Survey – emergencies/education major drivers**



Source: CS-Nielsen Survey

**Figure 33: Household debt already high in mature markets**



Source: OECD, Credit Suisse

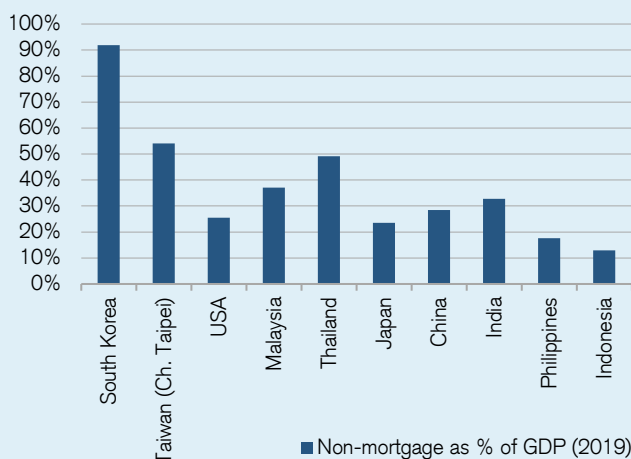
affected by productivity (discussed earlier in this chapter), but also that financial savings tend to be concentrated in fewer hands.

While people understandably save for retirement, Japan stood out with the highest share of respondents mentioning this as a reason (Figure 32). A remarkably high share of respondents in our survey reported savings for emergencies, with the largest share in China. This is perhaps an opportunity for insurance companies, but it also shows the absence of trust in social safety nets created by governments. A remarkably large share of responses also included children's education as a factor. These findings suggest household savings may remain elevated in Asia.

### Changing propensity to borrow affects net savings

For A-10 economies with favorable demographics, such as India, Indonesia and the Philippines, the share of household credit to GDP is low (Figure 33) due to both supply-side factors (e.g. the maturity of the financial system to create suitable products and be able to issue loans with smaller ticket-sizes) and the propensity to borrow. Non-mortgage credit is even smaller (Figure 34). A meaningful part of this debt may also be for business purposes, as given high informality in the economy, individuals must borrow under their own name even if for deployment in their business. In rapidly aging

**Figure 34: Non-mortgage credit is low for younger economies**



Source: OECD, Credit Suisse

**Figure 35: CS Survey – respondents who have a loan**



Source: CS-Nielsen Survey

economies, household debt is already high and may not expand much further: the outward flow of financial savings may thus not be affected meaningfully.

In the survey, younger populations across all surveyed economies were more comfortable taking loans, except in Japan (Figure 35); the latter may have to do with confidence across generations. This same trend is visible for ownership of credit cards as well as usage of buy-now-pay-later (BNPL) products (Figure 36). Hence retail credit is likely to grow in the younger economies. However, savings would grow too, particularly due to growth in need to save for retirement. It is possible that if the Chinese real estate market slows down, notwithstanding the impact on income growth in the economy, the need for mortgages would also slow down, releasing financial savings. On a net level, these economies are likely to have surplus financial savings, which they may keep exporting to the developed world.

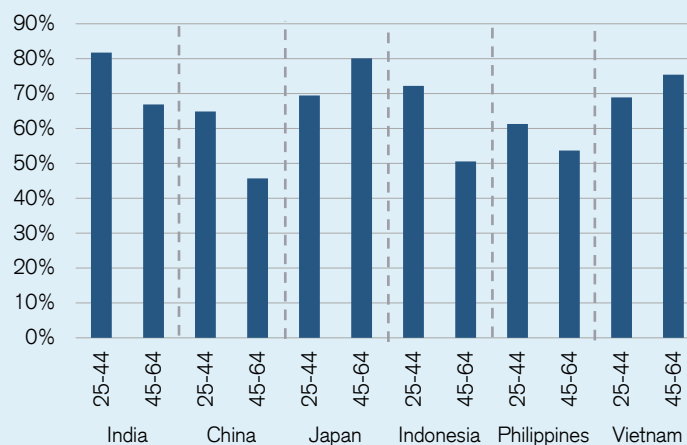
### Risk appetite as important as gross savings

We now discuss the form of household savings. Early in an economy's modernization, most wealth is physical in the form of land, real estate and gold. Historically, this was the wealth that would be passed on through generations as, until a few generations back, agriculture was the dominant form of productive work in most of Asia. Even after the start of industrialization, when the productive value of land became less important, cultural preferences for land and gold continued to dominate household wealth and, since many people preferred these assets, growing incomes meant a rapid increase in prices. This in turn meant stronger investment gains, fueling a virtuous cycle in these assets.

It is not surprising, therefore, to find that household assets in much of Asia are skewed toward physical assets (Figure 37). Behavioral trends also explain why this ratio in Japan, which industrialized a few generations before South Korea and China, is only 40%. Japan's rapid industrialization started after the Meiji Restoration 150 years ago, and the share of agriculture in GDP had fallen below 10% in the 1960s. Further, as we discussed earlier, real house prices in Japan have been correcting for several decades.

This transition is also likely to occur in other Asia economies as the share of agriculture in GDP is declining steadily with improving industrialization and urbanization. The developed economies among the A-10 have a larger proportion of household assets in pension plans, which is a trend that other Asian governments are likely to plan for too going forward.

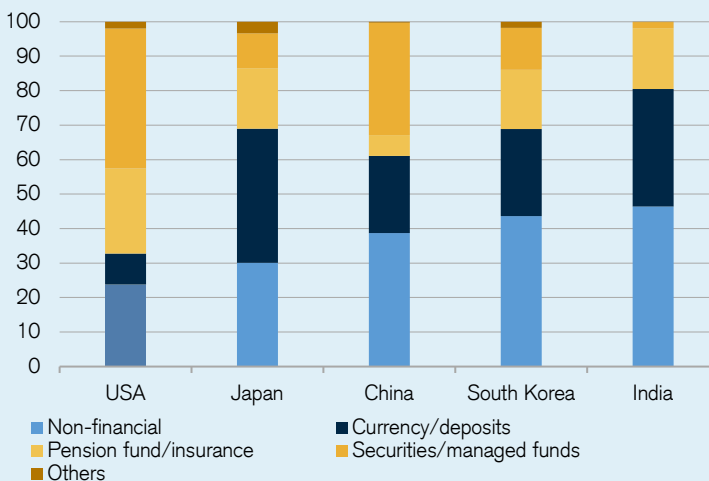
**Figure 36: CS Survey – respondents with a credit card or BNPL**



Source: CS Nielsen Survey

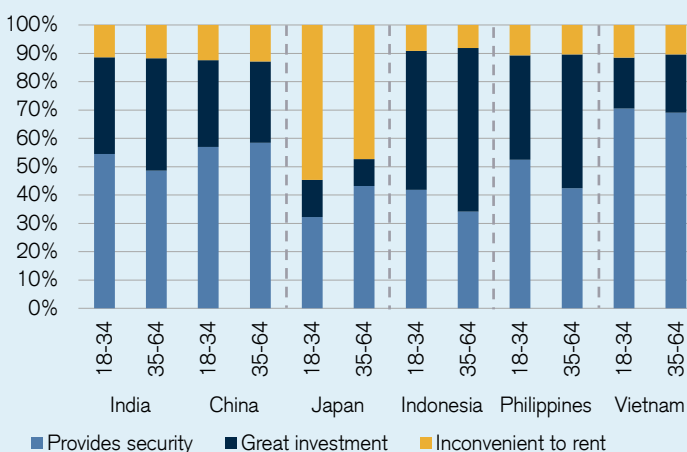
**Figure 37: Much of wealth in Asia is still in non-financial assets**

Split of household assets



Source: National Agencies, Credit Suisse

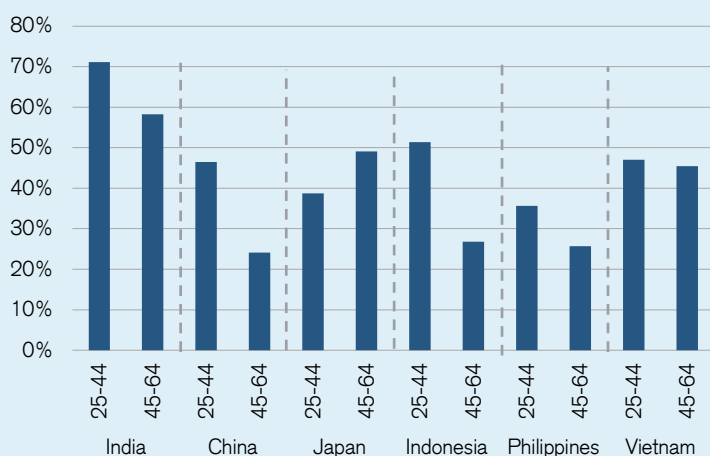
**Figure 38: CS Survey – reasons for owning a house**



Source: CS Nielsen Survey

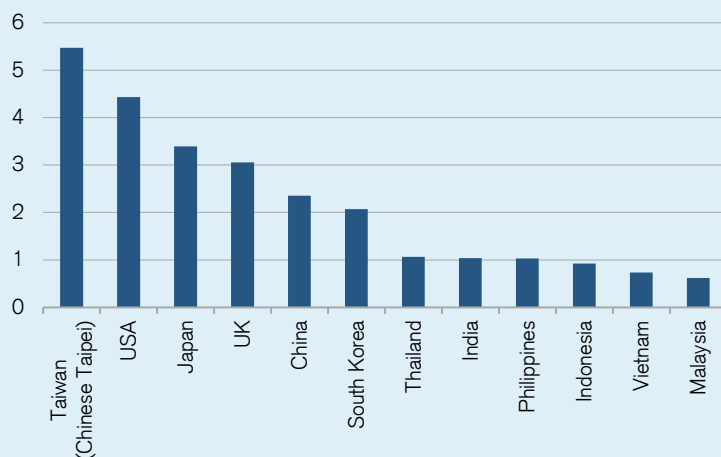
**Figure 39: CS Survey – brokerage account by age**

Respondents with a brokerage/stock trading account



Source: CS-Nielsen Survey

**Figure 40: Gross financial wealth as a % of GDP (2019)**



Source: OECD, Credit Suisse

In our survey, more than half of Japanese respondents prefer to own a house because it is inconvenient to rent (Figure 38), whereas households in other economies preferred real estate as an investment or as security. Further, in all economies surveyed except Japan, the older respondents were more willing to see real estate as an investment, suggesting that younger cohorts may be less inclined to instinctively invest in real estate. That said, we must also be mindful of some of these survey responses being affected by recent trends in real estate prices.

Financial savings can also take several forms – from lower-risk bank deposits to higher-risk public and private equities. While an individual's risk appetite can be driven by a multitude of factors, including genes and social background, two variables relevant to our analysis are age and current wealth. If wealth is constant, older people are likely to have a lower risk appetite – partly due to physiology and partly due to the need to preserve capital for old age given rising life expectancy. In our survey (Figure 39), younger cohorts were more likely to have a brokerage account (for equities). Even among the younger generations, some research suggests that single children tend to be more risk averse than their peers<sup>3</sup>.

The other variable is wealth, where poorer economies have most of their financial wealth in domestic bank deposits. As wealth accumulates over time, financial assets diversify further along risk indices and international assets form part of this diversification. Current wealth in most A-10 economies is low (Figure 40), except Japan, and any international diversification may initially occur with safe assets, growing demand for which may continue to raise questions about the supply of safe assets.

Interestingly, a survey conducted in the United Kingdom by the University of Reading<sup>4</sup> found that appetite for risk peaks around the age of 40 and falls thereafter. Separately, a study of households' financial holdings by the Reserve Bank of Australia<sup>5</sup> found that risky assets form a much larger part of the holdings of the top quintile than the bottom quintile.

3. "Behavioral Impacts of China's One-Child Policy," NBER Working papers

4. "Why are older investors less willing to take financial risks?" Brooks, Sangiorgi, Hillenbrand, and Money (2018), International Review of Financial Analysis

5. "Households' Appetite for Financial Risk," Susan Black, Lamorna Rogers and Albina Sultanaeva (2012), Reserve Bank of Australia



Photo by Marcin Kilarski / EyeEm, Getty Images

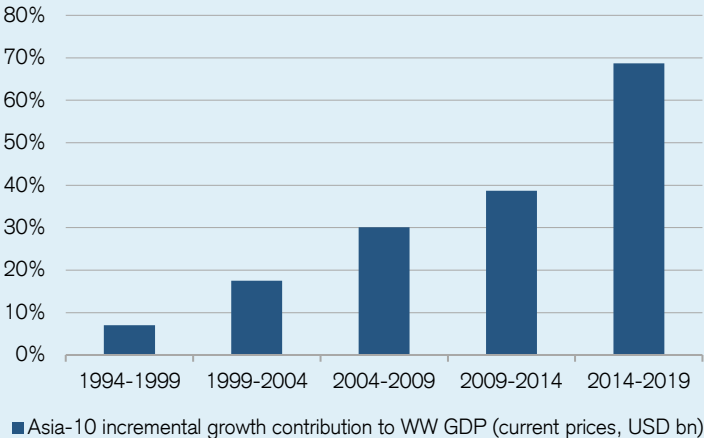


# Slower growth, low real rates and inflation

Neelkanth Mishra, Prateek Ancha, Abhay Khaitan

In this chapter, we assess the potential impact of the A-10’s demographic shifts on the global economy. We find that the negative impact of demographics on growth would be less through labor availability and more through the impact on capital formation in some major economies. We also find that demographic pressures are unlikely to push inflation or real interest rates higher: productivity growth and political choices like the labor share of income matter more.

**Figure 1: A-10 economies made up 70% of incremental global GDP in 2014–19**

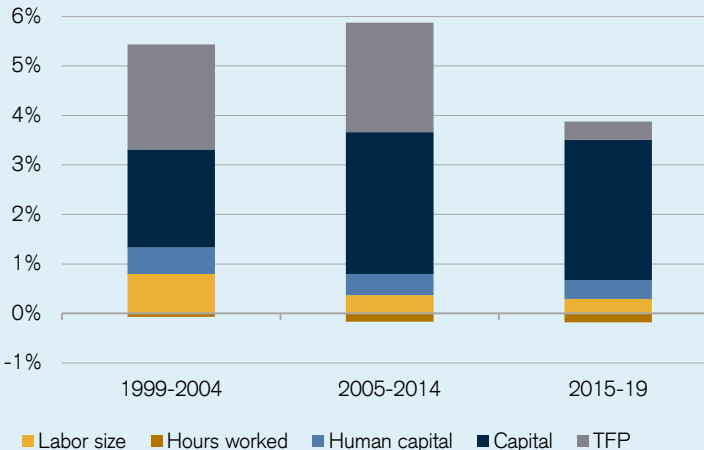


### Growth – labor force size not a major driver

Asia is a meaningful driver of global economic growth. Over the past three decades, the incremental contribution of A-10 economies to global GDP growth has risen steadily, reaching 70% between 2014 and 2019, from 40% in the previous five years, and less than 10% in the 1994–99 period (Figure 1). While China’s rise has been the main driver, steady growth in India and the ASEAN economies, compounded over multiple decades, has also contributed meaningfully.

It is analytically useful to split A-10 growth into five factors: labor size, hours worked, human capital, financial capital, and total factor productivity (TFP). The first three measure the human input: labor size stands for the number of employed workers, hours worked measures the time spent per year per worker, and human capital is the quality of the workforce (this is a hard to quantify measure, and proxies like the average number of years of schooling are used). This needs to be combined with capital inputs, e.g. an entrepreneur using funds to set up a factory or add to working capital. Finally, TFP is a measure of efficiency: how well the human and capital inputs are used to generate output.

**Figure 2: Composition of A-10 growth likely to change again**



Some economies may grow by increasing the human input (quantity as well as quality) and others may grow by increasing the input of capital. Others, constrained in both human input and capital, may grow by just using these inputs better, i.e. increasing their productivity or TFPs. The A-10’s growth split shows that labor size has not been a meaningful driver of growth for at least the last 15 years (Figure 2). Even in the 1999–2004 period, when the working population was expanding in all

Source Figures 1 and 2: IMF WEO, University of California, Davis, Credit Suisse

A-10 economies other than Japan, labor was growing at 0.8% annually, but was less than a sixth of total growth. Labor growth slowed to 0.4% a year in the 2005–14 period, and 0.3% between 2014 and 2019, with the growth contribution of labor slowing to just 7%–8%.

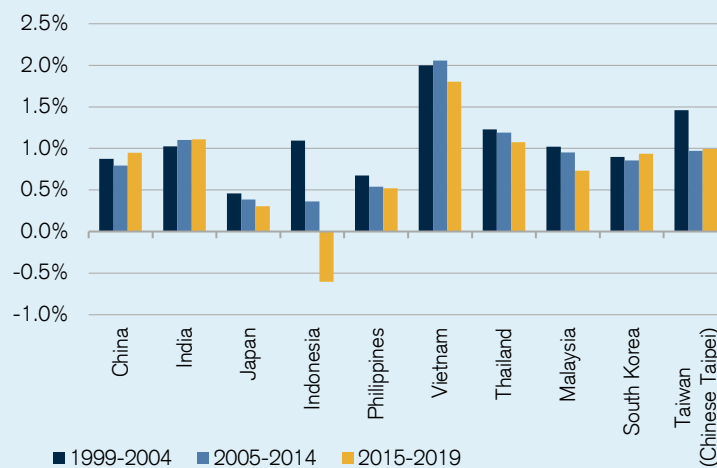
Other constituents of labor, i.e. hours worked and human capital expansion, have been small and largely consistent, although hours worked are now beginning to fall – a likely occurrence given improving per capita incomes. Working hours per week have been falling for 150 years in the developed world as workers moving out of subsistence have more leisure time and employers also become aware of the productivity gains from working fewer hours. In the case of aging economies like Japan, Korea and even Thailand, fewer hours also reflect reduced ability and inclination to work longer hours as individuals grow older.

Growth in human capital varies in A-10 economies from a very strong 2% p.a. in Vietnam to less than 0.5% p.a. in Japan (Figure 3). The Philippines and Indonesia are at 0.5% and the rest are around 1% p.a. Notably, the growth rates between the three periods we study have been quite consistent for each of the economies and we think it is reasonable to assume this will continue. The exception is Indonesia, where human capital declined at 0.5% p.a. between 2014 and 2019. We assume this is due to a data anomaly, as there is no discernable reason for the country to be an outlier during this period.

While governments do have a role in providing primary and secondary education, human capital development tends to be privately funded. In our survey, 10% or less of respondents across the economies surveyed reported benefiting from government-funded skilling or reskilling programs (Figure 4). Most reported self-funding, or benefiting from employer-funded programs, and a surprisingly large number of responses reported learning on the job: this proportion was the highest in Japan. In our view, human capital development trends therefore tend to be consistent over time.

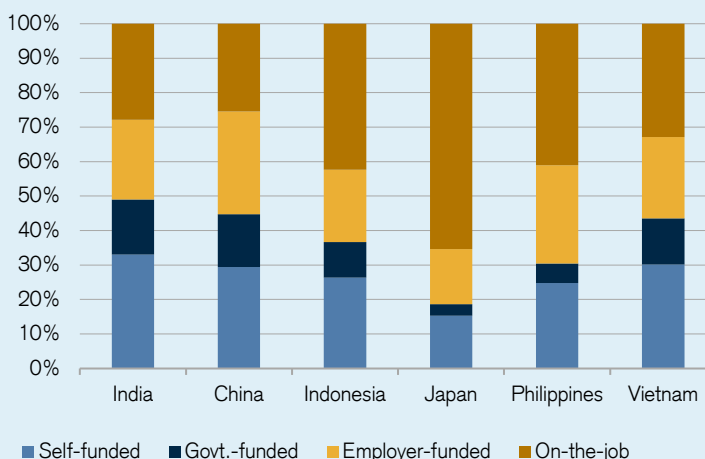
Labor growth, the primary focus of our report, continues to be a major source of growth in Indonesia, Malaysia and the Philippines. Going forward, it is unlikely to change meaningfully for most of the economies, except for a decline in Japan (Figure 5). The 1% growth seen in the 2014–19 period in Japan is due to a reduction in unemployment (in this framework unemployment rates are included when looking at labor input). If unemployment remains unchanged, growth is likely to slow marginally in Indonesia, the Philippines, Malaysia and South Korea, and improve in India and Vietnam.

**Figure 3: Human capital growth consistent and steady**



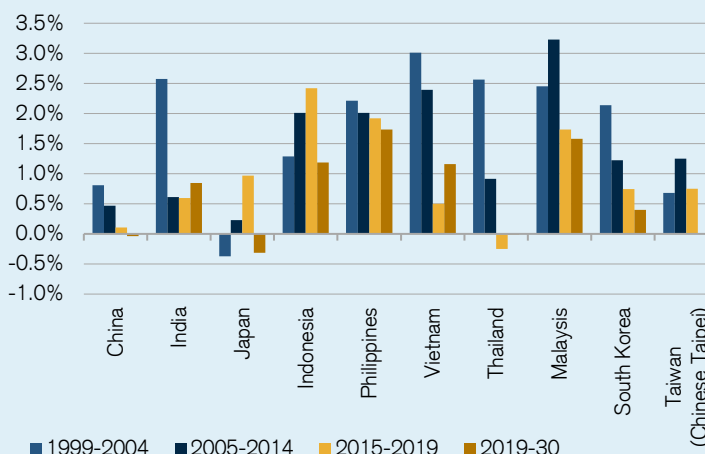
Source: University of California, Davis, Credit Suisse

**Figure 4: CS Survey – “How did you acquire the skills for the job?”**



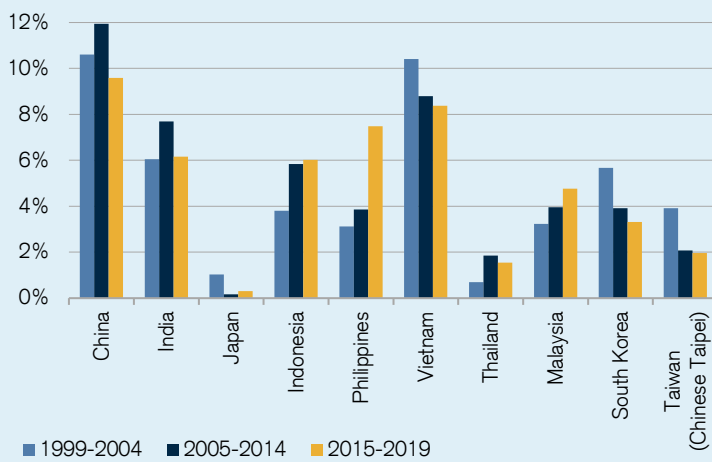
Source: CS-Nielsen Survey

**Figure 5: Labor growth unlikely to change greatly between 2019 and 2030**



Source: University of California, Davis, Credit Suisse

**Figure 6: Capital growth over the decades for A-10 economies**



Source: University of California, Davis, Credit Suisse

### The risk lies in capital formation, which is hurt by demographics

A significant part of GDP growth in the A-10 in the last two decades has come from the expansion of capital inputs – while this has been primarily due to China, the 2005–14 period saw a jump in capital use in other countries as well, including India and Indonesia, and a sharp increase in Philippines in the 2014–19 period (**Figure 6**). Unlike growth in labor inputs (number of workers, hours worked and human capital), which are normally intrinsic to the economy and directly dependent on demographics and social shifts, capital inputs are affected by regulations and risk appetite, with demand affected strongly by demographics.

Factors affecting the supply of capital include regulations (like “plumbing for savings,” e.g. being part of equity or bond benchmark indices, or regulatory reserves in financial institutions) and risk appetite (e.g. the current reversal in global risk appetite is drawing out risk assets from non-USD markets, and the rise in cost of capital is making some investments unviable). Demand factors, like the areas that need investments, e.g. a new factory, a road, or a house, are affected by government actions as well (like commissioning a highway or a hospital), but very often by income and demographics.

Among the A-10 nations, China’s growth has been disproportionately driven by capital inputs. Diminishing returns from new investments and the likelihood of flat if not falling real house prices (as discussed in the previous chapter) mean that capital deployment may be slower

going forward. These comments look beyond the near-term headwinds from COVID lockdowns and the liquidity and solvency concerns emerging for some real estate developers in China.

As discussed widely in economic literature, China’s disproportionately high capital growth has been due to its focus on infrastructure spending to bridge growth targets, the surge in real estate investment due to the structure of its financial system, and manufacturing capacity growth to cater to export demand. Vietnam, with the next strongest capital growth rate, has also expanded infrastructure investments, but has benefited meaningfully from opening its economy to foreign firms and building capacity.



## A significant part of GDP growth in the A-10 in the last two decades has come from the expansion of capital inputs

Dynamics in the Chinese real estate market should affect growth in the deployment of capital in China going forward. The China-Plus-One strategy that firms are adopting for global sourcing to avoid investing only in China and diversify business into other countries would be a headwind for additional investments, but we believe a large part of capex, even from global manufacturers in China, is used to meet local demand. The Chinese government’s focus on self-reliance (zili gengsheng) should also drive investments in technology research and manufacturing capacity.

Generally favorable trends for housing in India, Indonesia and the Philippines (as discussed in the previous section) and the continuing shift of manufacturing capacity away from China to Vietnam, India and ASEAN nations should mean continued growth in capital deployment. These economies could see some acceleration, although, in our view, a meaningful pickup in growth higher than that seen in the 2014–19 period is unlikely.

## TFP growth slowed during 2014-19 in the A-10

Worryingly, a large part of the GDP growth deceleration between 2015 and 2019 was due to weaker TFP: such changes are hard to reverse quickly. TFP growth was remarkably strong in India and Thailand over the 2014–19 period but slowed meaningfully for other economies and turned negative for China (Figure 7). This was before trade wars started and geopolitical tensions began to overshadow economic collaboration – the transfer of knowledge and skills is an integral part of productivity improvement in economies that are away from the productivity frontier. Those near the productivity frontier, like the developed economies in the USA/EU, see slower growth in any case.

There are few reasons if any to expect a jump in TFP growth going forward. The benefits of big data, machine learning, artificial intelligence, the spread of e-learning, efficient last-mile distribution through e-commerce, and improved work practices in services can add meaningfully to productivity. However, the previous decade also saw large increases in internet connectivity, social media, data centers, the internet of things, and so on. Thus, with capital inputs likely to slow in the A-10, and TFP growth likely to stay muted, with not much of a change in labor size, slowing growth in the A-10 economies could be an overhang for global GDP growth as well over the coming decade.

“  
Over the three decades ending in 2019, all Asian economies have seen steadily lower inflation

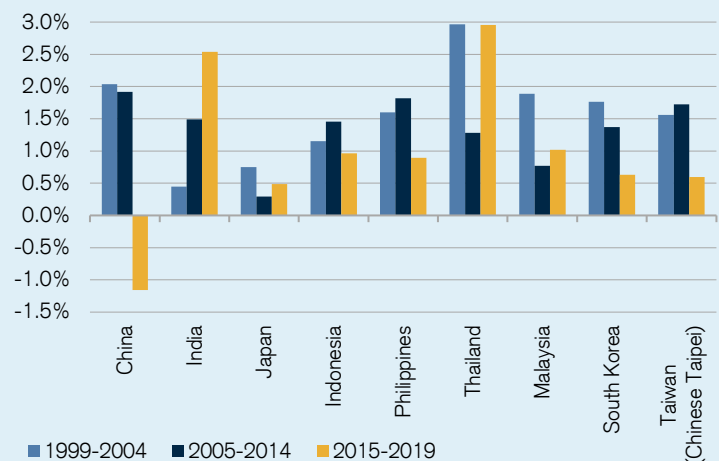
## Demographic pressures unlikely to push inflation higher

Several demographers worry about Asia's aging pushing up inflation globally, given its dominance in global manufacturing. These concerns are based on longer-term inflation trends, also called “low-frequency inflation.” Short-term inflation, or “high-frequency inflation,” is far more dependent on monetary factors (Milton Friedman's famous “inflation is always and everywhere a monetary phenomenon”) or fiscal factors (excessive

government spending, particularly if financed by printing money, causes an increase in inflation similar to what we are seeing currently). Needless to say, these factors, if left unchecked, also affect long-term inflation.

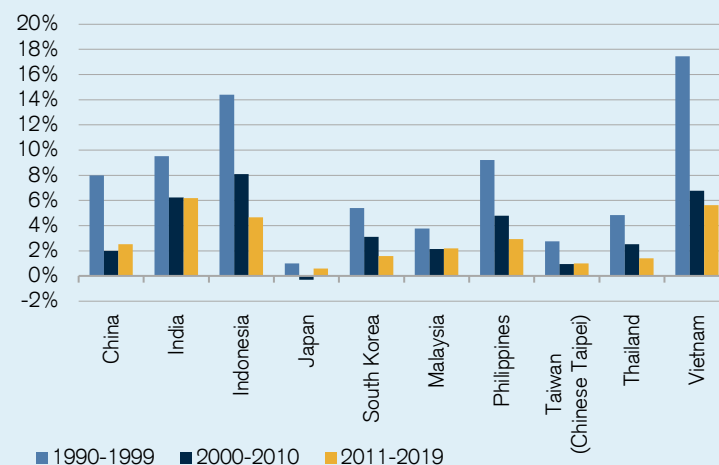
Over the three decades ending in 2019, all Asian economies have seen steadily lower inflation (Figure 8). Choosing 2019 as the last year sidesteps the substantial distortions introduced by COVID-19 and the fiscal and monetary interventions that followed, as well as the Russia-Ukraine conflict and the resultant changes in the global energy market. Under the assumption that current disruptions will not last for many years, these longer-term trends become important.

Figure 7: TFP growth over the decades for A-10 economies



Source: University of California, Davis, Credit Suisse

Figure 8: Inflation falling through the decades



Source: CEIC

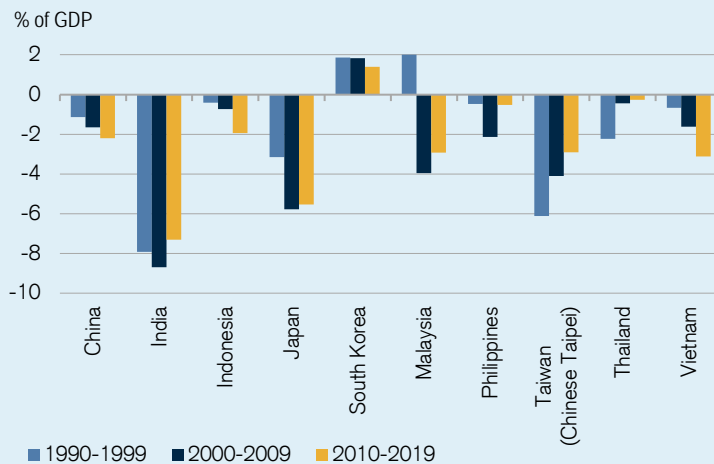
While some would attribute falling inflation to better demographics, i.e. a falling dependency ratio, we believe monetary and fiscal factors have been the primary drivers. Growth in broad money supply, for example, has slowed in all economies except Japan and Thailand. Even for these two countries, growth has been barely above real GDP growth, keeping inflationary impulses in check.

As seen recently in the developed economies, fiscal extravagance financed by monetary forbearance is often a driver of higher inflation. Fiscal deficits have either remained unchanged or have improved for some countries over the past decade (**Figure 9**), and have increased in China, Japan, Vietnam and to a small extent in

Indonesia. In China, given the economic dominance of state-owned enterprises (SOEs), it is difficult to separate out where the state ends and where the private sector begins, so the fiscal deficit ratio is generally hard to compare. However, we believe inflation control is one of the primary objectives of the Chinese government and that fiscal stimulus is carefully calibrated (except in 2010–12).

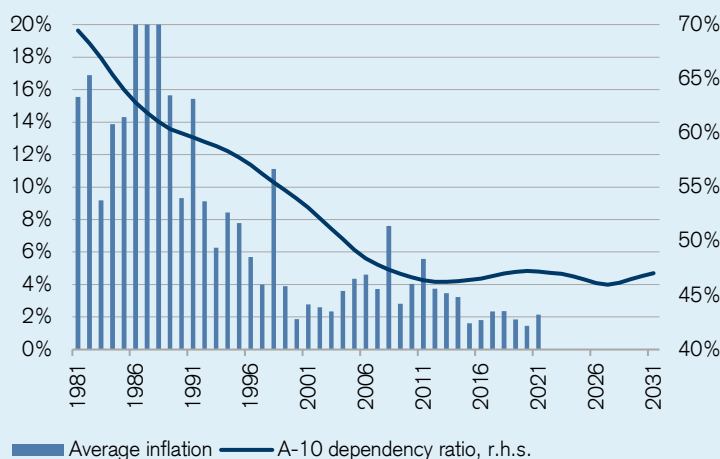
The increase in Japan's fiscal deficit over the last two decades has been substantial, but is part of an overall package aimed at fighting deflation and stimulating the economy, which has struggled to move out of the low growth phase it entered in the early 1990s. It is also driven by some demographic compulsions, like the social support per person rising above JPY 1 million per year. As important as the size of the fiscal deficit is also the quality of government expenditure. If this improves the economy's productive capacity by building infrastructure, as appears to be occurring in Indonesia and Vietnam, it may not be as inflationary.

**Figure 9: An overview of the fiscal situation**



Source: IMF WEO, Credit Suisse

**Figure 10: Dependency ratio vs. inflation**



Source: IMF WEO, UN WPP 2022, Credit Suisse

“  
The drop in A-10 inflation on average has coincided with the substantial fall in the dependency ratio

The concern of demographers is perhaps with regard to low-frequency inflation as the drop in A-10 inflation on average has coincided with the substantial fall in the dependency ratio (**Figure 10**). Economic literature discusses two opposing demographic forces that affect inflation: The first is that population aging can lead to deflationary pressures by lowering expectations of future economic growth. Further, inflation is often, if not always, a political decision. High and out-of-control inflation breaches the unstated contract between the citizen and the state, sometimes driving regime/government change. It disturbs economic functioning and hurts growth: hence policymakers try to avoid it. This may be exacerbated in an aging economy: the older cohort might prefer lower inflation than the young

due to the redistributive effect of inflation: it is a transfer from net consumers to net producers and, in an aging population, the former dominates.

The other is that labor supply shortages, as reflected in the dependency ratio, can drive inflation higher. An empirical study in 2015 of inflation in 22 advanced economies between 1955 and 2010 found a statistically and economically significant and stable relationship between the age structure of a population and low-frequency inflation<sup>1</sup>. It estimated that demography accounted for around one-third of the variation in inflation and the bulk of deceleration between the 1970s and 1990s. Another analysis of 20 OECD countries in the 1960–95 period also found a strong correlation between age structure and inflation<sup>2</sup>. We note that such analysis uses data from a period when global goods trade was lower than it is now.

## “ We believe productivity growth trends matter more than demographics

Even if the second argument were applicable, for the coming decade, the A-10 dependency ratio is forecast to remain unchanged, implying no additional inflationary pressures. One assumption here, as explained in detail in Chapter 2, is that younger nations in the A-10, such as India, Indonesia and the Philippines, will be able to deploy their workers into global supply chains. Even in China, unless productivity falls sharply, there is unlikely to be a shortage in the supply of labor. Thus, in our view, a commonly cited fear of labor shortages driving inflation higher is misplaced – we believe productivity growth trends matter more than demographics. Future inflation is likely to be affected by many factors unrelated to demographics such as the energy transition, trade wars, geopolitical conflicts, fiscal interventions to offset high energy costs for consumers and industry, political tolerance of high inflation in the developed markets, etc.

1. Can demography affect inflation and monetary policy? Juselius and Takats (BIS), 2015.

2. Can age structure forecast inflation trends? Lindh and Malmberg (2000).

## Real interest rates may remain low

Interest rates are basically the transfer price between a saver and an investor. In a world with relatively open capital markets, this price is determined therefore by the global supply of savings and the global demand for investment. This rate is determined by two sets of factors: those that drive inflation, and those that affect the real interest rate. As discussed above, at least for demographic factors, there is no reason to anticipate a sustained increase in inflation over the coming decade.

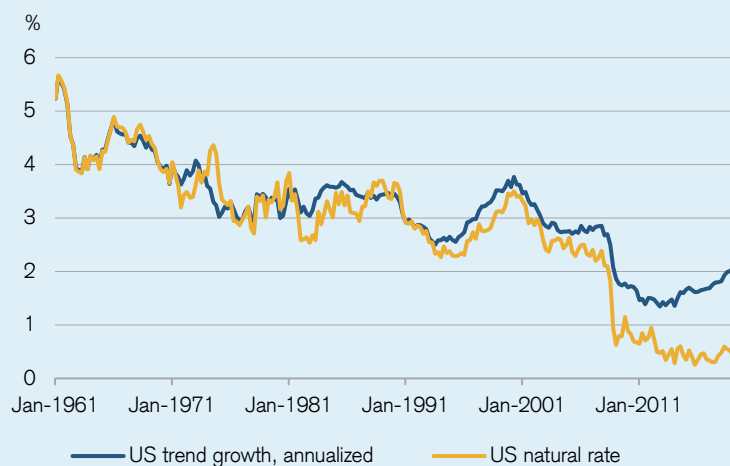
Long-term interest rates, as measured by the yield on the 10-year US treasury, have declined meaningfully over the past 40 years (**Figure 11**), and, despite the recent increases, are only back to 2007 levels. Free capital flows ensure that factors driving the decline in interest rates in the major advanced economies force rates lower globally. Many observers attribute some of the recent low rates to excessively loose monetary policy, including quantitative easing (central banks buying government bonds). While such policy actions have undoubtedly affected yields in the near term by compressing the premium savers demand for longer-term bonds, we believe the longer-term decline has structural reasons.

**Figure 11: US 10-year bond yields still low in a historical context despite the recent rise**



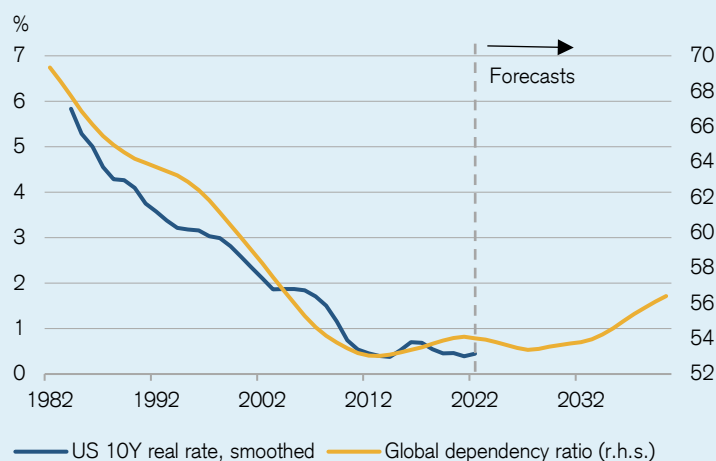
Source: Shiller, Credit Suisse

**Figure 12: Trend growth key driver of natural real interest rate**



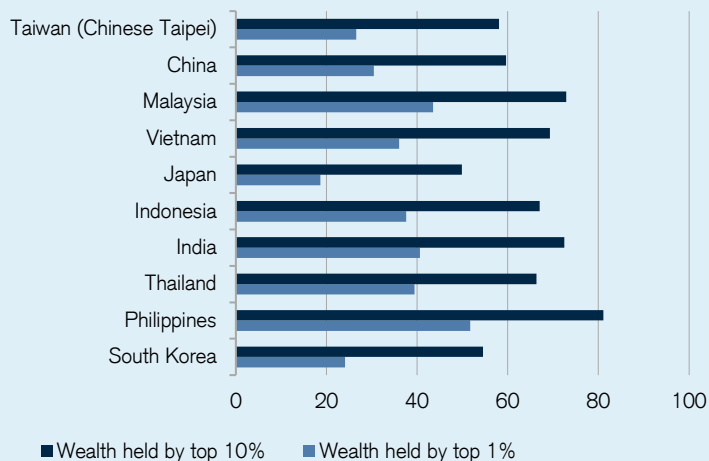
Source: NY FED, Credit Suisse

**Figure 13: Global dependency ratio vs. US real interest rate**



Source: Cleveland FED, UN Population Stats, Credit Suisse

**Figure 14: Wealth share of top 1% and 10%**



Source: Credit Suisse Wealth Report

These factors include a slowdown in productivity growth, a “global savings glut,”<sup>3</sup> an increase in risk perception<sup>4</sup>, which then drove a shortage of safe assets<sup>5</sup> (e.g. as cross-border savings grow, there are few universally safe-haven securities; in local markets, this role is played by the sovereign bond), which have driven down long-term real rates. Further, a decline in inflation expectations, and a reduction in the associated inflation risk premia also affected nominal rates.

Several of these factors are affected by demographics. These include saving decisions, productivity growth<sup>6</sup> as well as demand for safe assets. Declining population growth, for example, can even have a negative effect on productivity growth<sup>7</sup>, among other channels by reducing incentives to invest in R&D and innovation<sup>8</sup>. This is one of the key determinants of the longer-run equilibrium interest rate. More intuitively, investment needs decline – as discussed in the third chapter of this report – for housing as well as infrastructure growth. A decline in trend GDP growth is an important driver of the natural real interest rate (Figure 12).

In our view, A-10 savings are an important causal factor in the visible correlation between the global dependency ratio and US real rates (Figure 13). It is important, however, to remember that demographics are not the only variable affecting real rates.

### Will changing demographics increase inequality?

There are two main concerns with regard to the impact of demographics on inequality. The first is the trend of interest rates – a global surge in demand for safe assets drives down yields, which in turn affect interest rates more broadly. Low interest rates then increase the value of financial assets, which primarily benefits the rich. Given our expectation that the demand for safe assets may stay elevated for at least another decade, this means interest rates may settle at a low level again once the current macroeconomic volatility is over. Asia already has high wealth inequality, with 60%–80% of wealth in the hands of the top 10% of the population (Figure 14).

3. “The Global Savings Glut and the US. Current Account Deficit,” Ben Bernanke  
 4. Teulings and Baldwin, 2014; Bean et al., 2015; Gourinchas et al., 2016  
 5. “The Safe Assets Shortage Conundrum,” Caballero, JEP, 2017.  
 6. “Why have interest rates fallen far below the return on capital?” Marx et al, BIS, 2019  
 7. “Demographics and Their Implications for the Economy and Policy,” Cleveland Fed  
 8. “Long-term interest rates: a survey,” July 2015, Obama White House archives

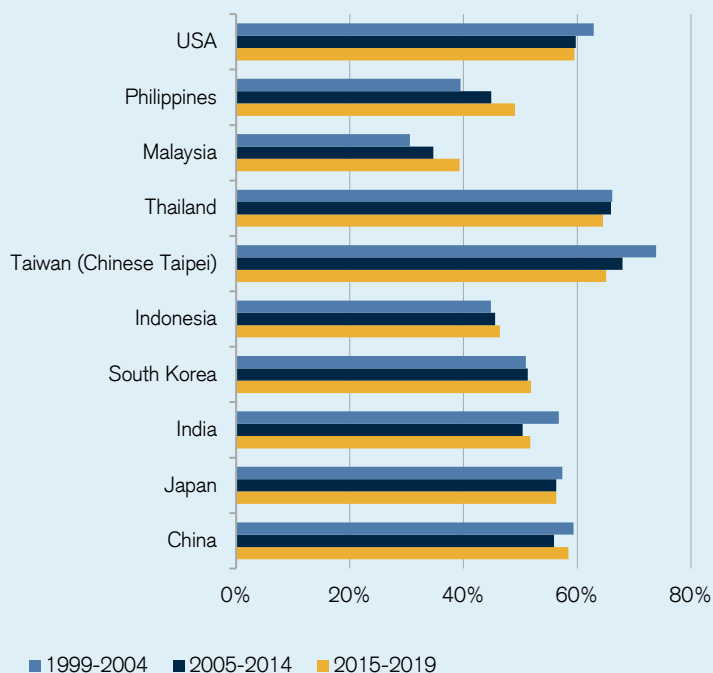
The second concern relates to the labor share of income. For income inequality to decline, which is nearly by definition the precursor to the reduction in the inequality of wealth (the only exceptions being revolutions that forcibly redistribute wealth or economic crises that destroy wealth), the labor share of income must rise and the capital share of income must fall (Figure 15).

## “ Among the A-10 economies, a large part of the income generated is captured by capital

Among the A-10 economies, a large part of the income generated is captured by capital, with the ratio high and stable in Thailand, relatively stable in the 50%–60% range in South Korea, India, Japan and China. Although it has increased over time, it is particularly low in Malaysia, Indonesia and the Philippines. Changes to such ratios tend to be political in nature, and government economic policies do not change quickly. In our view, this is likely to worsen over the next decade.

Political change does occur. A number of advanced economies (e.g. the United Kingdom, Germany and Canada) have introduced or raised minimum wages much faster than normal in recent years. Among developing economies, a similar pattern is visible in Poland, Hungary, Mexico and South Korea. Given a still high share of informal workers, raising the level of minimum wages is less effective in the other A-10 economies. Further, while these wage increases may help reduce income inequality, they would also affect global competitiveness in an interconnected world and result in currency adjustments, unless the economy in question is able to increase labor productivity substantially. Thus, inequality of wealth may worsen in the A-10 economies going forward before it improves.

**Figure 15: Labor share of income is rising in some economies**



Source: University of California, Davis, Credit Suisse



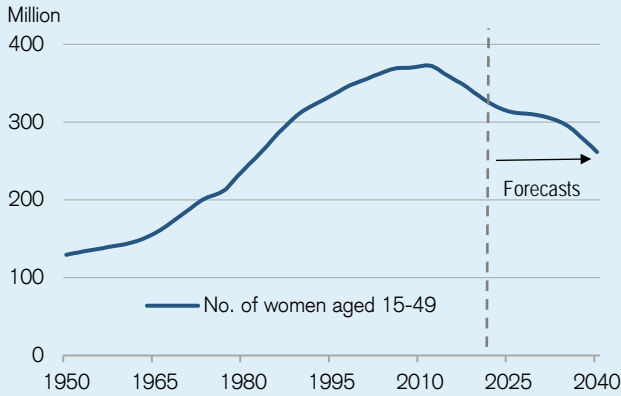
# Country profiles



# China

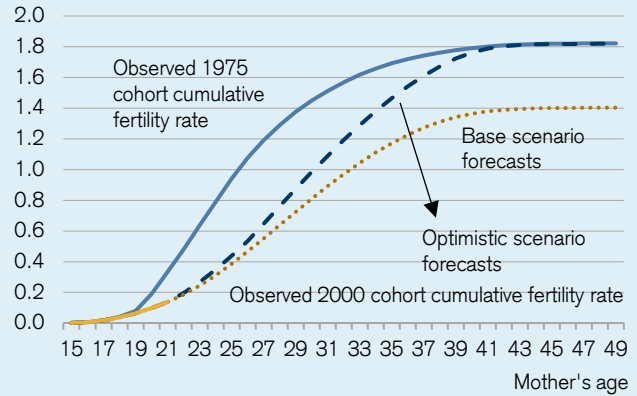
Edmond Huang, Jinfeng Shi, Herman Chan, Jasmine Wang, Yiming Li

**Figure 1: Number of women of reproductive age over time**



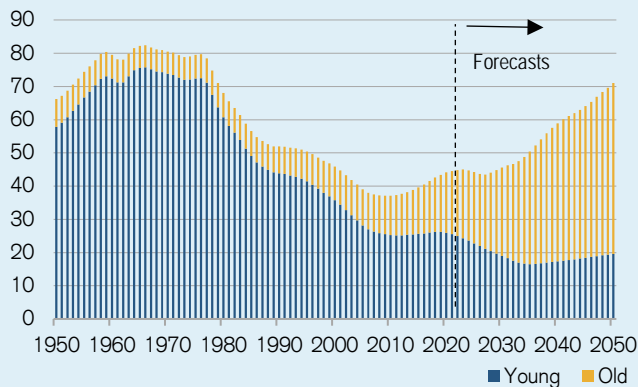
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



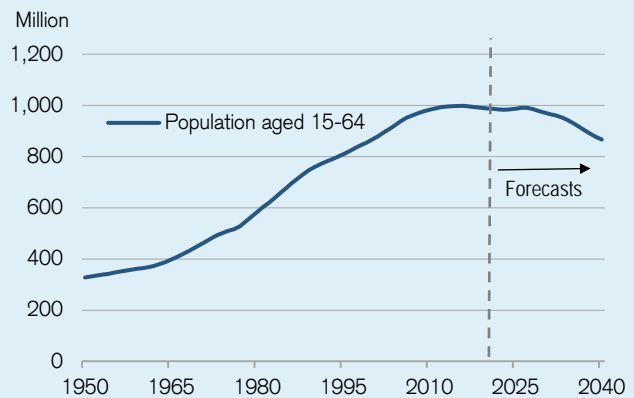
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



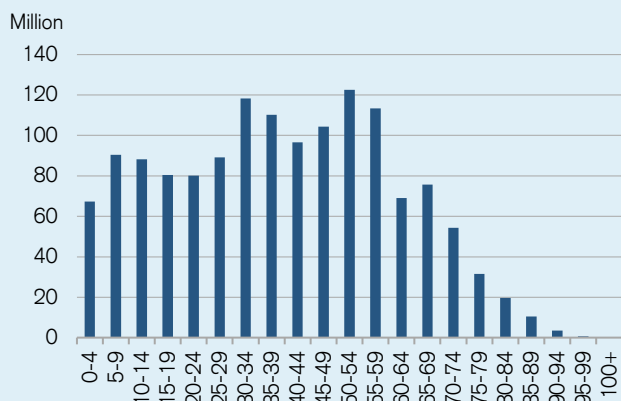
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15–64), 1950–2040**



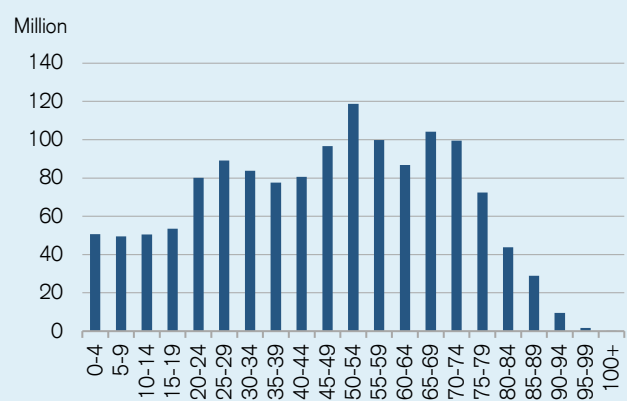
Source: UNDP, Credit Suisse

**Figure 5: Population by age group in 2022**



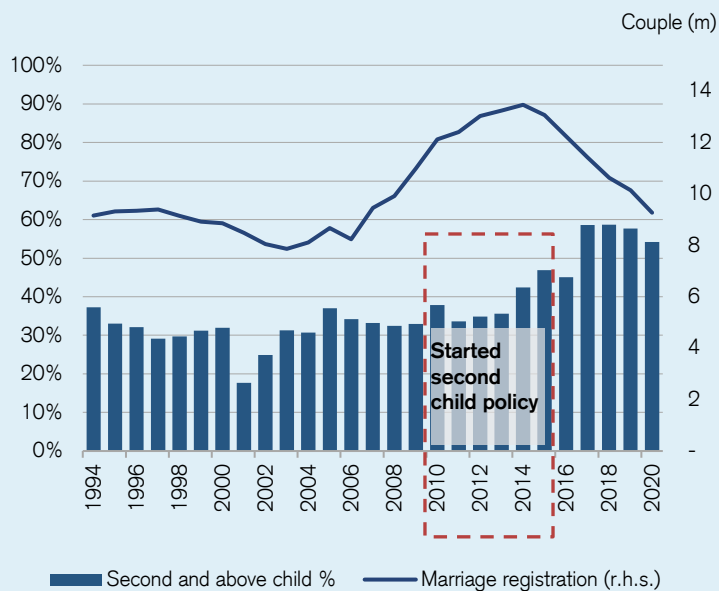
Source: UNDP, Credit Suisse

**Figure 6: Population by age group in 2040**



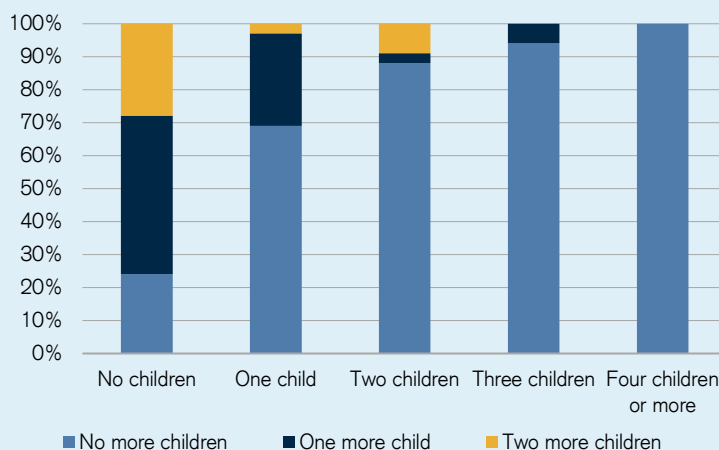
Source: UNDP, Credit Suisse

**Figure 7: Marriage registration falling, rising share of second children**



Source: NBS, Credit Suisse

**Figure 8: CS Survey – very few couples want to have two children**



Source: CS-Nielsen Survey, Credit Suisse

China runs the risk of falling into a “low fertility period”: its total fertility rate (TFR), which has been below the replacement level fertility rate of 2.1 since the 1990s, fell to 1.3 in 2020. Now its demographic transition could accelerate, given the decline in the number of women of child-bearing age and the 2000 cohort of Chinese women projected to have a TFR of 1.4 (due to delayed marriage and better education and workforce participation) despite the repeal of the one child policy.

As China’s first and second waves of baby boomers (born in the 1950s and 1960s) become older, its demographic dividend is tapering off sharply, with the average age rising from 30 to around 40 in a period of just 24 years, among the fastest increases in history. The overall dependency ratio bottomed in 2009 and the old-age dependency ratio is set to rise rapidly. Hence China needs to explore a variety of policy options to preserve the fiscal sustainability of pension and healthcare expenditures.

### Lower fertility willingness versus three-child policy

The young in China appear reluctant to get married. Annual marriage registration dropped steadily from 13.5 million couples in 2014 to just 9.3 million in 2020 (Figure 7), with the average age of first marriages rising from 26 to 29 years. Once the government relaxed the one child policy, the share of second or more children in overall childbirths increased from 32% in 2000 to 54% in 2020, but also because the number of first births continued to fall.

This is a demographic challenge for the government, where the nation’s young couples are less willing to raise children. China unveiled a policy in 2021 to allow all couples to have three children, but it may have to do more to boost the birth rate. Our survey of 1,000 Chinese urban residents reveals a low desire for children. Even for survey respondents who do not have any children, 48% of them would like to have only one child, while 24% do not want any children (Figure 8).

### Shrinking, but better educated and urbanized workforce

The proportion of China’s working-age population (aged 15–64) peaked at 74.5% in 2010 and continued to decline to 68.6% in 2020. Offsetting this downward trajectory in numbers are two structural changes in China’s labor force. First, it has become better educated and more service oriented. The percentage of the working population holding college degrees and above increased significantly from 2.5% in 1990 to 26.5% in

2020 (**Figure 9**). In 2020, service-sector employees accounted for 47.7% of working-age population compared to only 18.5% in 1990 amid China's push toward a consumption-driven development model.

More importantly, China has been experiencing the largest rural to urban migration in history. The urban population in 2020 exceeded 900 million people, taking the urbanization rate to 64%, up 14 percentage points from 2010. However, this still lags developed countries and can rise further – as per the World Bank, the USA is 82% urbanized and Japan is 92% urbanized, which is the highest percentage among the major economies.

## Education drives incomes and a growing middle class

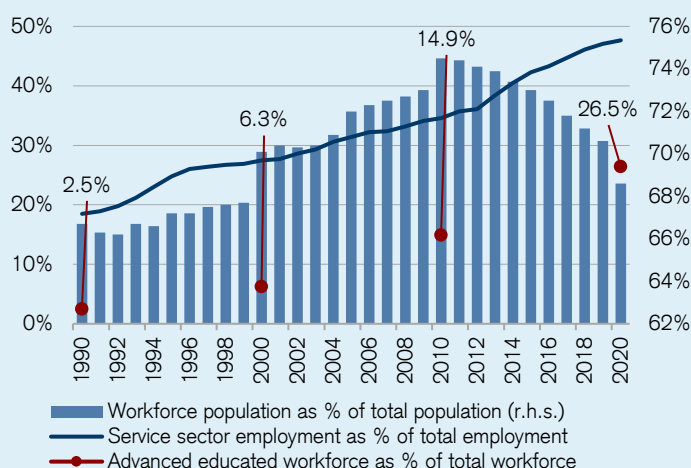
The rise of China's middle class is a powerful driver of economic growth and underpins rising domestic consumption. According to the National Bureau of Statistics (NBS), China has about 400 million people (roughly 30% of the population) classified as middle class, with an annual household income of between RMB 100,000 and RMB 500,000. Our survey (which had urban respondents and was conducted online) likely had an upper-income bias and shows that over 60% of the surveyed respondents' monthly household income falls in the range of RMB 15,000–50,000, much higher than the NBS level (**Figure 10**). That said, given the higher incomes of better-educated respondents, this figure also supports the rising productivity argument (**Figure 11**).

## Changing wealth distribution and savings behavior

After rapid economic growth, China's wealth distribution is tilting toward the better-educated and wealthier families. According to a nationwide survey conducted by the People's Bank of China (PBOC) in 2019, the richest families (10% of surveyed households) owned around 47.5% of total wealth and their average household wealth was 36 times that of the poorest families. Meanwhile, people who were born in the 1960s and 1970s benefited most from China's economic reform and opening-up program starting in the late 1970s (**Figure 12**). The PBOC survey also found that property is the most favored asset, accounting for around 59% of total household assets (versus 30.6% in the USA), while financial assets, including cash, bank deposits and wealth management products, only accounted for 21%.

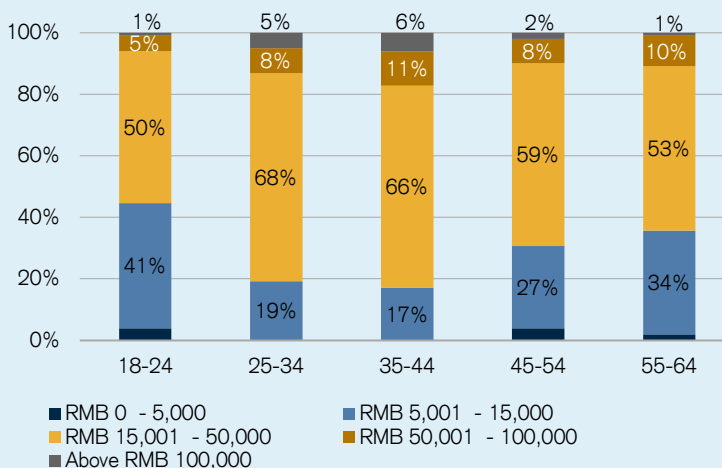
Household savings behavior adapts to demographic change. In our survey, 62%–66% of the middle-aged respondents need to save

**Figure 9: Better-educated workers, tilting to services sector**



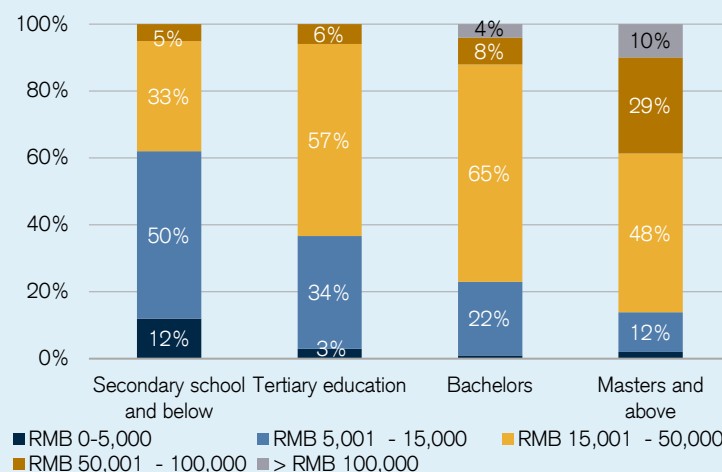
Source: NBS, China's National Population Census, Wind, Credit Suisse

**Figure 10: CS Survey – monthly household income distribution**



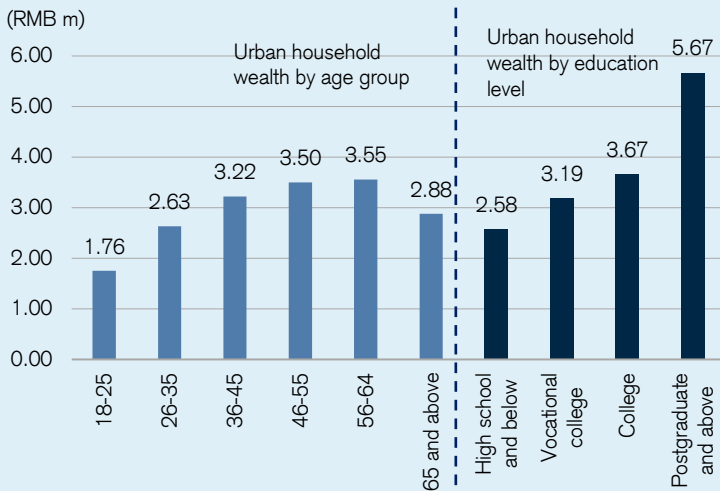
Source: CS-Nielsen Survey, Credit Suisse

**Figure 11: CS Survey – people with higher education earn more**



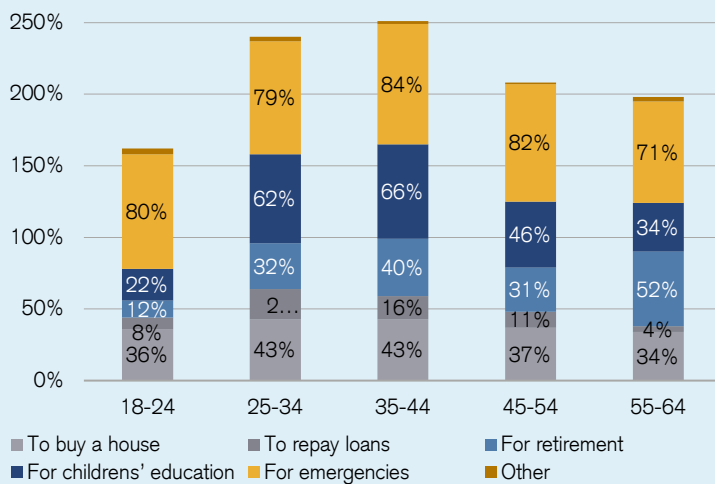
Source: CS-Nielsen Survey, Credit Suisse

**Figure 12: China's urban household wealth by age and education**



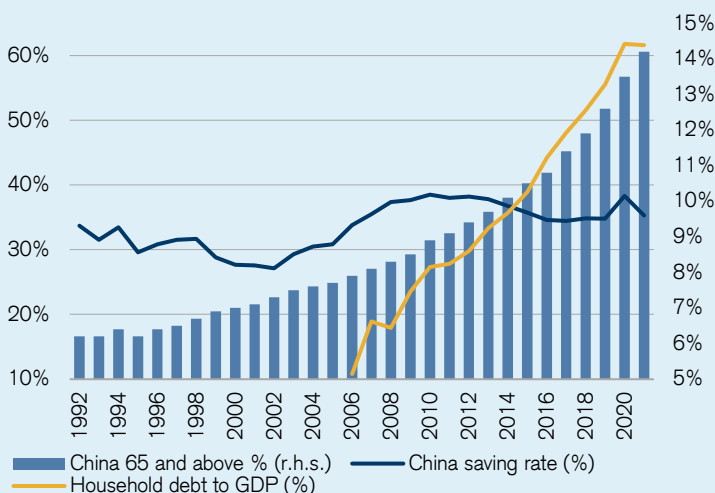
Source: Household Finance Survey, PBoC, Credit Suisse. Data as of 2019

**Figure 13: CS Survey – purpose of savings by age**



Source: CS-Nielsen Survey, Credit Suisse

**Figure 14: Household saving down, debt rising**



Source: Household Finance Survey, PBoC, Credit Suisse. Data as of 2019

for their children's future education, while respondents aged 55–64 tend to save more for retirement as they are closer to retirement. Across different age groups, the proportion of respondents saving to buy a house is at a stable level, reflecting Chinese residents' preference for houses, regardless of age difference. Further, given insufficient pension and social insurance coverage, Chinese households must save extra for old-age care and family emergencies. The Nielsen Survey result shows that over 80% of the surveyed residents across age groups need to save for emergencies (Figure 13).

### Household debt rising as savings level out

The surge in home prices and household debt over the past decade has been a major driver of China's falling birth rate. According to the Bank for International Settlements (BIS), China's household debt to GDP ratio increased sharply from 17.9% in 2008 to 61.6% in 2020, in tandem with urbanization and household investment in the real estate market (Figure 14).

In our survey, 91% of respondents consider owning a house important. Of those who consider owning a house important, 52% cite security as the main reason for owning a house, followed by 27% who consider it a great investment and only 12% who consider renting inconvenient. Rising household debt has reduced dispensable income and hence the saving rate, which dropped to around 34.8% in 2019 from its peak of 38.5% in 2010. During the COVID-19 pandemic, however, the savings rate rebounded to 38.3% in 2020.

### Over-reliance on first pillar pension

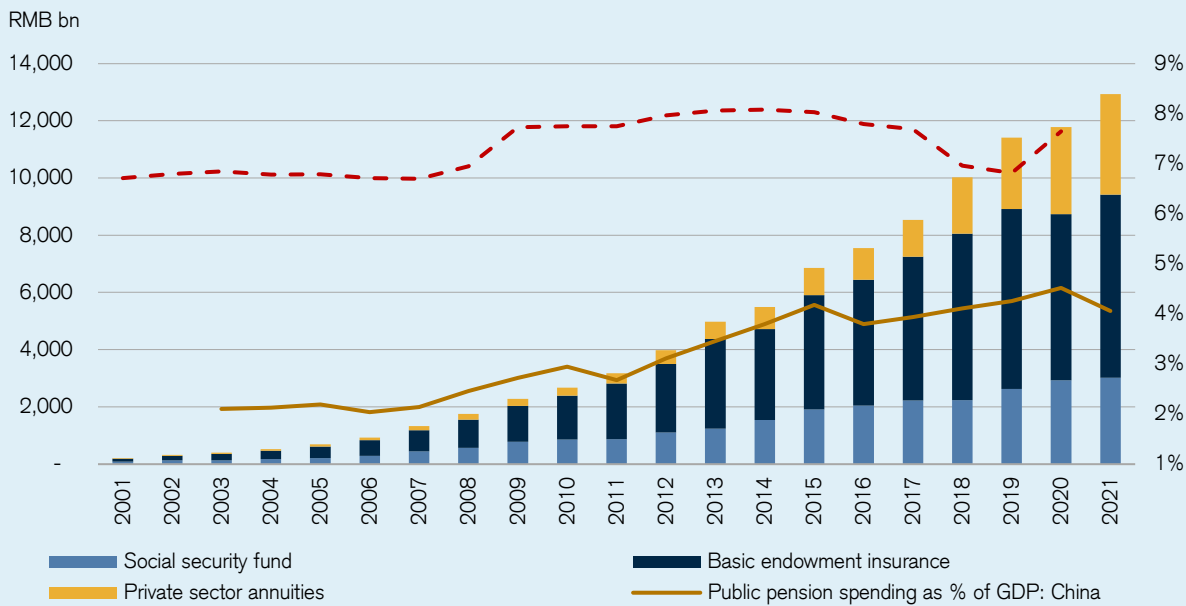
The development of the pension system is important for people to reliably plan for their old age. In China, the modern public pension system was launched in 1997 and has three pillars: the first pension pillar is the basic state pension funded by public sector, the second is the voluntary employee pension and the third is made up of private pensions. The first pillar accounts for around 72.8% of China's pension spending and, over the past two decades, has increased significantly to about RMB 9.4 trillion in 2021 from RMB 18.6 billion in 2001. However, this over-reliance on the first pillar poses a great challenge to public finances amid China's aging population, such that more contributions from SOE capital and the active development of the third pillar are the direction China's pension reform still needs to take to ease the burden (see Figure 15).

## Out-of-pocket health spending lower, but still high

Population aging is adding pressure on China's fiscal policy, with public health fiscal expenditure rising to 7.1% of GDP in 2020 from 4.5% in 2000. To alleviate financial pressure for medical insurance and residents, China has been pushing down prices of certain drugs and medical devices since its early days of healthcare reform. The most effective approach to lowering prices so far has

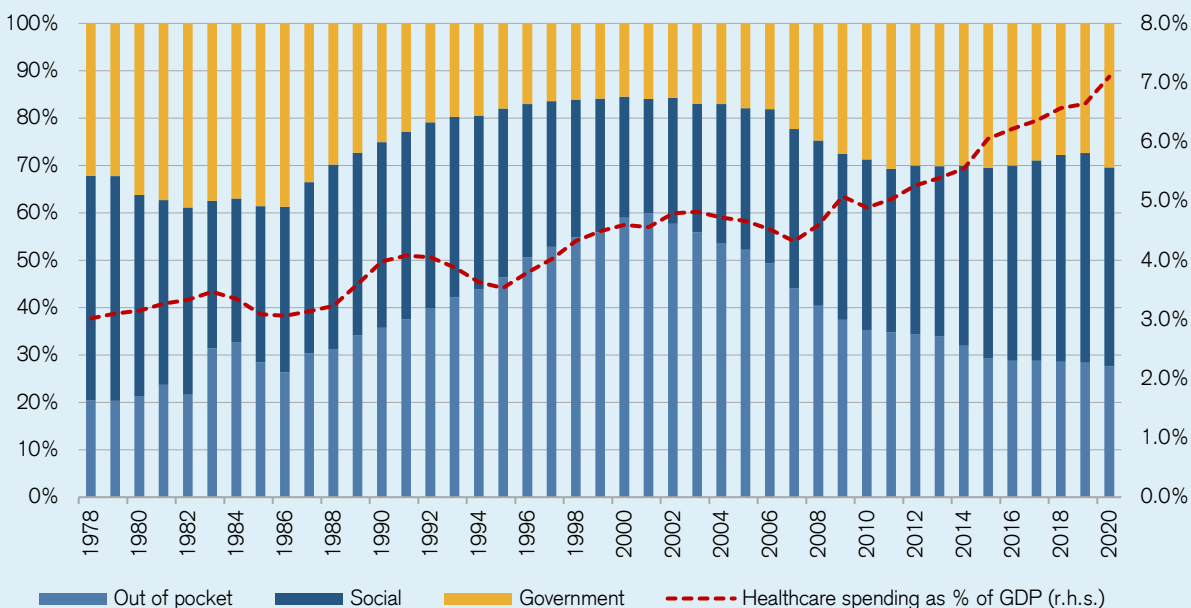
been government-driven centralized procurement programs launched by the National Healthcare Security Administration (NHSA) in 2018. This decades-long healthcare reform, as well as increased public healthcare insurance coverage and the programs to lower healthcare pricing have helped Chinese residents' out-of-pocket healthcare expenditure drop to 28.8% of total healthcare expenses in 2020, 13 percentage points lower than in 2008 (**Figure 16**).

**Figure 15: Pension spending – getting old before getting rich**



Source: Ministry of Human Resources and Social Security, OECD, Credit Suisse

**Figure 16: Healthcare expenditure**

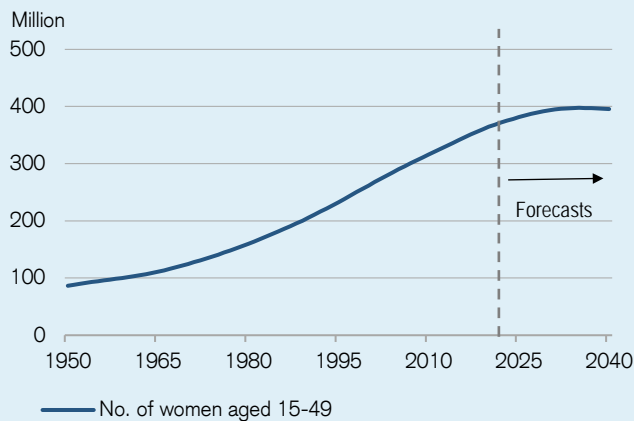


Source: NHC, Wind, Credit Suisse

# India

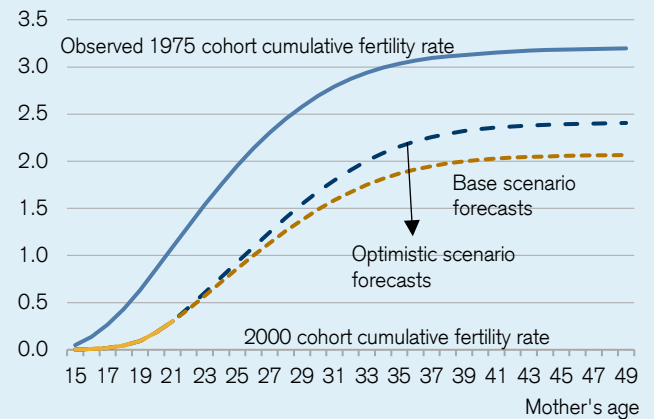
Neelkanth Mishra, Abhay Khaitan

**Figure 1: Number of women of reproductive age over time**



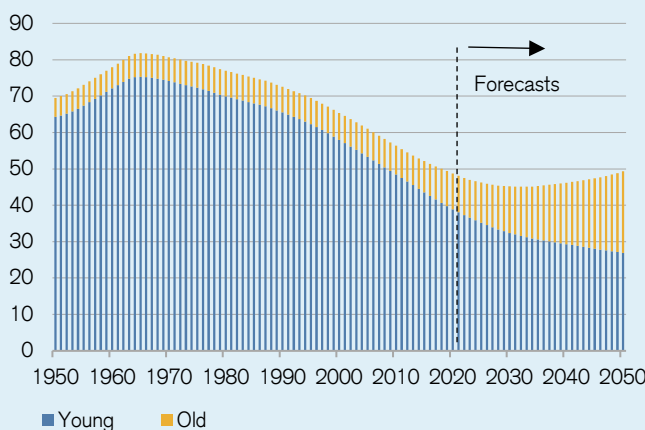
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



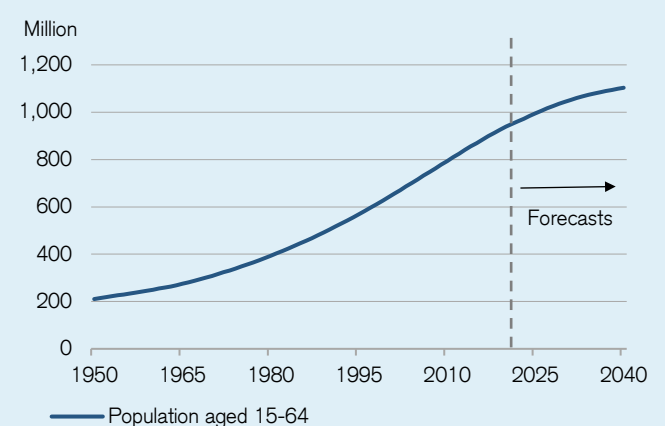
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



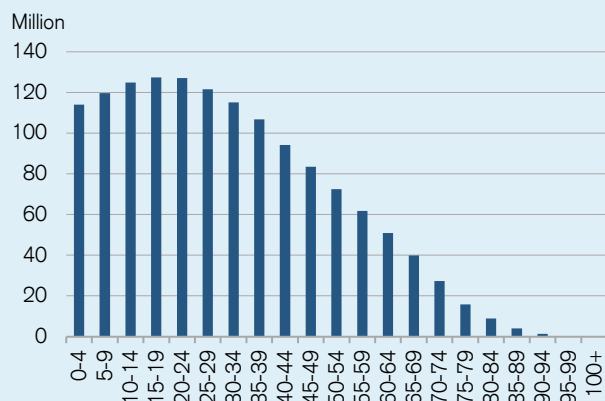
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15-64), 1950-2040**



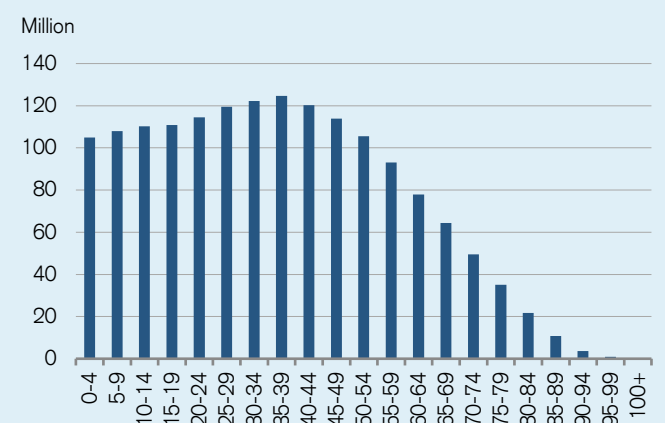
Source: UNDP, Credit Suisse

**Figure 5: Population by age group in 2022**



Source: UNDP, Credit Suisse

**Figure 6: Population by age group in 2040**



Source: UNDP, Credit Suisse

While India's TFR has now rapidly fallen below replacement levels, as per the United Nations, its working-age population is forecast to grow by 200 million people in the next 15 years (the highest rate globally), with the country's dependency ratio falling until 2033. It also has one of the youngest populations of the major world economies (median age 28).

The key to whether India will be able to take advantage of its demographic dividend depends on (1) an improvement in the quality of its workforce, (2) changes in India's ground-level infrastructure, (3) the role of the government, and (4) the pattern of savings that can support a growing elderly population.

### Quality of Indian workforce improving, but slowly

According to the National Family Health Survey, the share of children with at least 12 years of schooling rose 12 percentage points to 32% between 2006 and 2020 (Figure 7), and 27% are now enrolled in colleges compared to 12% in 2006. This trend needs to rise further as currently only 10% of adults in India can read an English sentence.

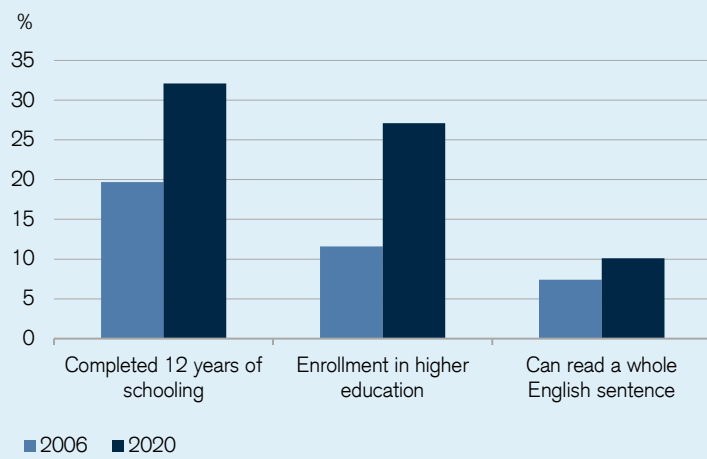
Physical capabilities are also improving, with 80% of adult men in India now either at normal weight (BMI index >18.5 and <25) or overweight (BMI index >25 and <30), improving significantly from 63% in 2006. The rest are either thin or obese, and may have physical challenges working. A similar improvement can be seen for adult women as well, although to a lesser degree (Figure 8).

### India addressing physical infrastructure constraints

The pace of national highway construction has been strong over the last decade, with 2021 seeing record-high construction despite the COVID pandemic/restrictions in most parts of India. Similarly, rural all-weather road connectivity has improved significantly, owing to the Pradhan Mantri Gram Sadak Yojana (PMGSY) rural roads scheme and several similar state-level schemes. These not only improve mobility for labor and goods, but they also become the bedrock for other infrastructure (e.g. rural roads help electricity and telecommunications) and help improve India's share in global value chains.

Government policies have also prioritized household-level productivity: over the past two years, the number of households with a functional water tap connection has grown from 40 million to over 90 million. With a 33% increase in budgetary allocation in 2023, the

**Figure 7: Literacy improving, but much more needed**



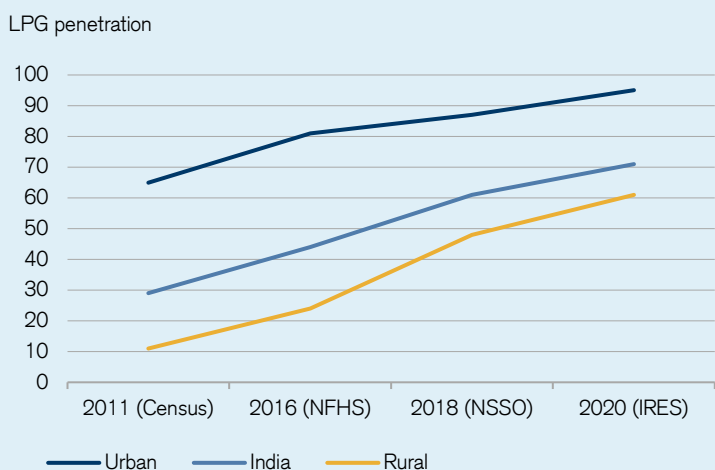
Source: National Family and Health Survey (Editions 3 and 5)

**Figure 8: More adult men/women are physically employable**



Source: National Family and Health Survey (Editions 3 and 5)

**Figure 9: LPG penetration has now risen to 71%**



Source: CME



pace of new connections should increase meaningfully. More than just the availability of clean water, new water tap connections save time for household members, particularly women. Similarly, 71% of households had access to cooking gas in 2020 versus only 60% in 2018 and 30% in 2011. The switch away from firewood helps also saves time for members of the household in addition to the health benefits (Figure 9).

## Growth in goods and services exports set to boost jobs

After a decade of stagnation, India's share of global merchandise exports rose again last year (Figure 10). While gains in commodities may be temporary and a global inventory glut can hurt in the near term, medium-term momentum should persist in electronics (large market size, policy support, and good traction with key original equipment manufacturers), specialty chemicals (a decade of steady growth has brought scale to firms, which is important for global reach) and textiles (exports growing after a decade of stagnation, particularly in upstream yarn/fabric and apparels). Government initiatives like the Production Linked Incentive (PLI) scheme, marking a significant turn in India's industrial policy, are also helping to build traction in some sectors.

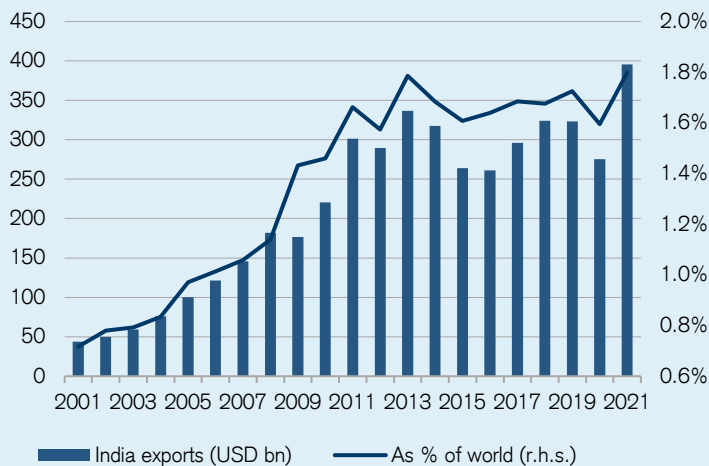
India's services exports are also now moving up the value chain, with the spurt in Software-as-a-Service (SaaS) startups, and a broad-based expansion in Global Capability Centres (GCC), which exist for nearly all global sectors and firms, not just for software. Even in software, where India has added five million engineers in 40 years, steadily rising growth in global demand for software can mean a doubling in the next ten years (Figure 11). Only India can supply workers at such a scale, in our view.

## Government reforms helping; states can ramp up too

Several central government level reforms such as Aadhar, UPI and Jan Dhan have led to a rapid digitalization of processes, particularly in digital payments (now 35% of all payments versus 5% in 2016) and digital lending. FasTag has revolutionized toll payments, helping speed up traffic and improving transparency in toll collection and/or reducing revenue leakage. The corporatization of the Ordnance Factory Board (OFB) is an opportunity for India to improve domestic capabilities in defense production and increase competitiveness. The simplification of labor laws and a cut in the corporate tax rate have helped India climb the World Bank's Ease of Doing Business Index rankings. Private funding markets have emerged, encouraging entrepreneurs to embark on their own ventures and jobs are emerging in several urban centers. In our survey, around 60% of young people (aged 18–34) have found jobs in their own city compared to around 40% for older people (aged 55–64, Figure 12)

In addition to the central reforms, the next generation of reforms needs to occur at state level as the states control most laws related to land, labor, environment and law and order. Several of the larger states are showing a strong resolve for reform. There are meaningful

**Figure 10: India's share of global goods exports rising again**



Source: Trademap

**Figure 11: India's IT pool could double to ten million people by 2032**



Source: NASSCOM, Credit Suisse Estimates

incentives for firms: from capital subsidies to rebates on land, SGST tax reimbursement and funds for skill upgradation, but there are areas where there is still scope for further reforms including urban governance, power distribution, land acquisition and pollution control/environmental laws.

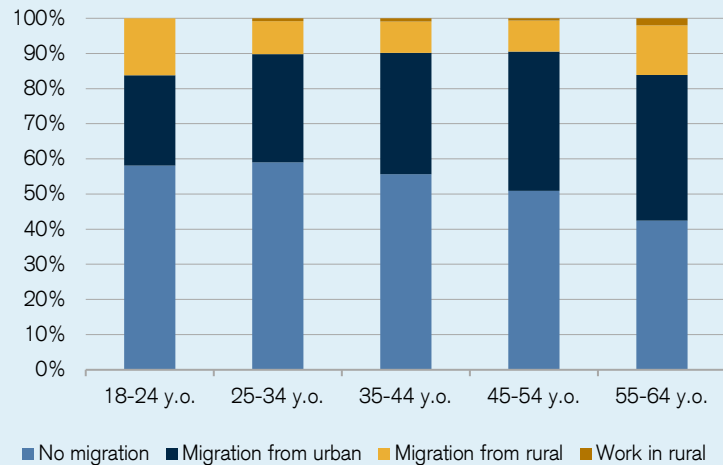
### Steady rise in financial savings; better risk appetite

Household financial savings as a share of GDP rose to a multi-decade high of 16% in 2021. While some of this was due to the drop in discretionary spending during the pandemic and a surge in precautionary savings due to concerns about future income flows, the financialization of household savings has nevertheless continued in 2022, with record-high systematic investment plans (SIP), inflows into mutual funds and a steady increase in the number of demat (dematerialized) and/or trading accounts.

Since our survey has an upper-income bias (as it was conducted online and in English), 43% of respondents plan to save more than 20% of their monthly income, and more than 70% prefer financial to physical savings. This is in sharp contrast to 93% of India's household savings being in non-financial assets. This change in savings behavior can have significant implications for the economy as it could enhance transparency in tax collections and improve state capacity. For savers, increased financialization should enable steady returns, which should act as a cushion in later years. While the share of risky assets among total financial assets is still low in India versus other economies, rising income levels are likely to increase risk appetite and shift preferences of savings to stocks/managed funds from bank deposits/currency (Figure 13).

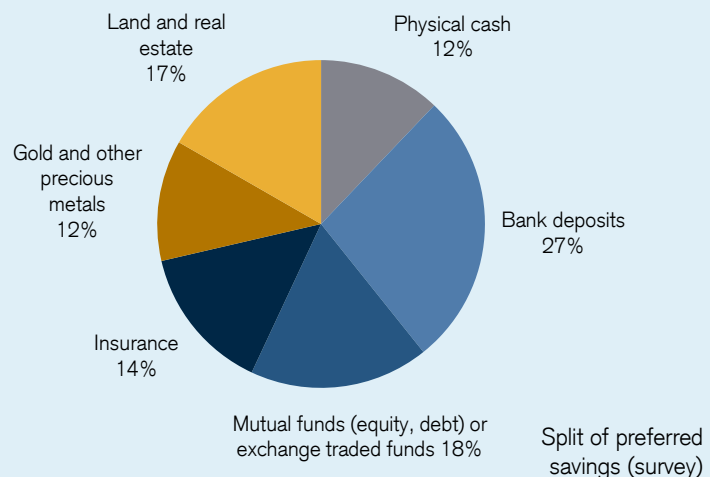
In our survey, which mostly captured educated urban respondents, a high share of young people already have brokerage accounts, indicating a higher risk appetite. As the level of education increases, more people are likely to follow a similar trend. Overall, our sample shows high optimism in respect to future prospects, with 80%–90% of the population among different age groups believing that they will earn more and have a better life than their parents (Figure 14).

Figure 12: CS Survey – migration trend lower among young people



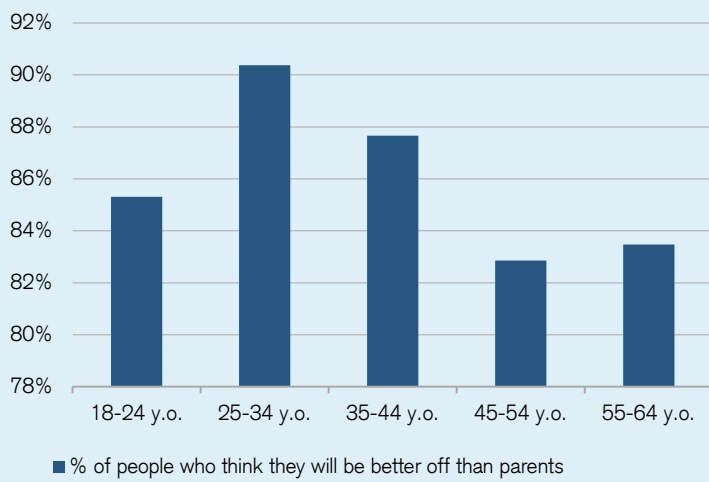
Source: National Family and Health Survey (Editions 3 and 5)

Figure 13: CS Survey – 71% of people prefer financial savings



Source: Nielsen

**Figure 14: CS Survey – high degree of optimism across ages**



Source: Nielsen

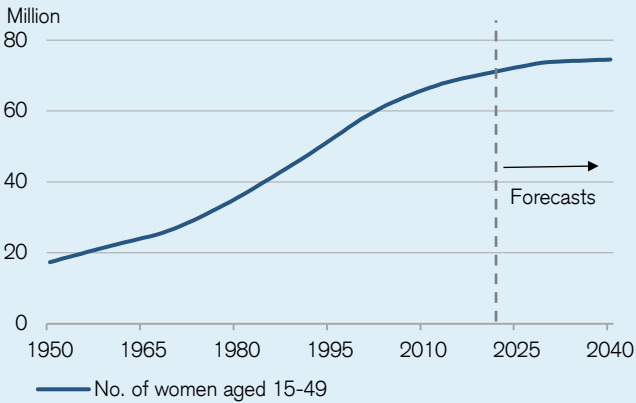
## **Pension coverage and healthcare remain the key risks**

Existing pension/retirement schemes in India mainly cover the organized sector and currently cover only 12% of the workforce. While the ratio has been rising, it is still low compared to other major economies. Schemes like the Atal Pension Yojna pension plan have been launched to cover the unorganized sector where the subscriber will be paid INR 1,000–5,000 post-retirement (based on contributions), but coverage remains low. Similarly, India's public healthcare spending as a share of GDP has remained flat in the last ten years at around 3%, which is much lower than other large economies like the USA and China, and needs to be addressed before the population starts to age.

# Indonesia

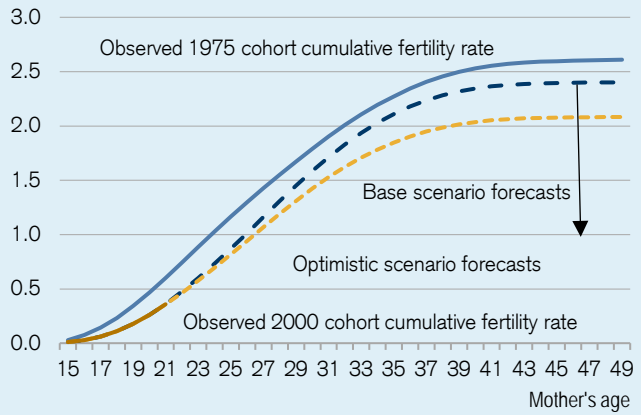
Hanel Topada, Naufal Nuh

**Figure 1: Number of women of reproductive age over time**



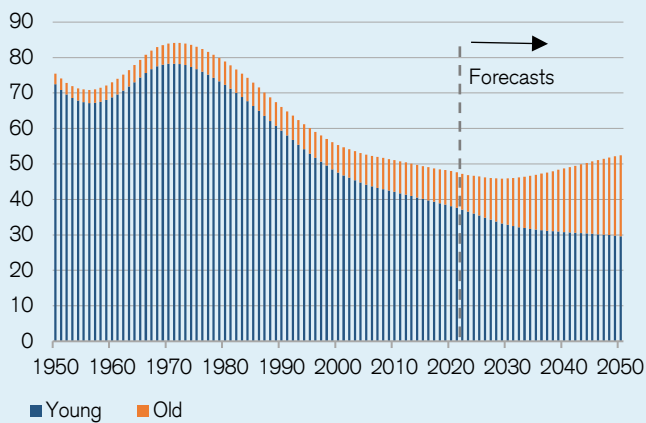
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



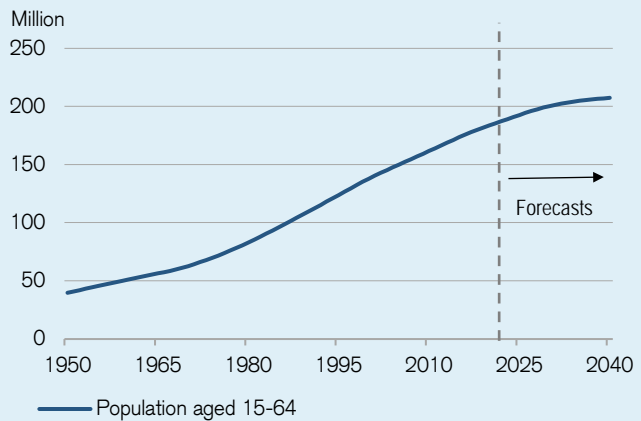
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



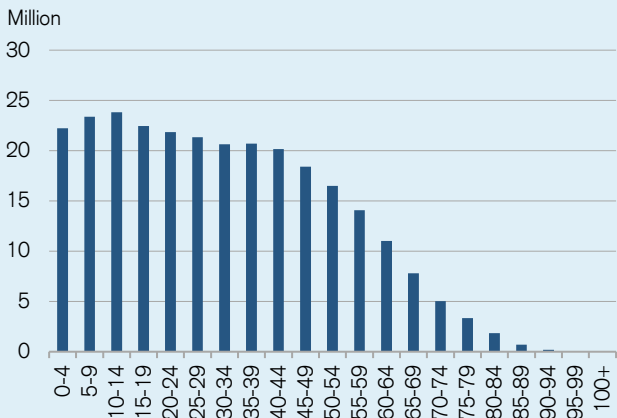
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15–64) 1950–2040**



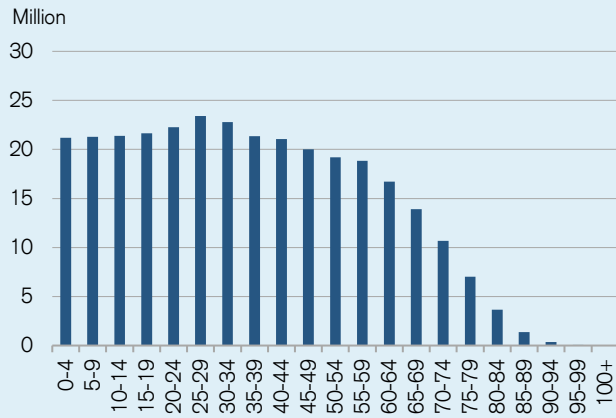
Source: UNDP, Credit Suisse

**Figure 5: Population by age group in 2022**



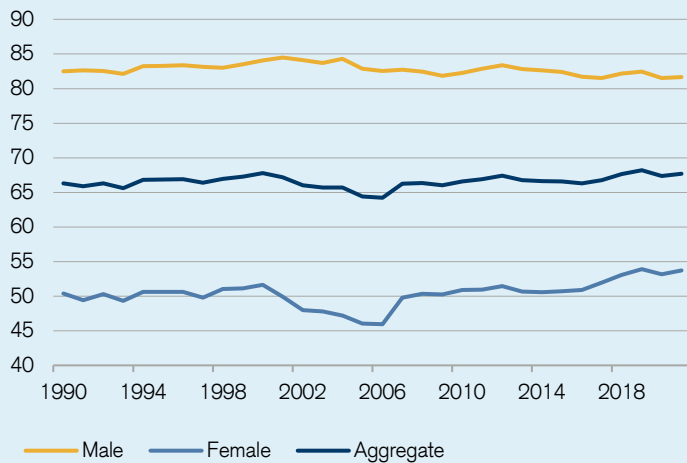
Source: UNDP, Credit Suisse

**Figure 6: Population by age group in 2040**



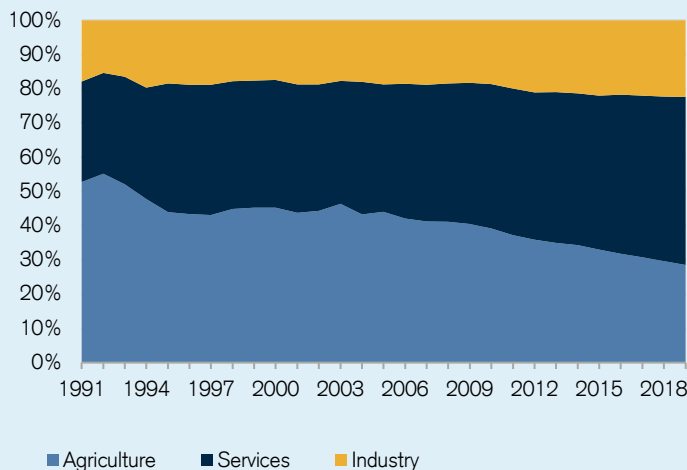
Source: UNDP, Credit Suisse

**Figure 7: Indonesia's labor participation rate is stable**



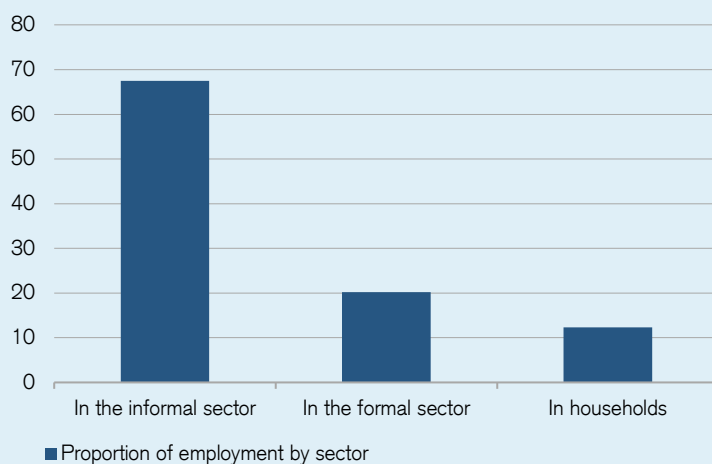
Source: ILO, Credit Suisse

**Figure 8: Agriculture share of workforce could fall to 20% in 2030**



Source: ILO, Credit Suisse estimates

**Figure 9: Workforce currently has high informality**



Source: UNDP, Credit Suisse

Indonesia may experience one of the best demographic trends over the next few decades. With a gradual fall in the total fertility rate, in contrast to the steep declines seen elsewhere in Asia, growth in the working-age population should continue until 2055, as the dependency ratio declines – a rare occurrence among middle-income economies. The average age will rise to 40 only in 2066.

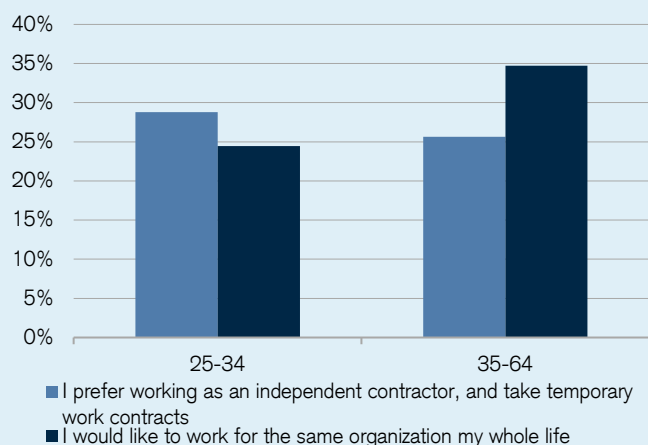
### Formalization and growth in industry/services jobs

There are three factors in addition to a growing workforce that support the supply of labor in the economy. First, Indonesia's workforce participation rate is also stable and relatively high, unlike the decline seen in other economies (**Figure 7**), helped by an improving female labor force participation rate, although male participation is also largely stable. Second, the share of workers in agriculture has fallen sharply from 40% in 2010 to 30% in 2019. So far, the absolute number of workers in agriculture has remained somewhat stable, whereas industrial and services employment has expanded. Based on current trends, which in our view are likely to continue, the share of agriculture in the workforce could fall to 20% by 2030 (**Figure 8**). This is important for improving per capita output, which is much higher in industry and services than in agriculture, thus growing GDP much faster than workforce expansion.

Third, only 20% of the workforce in Indonesia is formally employed (**Figure 9**). A large part of this informal workforce is in agriculture (which is nearly completely informal), but nearly 66% of services and 80% of industrial employment are also informal (we include the household sector in this category). Much of the 19% of the workforce in wholesale/retail trade is likely to be informal, as in construction (7%) and hospitality (6%). As many as 19% of workers describe themselves as self-employed and another 17% are business owners, with their large numbers suggesting that these businesses are small and informal. More women work in the informal sector as it provides better flexibility than formal jobs.

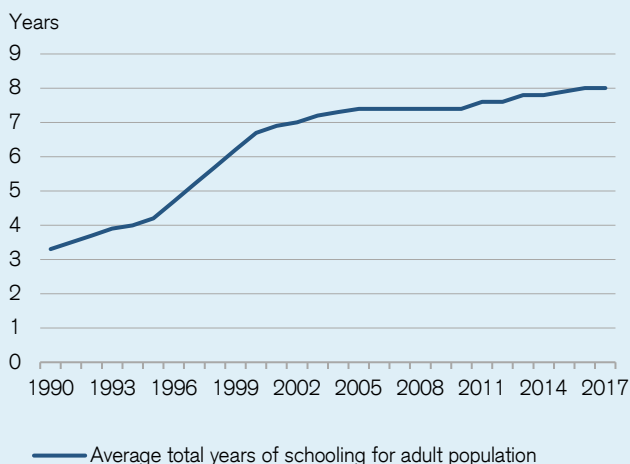
In our survey, which was conducted online and likely has an over-representation of upper-income segments and thus a more formal workforce, the younger cohorts value flexibility and are less likely than the older groups to stay in one company for their whole working life (**Figure 10**). Even as this dynamic takes hold in the upper income/formal workforce, the formalization of Indonesia's large informal workforce should improve productivity, particularly given that larger and formal firms are more able to raise and deploy capital.

**Figure 10: CS Survey – younger workers prefer flexibility**



Source: CS-Nielsen Survey, Credit Suisse

**Figure 11: Education levels have improved rapidly since 1990**



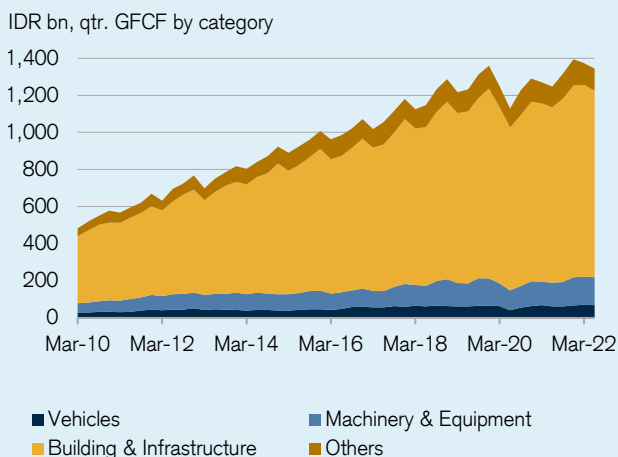
Source: Lee-Lee (2016); Barro-Lee (2018) and UNDP HDR, Credit Suisse

**Quality of workforce and infrastructure improving too**

In addition to the growing number of workers, the physical and mental capabilities of workers are improving too. The share of children who are underweight declined from 30% in the 1990–95 period to 18% in 2015–20. Further, from 1990 to 2015, the average number of years of education for an Indonesian adult increased from three to eight (Figure 11) – the current level is better than China’s and the pace of improvement is the fastest in the APAC region. That said, only 16% of the population have high-school degrees and the government plans to spend 20% of its budget on education.

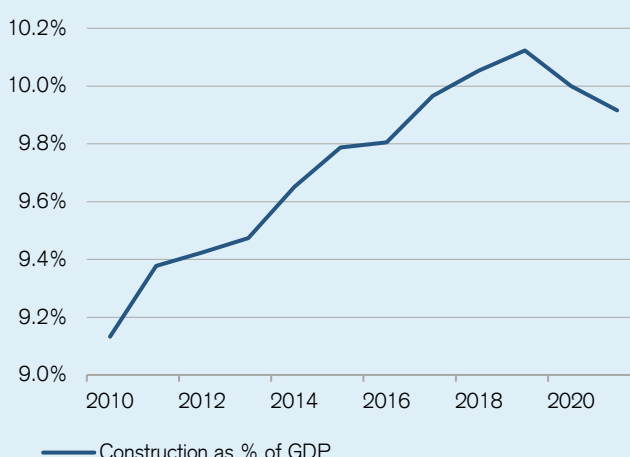
Better transportation infrastructure is critical for productive deployment of labor and the efficient movement of goods. Government expenditure has risen significantly from USD 5 billion annually 15 years back to nearly USD 50 billion now (Figure 12), including 2,042 km of toll roads, seaports, airports and railways across the archipelago. With nearly 44% of the workforce still in rural areas, this is important to provide them access. Better connectivity is likely to catalyze inter-island trade and urbanization, which in turn means higher productivity and incomes.

**Figure 12: Non-mortgage credit is low for younger economies**



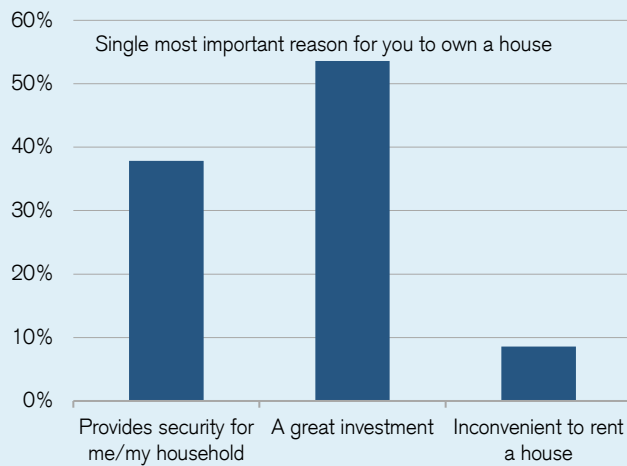
Source: OECD, Credit Suisse

**Figure 13: CS Survey – respondents who have a loan**



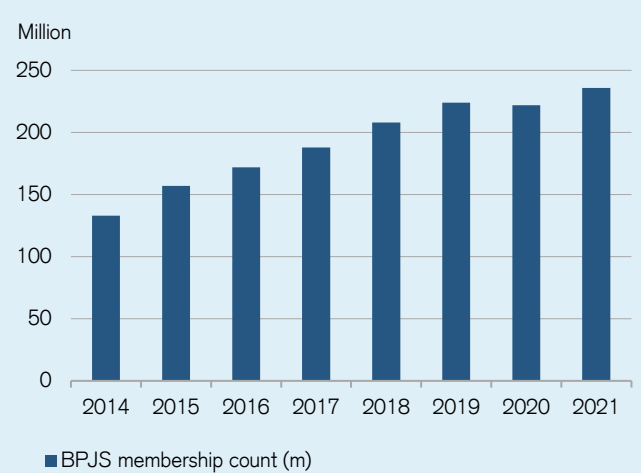
Source: CS-Nielsen Survey

**Figure 14: CS Survey – most respondents prefer real estate as an investment**



Source: CS-Nielsen Survey

**Figure 15: BPJS pension scheme covers 87% of population**



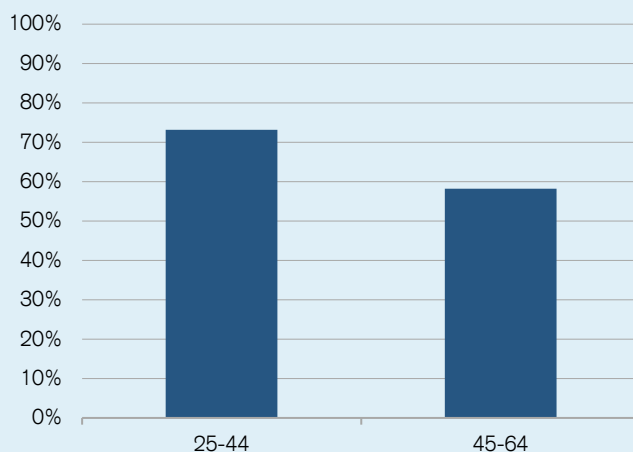
Source: National agencies, Credit Suisse estimates

Not only will construction of this infrastructure help Indonesia meet growing global demand for nickel, tin and copper, but this construction itself creates jobs (7% of the workforce currently) and contributes ~10% to GDP (Figure 13). Given its steady income growth and favorable demographics, we also expect real house prices to rise over the next decade, supporting demand for new construction. In our survey, most respondents preferred real estate as an investment (Figure 14).

**Health/pension coverage good, but needs to grow**

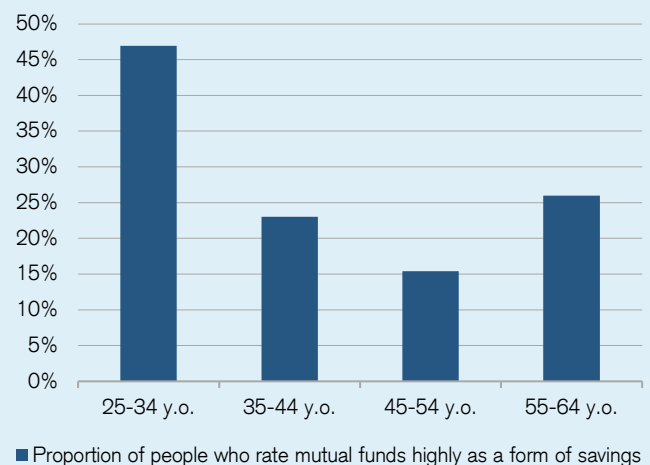
Financial savings should continue to grow in Indonesia. The BPJS national health insurance and pension scheme already covers 236 million people (Figure 15) or 87% of the 270 million population and more than the 208 million workers in the economy. The BPJS covers both simple and complex medical procedures. In our survey, we also found that younger workers have better pension access than the older cohorts (Figure 16). However, the size of pension assets in Indonesia is only 2% of GDP and is likely to grow over the coming decade.

**Figure 16: CS Survey – the young have better pension access**



Source: CS-Nielsen Survey

**Figure 17: CS Survey – mutual funds preferred by the young**



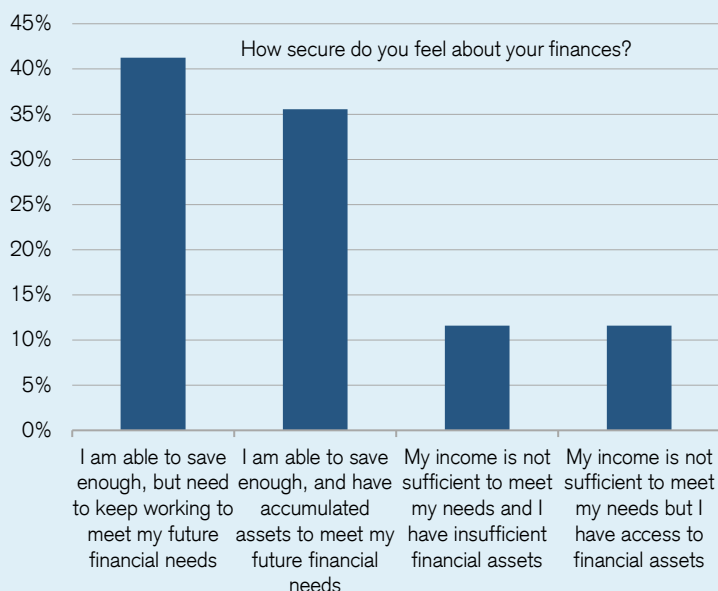
Source: CS-Nielsen Survey

## Younger population should mean greater risk appetite

While the government is planning to develop six industrial estates across Indonesia to attract more investment in domestic industry, the surge of interest in Indonesia's commodities has resulted in a current account surplus, making Indonesia an exporter of savings. What form could these savings take? Given that Indonesia's rebuilding of foreign currency assets is still in its early days, the country's savings may be in safe assets globally in the near term. Our survey has shown that younger people rank mutual funds more highly among the top modes of saving (Figure 17), and most respondents feel secure about their finances (Figure 18).

However, in our view, it will take several years before Indonesia's foreign assets start diversifying away from government bonds in developed markets. Its foreign exchange reserves are still only enough for seven months of sales, and a commodity-heavy export basket means that it is vulnerable to a growth slowdown.

Figure 18: CS Survey – high level of financial confidence



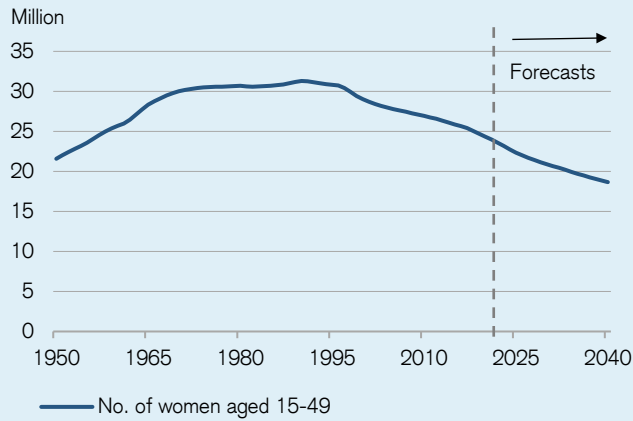
Source: CS-Nielsen Survey



# Japan

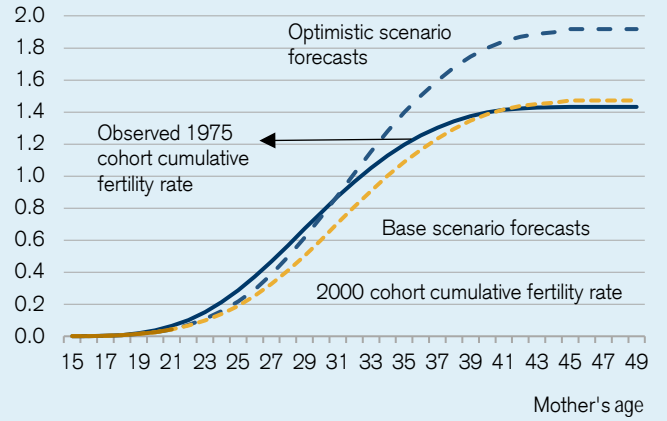
Takahiro Kazahaya, Kevin Son, Mihoko Kataguchi

**Figure 1: Number of women of reproductive age over time**



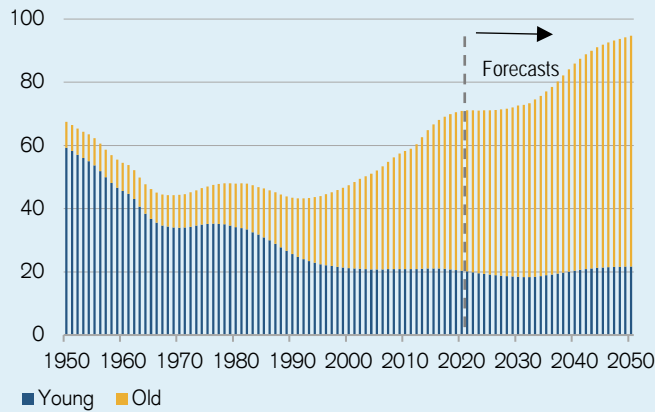
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



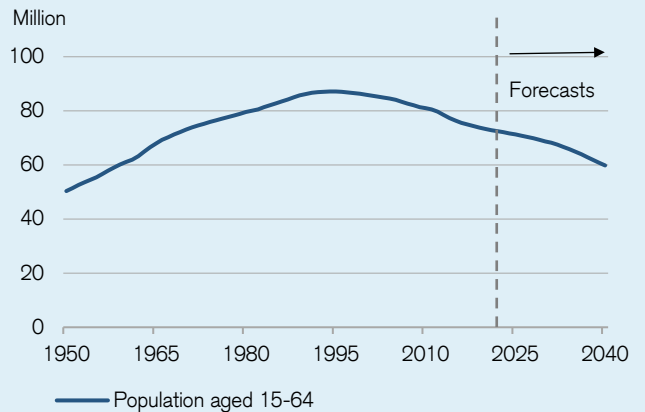
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



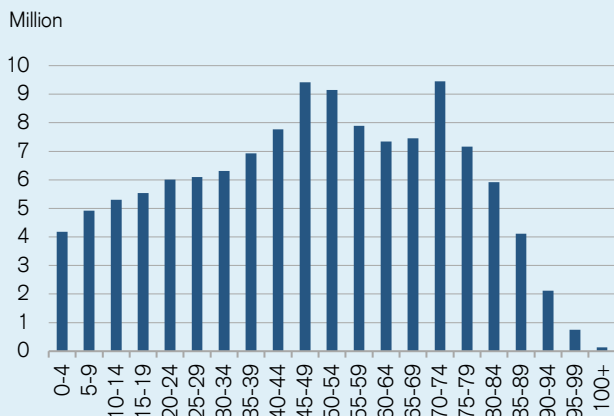
Source: UNDP, Credit Suisse

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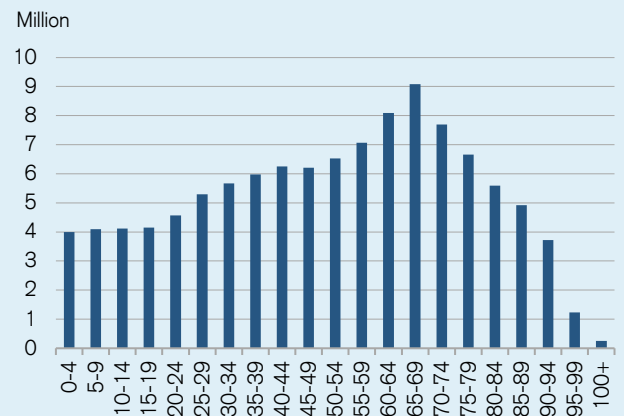
Source: UNDP, Credit Suisse

**Figure 5: Population by age group in 2022**



Source: UNDP, Credit Suisse

**Figure 6: Population by age group in 2040**



Source: UNDP, Credit Suisse

Among the major nations, Japan is the most advanced in its demographic transition. While younger cohorts are not expected to see a further decline in fertility, it is below replacement level and, with the number of women of reproductive age falling for the last 30 years, new births are now near 800,000 p.a. versus two million 50 years ago. The working-age population peaked in 1994 and is set to fall by five million people between 2020 and 2030, and the dependency ratio is expected to rise sharply again after 2030.

### Improving participation rates are helping incomes

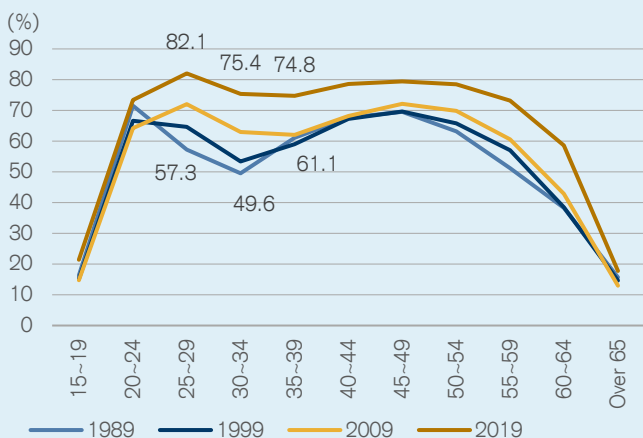
One of the key policies of the government has been to encourage greater labor participation by women and seniors. For women, it passed the Equal Employment Opportunity Act of 1985 and, for seniors, it raised the starting age for receipt of pension payments, while pushing back the

retirement age. Helped by these actions, the labor participation rate of both groups has risen steadily, most notably for women in the 24–44 age group (**Figure 7**).

This has also meant a steady increase in double-income households in Japan and a decline in single-income households (**Figure 8**). Similarly, 52% of the 65–69 age group are now working versus just 37% in 2011, and 33% of the 69–74 age group are now in the workforce versus 22% a decade back (**Figure 9**). The increase for the 75+ age group has been marginal so far.

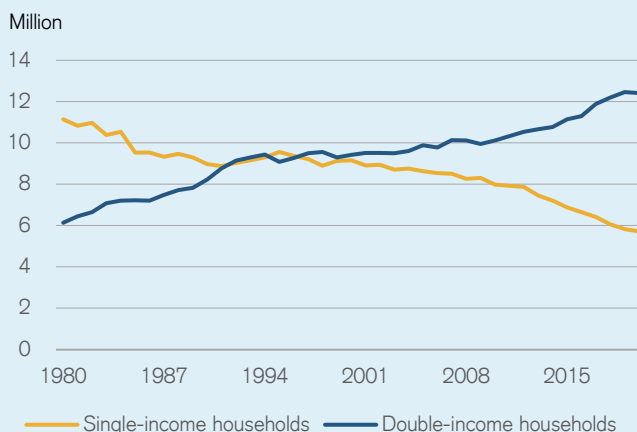
Together with an economic recovery fueled by monetary easing, these trends have helped household income bottom out in working-age age groups and have sustained average household income despite an increase in the number of elderly households (**Figure 10**).

**Figure 7: Rising female workforce participation**



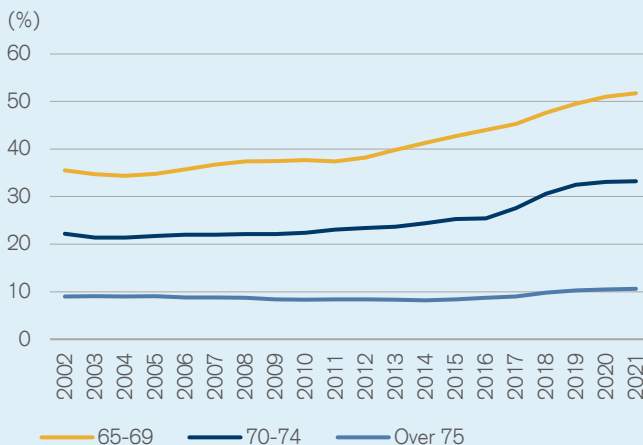
Source: Labor Force Survey, Ministry of International Affairs and Communications

**Figure 8: Increase in the number of double-income households**



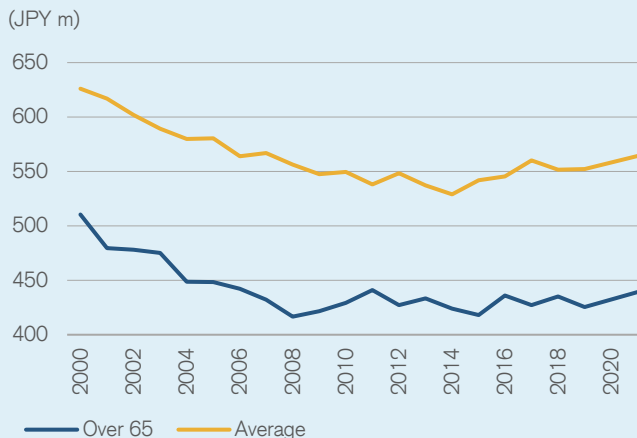
Source: Labor Force Survey, Ministry of International Affairs and Communications

**Figure 9: Sharp rise in participation rates in 65–74 age groups**



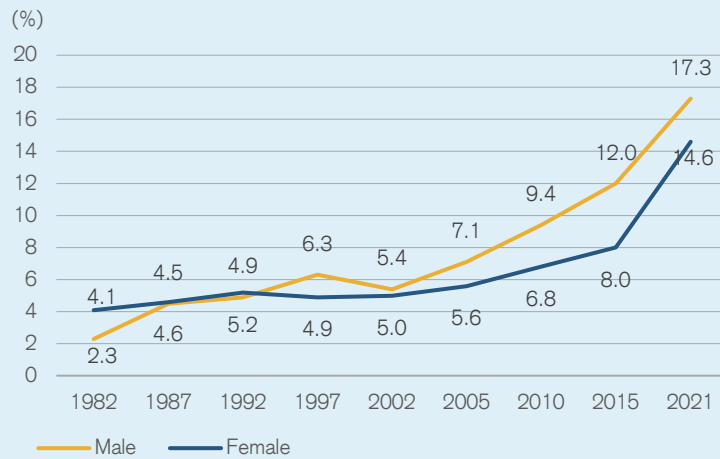
Source: OECD, Credit Suisse

**Figure 10: Average household income by age of head of household**



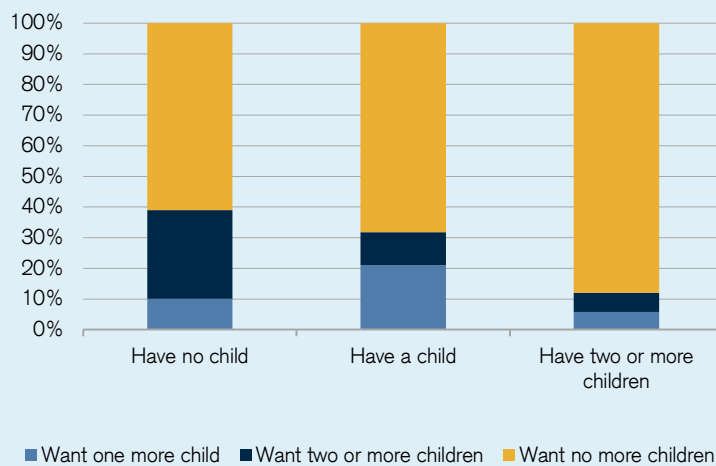
Source: CS-Nielsen Survey

**Figure 11: Growing share of adults who don't intend to marry**



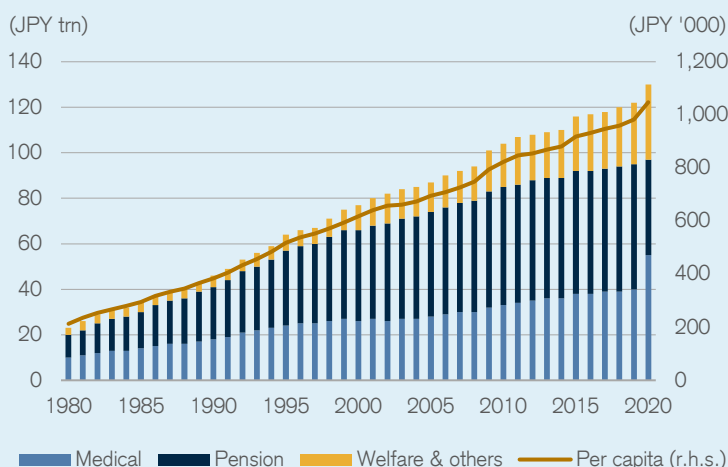
Source: "16th Japanese National Fertility Survey," National Institute of Population and Social Security Research (NIPSSR)

**Figure 12: CS Survey – willingness of respondents to have children**



Source: CS-Nielsen Survey, Credit Suisse

**Figure 13: Social security spending is now JPY 1 m per capita**



Source: "The Financial Statistics of Social Security in Japan," NIPSSR

On the other hand, we note that the median income in age groups other than seniors has been declining, with the divergence between the mean and the median indicating widening income disparity among younger generations.

### Income rise may have an adverse effect on marriages and children

These trends have had a demographic impact as an increasing number of young people have the economic means to live independently and this has reduced their desire to marry. Furthermore, the increasing participation of women in the workforce has led to an increase in the percentage of men seeking female partners with earnings power.

As many as 17% of adult males and 15% of females do not intend to marry (Figure 11) and, worryingly, the rate of marriage is even lower than the intent to marry. The share of men aged 50 and above who have never married has climbed from 6% in 1990 and 13% in 2000 to 28% in 2020 as per the Statistical Handbook of Japan. For women, this ratio was 4% in 1990, 6% in 2000, and 18% in 2020. There were only 525,000 marriages in 2020, with the marriage rate (marriages per 1,000 adults) falling by 60%. Further, for 48% of men in 2021 economic strength was an important criterion when looking for a marriage partner versus 30% in 2002. In this case, the likelihood of children after marriage also falls. In our survey, we found that the majority of respondents without children did not plan to have any, and very few of the respondents with children wanted to have more (Figure 12).

### High dependency ratio having an adverse effect

Sharply rising social security costs have become a major challenge as Japan's population ages. The total payouts at JPY 130 trillion per year amount to 25% of GDP. The burden of steadily rising social security costs per capita (over JPY 1 million in 2021, Figure 13), which needs to be funded by taxpayers or government borrowing, is triggering a long-term slump in disposable income, which is a classic symptom of a high dependency ratio. That said, Japanese pension assets are still well funded.

## Rising age disparity in wealth; home-buying dreams

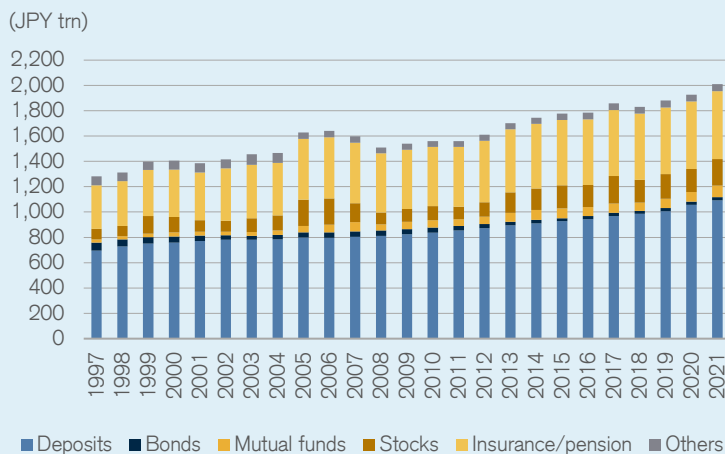
Japanese households hold JPY 2 quadrillion (374% of GDP) worth of financial assets (Figure 14). A significant part of these assets, both through mutual funds and insurance/pension funds, are foreign. However, when economic cycles shift from rapid growth to slow growth, financial assets tend to be concentrated in the hands of seniors who have benefited from past phases of economic growth. Furthermore, the financial asset value per household tends to be lower for younger generations than in the past.

Worryingly, from the perspective of equitable distribution, this disparity has increased over time (Figure 15). In 1989, those aged 60 and above held 32% of all assets. By 2004, this figure had increased to 52% and is now 64%. While these assets will be inherited by the younger set at some point, given rising life expectancy, there is no certainty for the young on when this transfer may occur.

A key theme would be how financial assets of the elderly could be used effectively, but the demographics of Japan (the elderly make up a major part of the electorate) make it difficult for the government to adopt policies that would increase the economic burden of senior citizens.

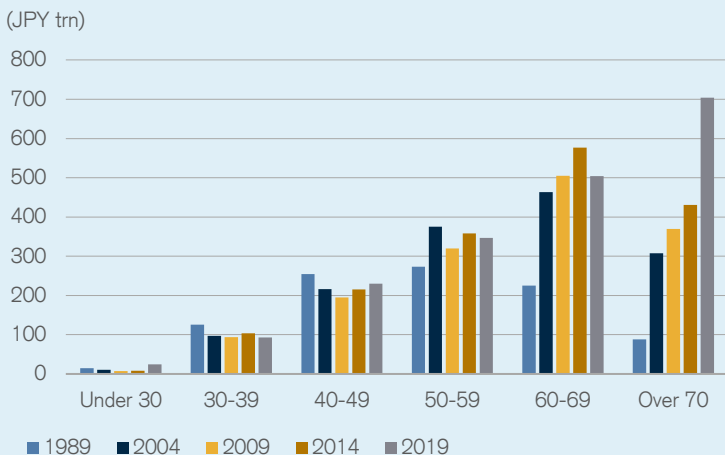
In the meantime, ongoing zero interest rates have led to a higher ratio of homeowners among younger people and the accompanying rise in home loans by this age group is reducing their net financial assets. This is compounded by the reduced ability to save once incomes decline (Figure 16) – younger populations tend to earn less and, despite the shrinking labor force, wages in Japan have not risen. As one would expect, lower wage earners also have lower savings.

Figure 14: Household financial assets (amounts outstanding)



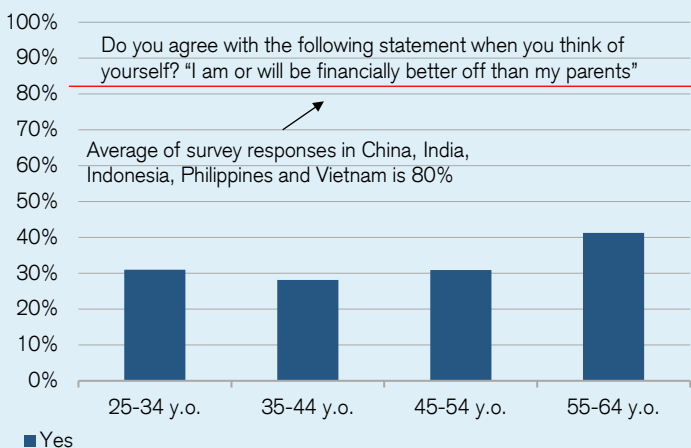
Source: "Flow of Funds", BoJ

Figure 15: The elderly hold a large and rising share of assets



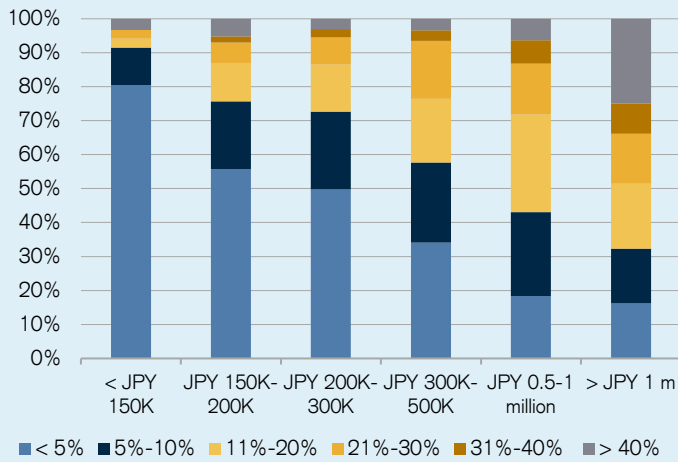
Source: "Flow of Funds", BoJ

Figure 16: CS Survey – the young feel worse off than parents



Source: CS-Nielsen Survey, Credit Suisse

**Figure 17: CS Survey – the young earn less, so save less too**

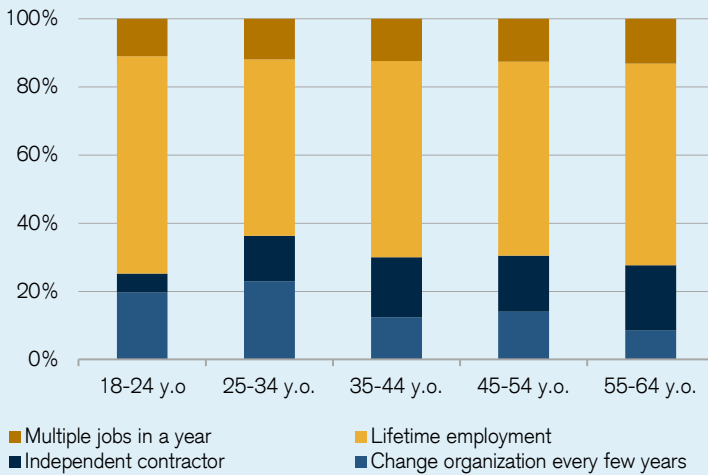


Source: CS-Nielsen Survey, Credit Suisse

In this situation, the younger the age group, the more difficult it is to envisage their overall outlook for Japan, and among the economies we surveyed, Japan was prominent in the share of respondents who felt they would be worse off than their parents (**Figure 17**). Only 30% felt they would be better off financially than their parents versus 80%-plus in other economies.

Among the economies we surveyed, Japan had the highest proportion of workers preferring lifetime employment (**Figure 18**). Even more surprisingly, whereas younger cohorts in other economies surveyed tend to prefer greater flexibility, there was no difference in preference across age groups. Over and above rigidity in the workforce and continuation of the work culture of the past few decades, this may be due to a preference for security.

**Figure 18: CS Survey – most workers prefer lifetime jobs**

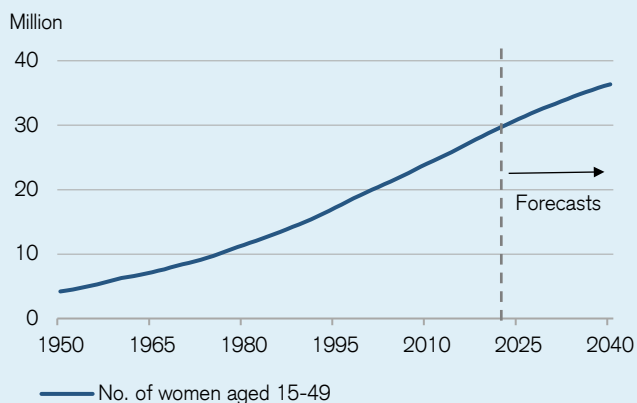


Source: CS-Nielsen Survey, Credit Suisse

# Philippines

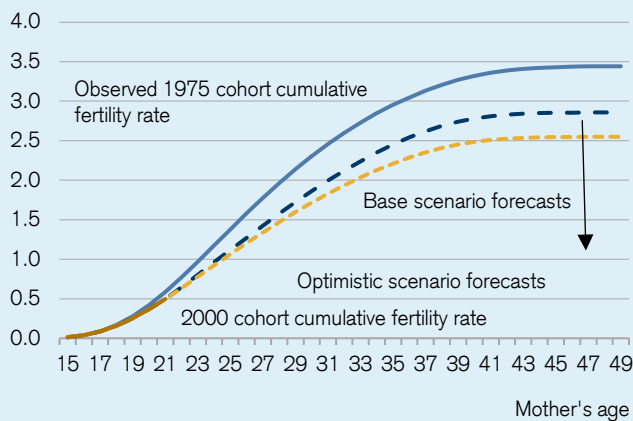
Hazel Tanedo, Jarred Go

**Figure 1: Number of women of reproductive age over time**



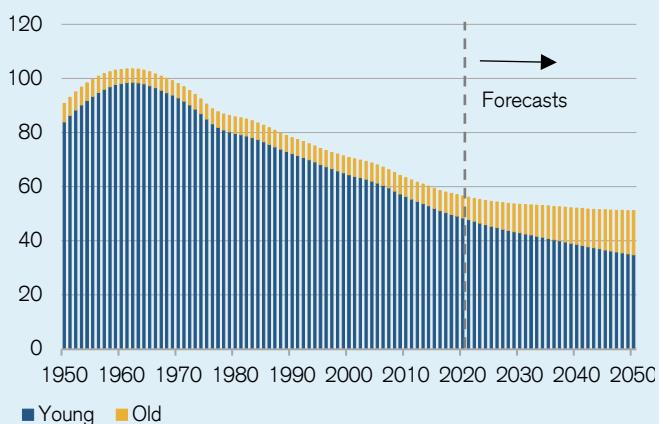
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



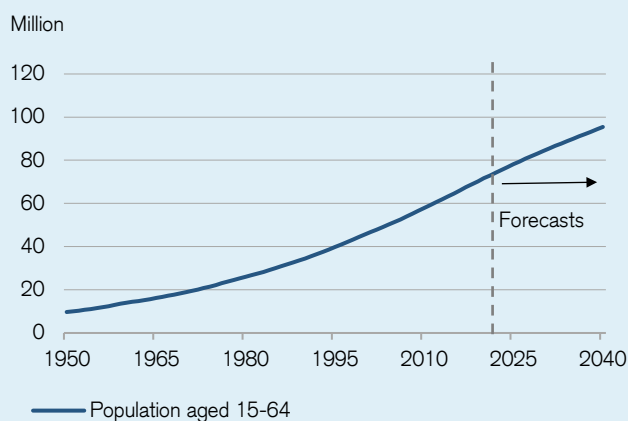
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



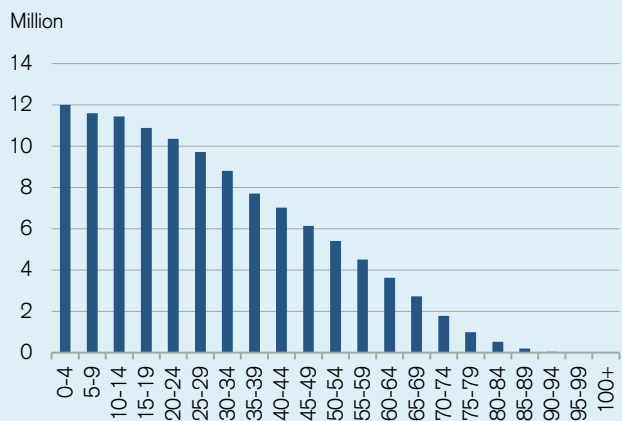
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15-64) 1950-2040**



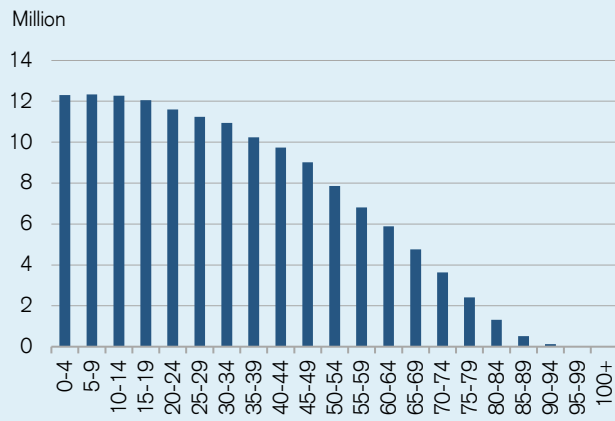
Source: UNDP, Credit Suisse

**Figure 5: Population by age group in 2022**



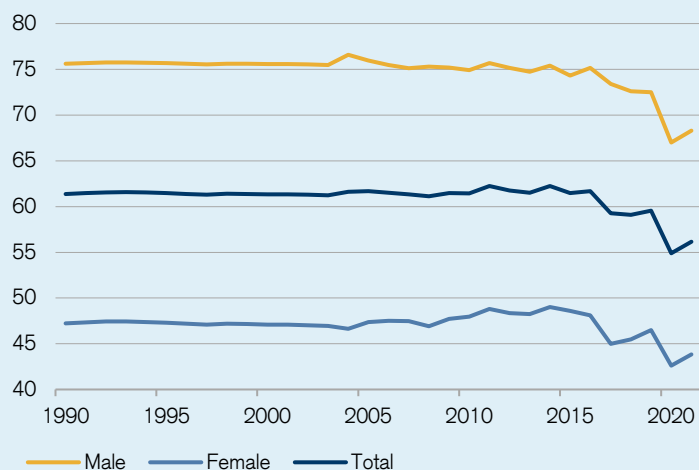
Source: UNDP, Credit Suisse

**Figure 6: Population by age group in 2040**



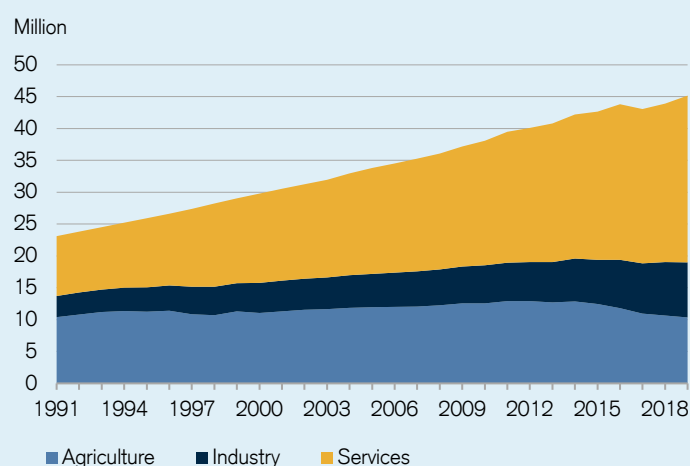
Source: UNDP, Credit Suisse

**Figure 7: Sharp drop in participation rates (15+) in recent years**



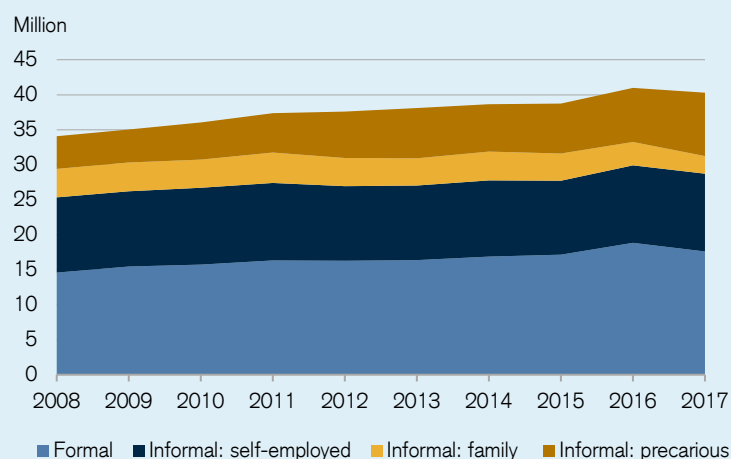
Source: ILO, Credit Suisse

**Figure 8: Most of workforce addition in services and industry**



Source: ILO, Credit Suisse estimates

**Figure 9: Growth in employment largely in “precarious” jobs**



Source: ILO, Credit Suisse estimates

Among the economies studied, the Philippines is in the earliest demographic stage, with an average age of 26, a rapidly growing number of women of child-bearing age and a slow decline in fertility. Even women born in 2000 are likely to have a fertility rate of 2.5, which is well above the replacement rate of 2.1. The country’s working age population should keep rising until 2078 and the average age is expected to be 40 in 2067.

### Falling participation (education), share of agriculture falling

While population growth in the Philippines has slowed, it is still high at 1.6% p.a., the highest in the region. Working age population growth should average 1.6% as well this decade. However, workforce participation has dipped sharply from 75% in 2015 to 68% in 2021. Some of this is due to the COVID pandemic, but the recovery thereafter has been slow (Figure 7). This has effectively reduced the number of workers by 9%. Further, despite significant achievements in closing the gender gap (its rank in the Global Gender Gap Report 2021 was a high 17), female participation is still low. We believe this decline is due to more years spent in education, so that the downward trend seen even before the pandemic is likely to persist for a while. The share of the workforce in agriculture has halved over the past three decades, falling from 45% in 1991 to 23% in 2019, with the number of workers in agriculture remaining unchanged at ten million (Figure 8). Three-quarters of the 22 million workers added since 1991 have been in services and the rest in industry.

### Steady informality in employment, poor quality of jobs

Given the higher productivity associated with services and industry, this is an important transition. However, these jobs are mostly of very poor quality. As per the International Labor Organization (ILO), the share of informal employment in the Philippines was stagnant at 56% between 2008 and 2017. While this ratio is lower than in Indonesia (70%) and India (80%), it is unchanging, whereas it is declining in Indonesia and India.

Informal jobs are poor quality and often have very low productivity. Nearly half of the informal jobs in the Philippines are performed by self-employed people with no paid employees. Around 10% are unpaid family workers and 40% are workers in salaried jobs classified by the ILO as “precarious.” We note that the number of workers in such jobs increased by 4.4 million between 2008 and 2017, offsetting a decline in unpaid home jobs (Figure 9). The challenge for the country remains in creating sufficient high-quality jobs for its growing workforce.

This is also important for income and wealth equality in the country: the Philippines has one of the highest levels of inequality in Asia. Inequality has remained high despite healthy growth in the middle class from 34 million in 2015 to 46 million in 2020 and is expected to reach 50 million by 2025 (the “middle class” income range is defined as a monthly family income of PHP 24,000–140,000), as growth in the top income class has been faster than in the lowest income groups. The poverty rate remains high at 18%, even though this is better than 22% in 2015. The top half of workers generate 69% of income, although this is better than in 2000 when the top 30% generated 77% of income.

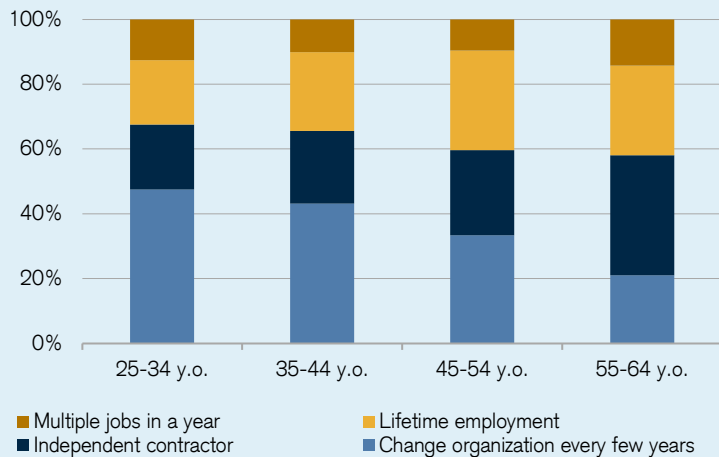
Since our survey was conducted online, it is likely to have an over-representation of upper-income segments and thus a more formal workforce, as reflected in the small share of respondents who perform multiple jobs in a year (Figure 10). Similarly, the smaller share of younger workers who are independent contractors points to greater employment in firms. This organization is conducive to higher productivity. Further, the younger cohorts value flexibility and are less likely than the older groups to remain in one firm for their entire working life. This workforce flexibility is an advantage in a rapidly growing economy.

### Quality of workforce improving, remittances growing

In the Philippines, a K-12 education (publicly supported school grades prior to college) is mandatory by law and has improved significantly in the last 15 years, with elementary school enrollment rising from 77% to 90% in 2020 (Figure 11). The student-teacher ratio has fallen from 35 to 31, although this is still a high number (preferred ratios are near 20). The government provides funding for public schools, which educate 88% of K-12 students. The functional literacy rate has now improved to 97% in 2020 from 93% in 2003.

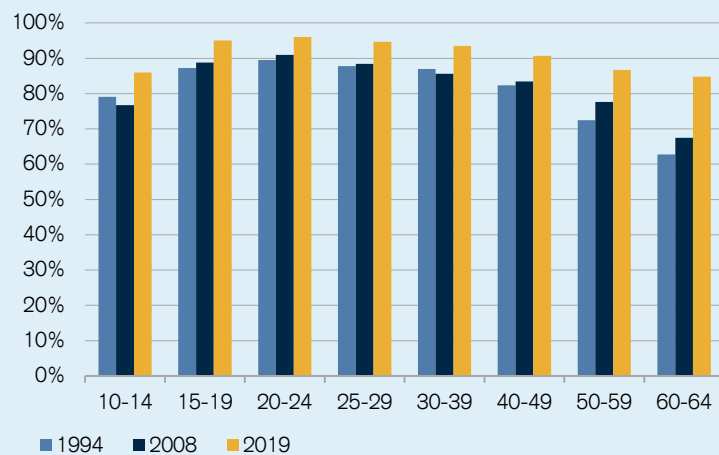
More importantly, average years of schooling have increased from seven years to ten from 1990 to 2015. Philippine workers have a high proficiency in English and the country is ranked second in Asia and 18th globally according to the EF English Proficiency Index. This has helped increase the stream of remittances (Figure 12), which have been 9%–10% of GDP for two decades. It has also resulted in flourishing Business Process Outsourcing (BPO) businesses, which are an important and stable source of national income. Rapid growth in these inflows is the primary reason the country enjoyed a current account surplus from 2003 to 2015, which helps stabilize external balances for the economy.

**Figure 10: CS Survey – young prefer flexibility working for firms**



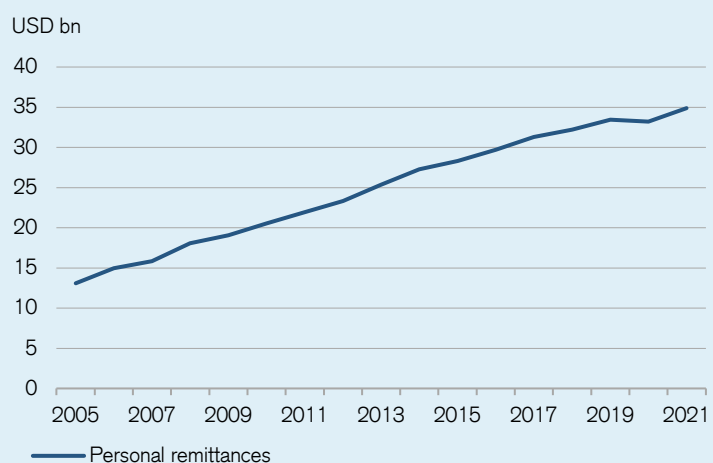
Source: CS-Nielsen Survey

**Figure 11: Functional literacy has increased meaningfully**



Source: Philippine Statistics Authority

**Figure 12: Remittances growing steadily**



Source: CEIC, World Bank



Total Overseas Foreign Workers (OFW) averaged 1.9 million in 2010–19, growing at 4.4% annually, but deployment dropped from 2.157 million in 2019 to 549,800 in 2020, down nearly 75%. Of the total deployment in 2020, land-based workers accounted for 60.5%, while 39.5% were sea-based. In 2021, personal remittances from OFWs reached a new high of USD 34.9 billion. Employing a total of 1.44 million people, the BPO sector accounts for 3.2% of the workforce and 4.1% of non-agricultural workers, and had an annual revenue of nearly USD 30 billion in 2021. The challenge for the Philippines is to remain competitive as a BPO destination, while ensuring decent work for over a million workers. The industry's expansion into cities outside Metro Manila have lowered attrition rates to just 7% (from 19% at the peak). Travel and tourism, at 12.7% of GDP in 2019, is also an important source of income and employment as it is a labor-intensive industry.

## More investments needed in infrastructure

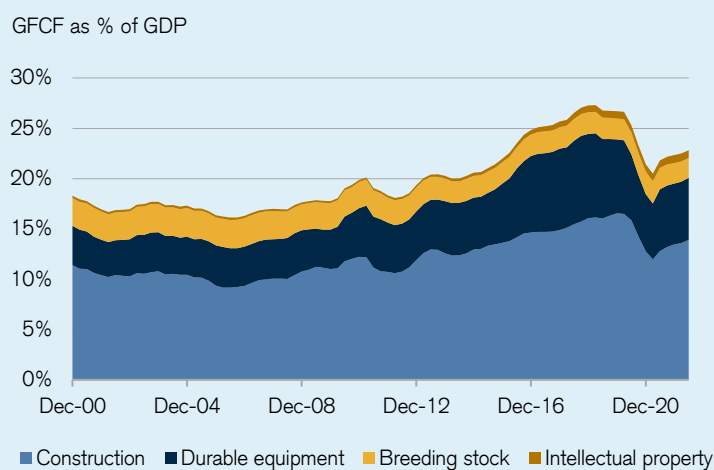
The Philippines' current account balance, however, shifted to a deficit at the start of 2016 (except in 2020) due to stronger investments and capital goods. The country reports a remarkably low level of investment in intellectual property (IP), which in most countries stands for software development more than a reflection of research and development investments. To help integrate the growing working age population into global supply chains, the country needs to build a significant amount of infrastructure. However, construction as a percentage of GDP, which was rising steadily from 2005 onward, had begun to fall even before the COVID-19 pandemic (**Figure 13**). Machinery/durable equipment ratios had also started to fall from their peak in 2017.

People are still moving to the cities. As opposed to the demographically mature parts of Asia, where physical migration has slowed or is slowing (with fewer of the younger respondents in our survey reporting being first-generation migrants), a much larger share of the younger cohorts said they had migrated to obtain their current jobs (**Figure 14**). Half of the Philippines is currently urbanized and the urban population grew at 2% p.a. last decade. With 2%–3% growth p.a. expected going forward, urbanization is forecast to rise from 51% in 2015 and 54% in 2020 to 63% in 2025. While urbanization does not automatically drive productivity, cities are more conducive to improvement than rural areas. Growing cities would need significant investments to improve urban infrastructure.

Will domestic savings suffice? In our survey, 69% of those who identify as self-employed and 81% of those who are full-time workers indicated they can save enough. The domestic pool of savings grew strongly until 2019 to PHP 6.15 trillion, but then declined sharply during the pandemic, falling to PHP 3.88 trillion in 2021, perhaps as foreign tourism slowed. At 10.5% of GDP in June 2022, the gross savings rate is likely depressed due to the after-effects of the pandemic, with households and the government both spending more than they earned.

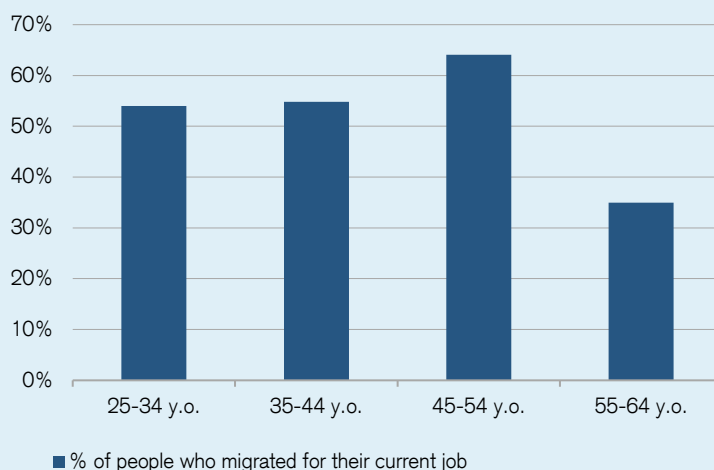
However, the country would likely have to rely on foreign savings to build its infrastructure rapidly. Given a relatively high fertility rate (27% of respondents in our survey said they plan to have three children and 48% plan to have two children), despite the growth in remittances and the BPO industry, household savings may not suffice to build the infrastructure the country needs and a current account deficit may persist. Another challenge is that more than half of informal workers keep their savings at home. Utilizing these savings then becomes a challenge.

**Figure 13: Investments need to rise further as a % of GDP**



Source: CEIC, Credit Suisse

**Figure 14: CS Survey – very few couples want to have two children**

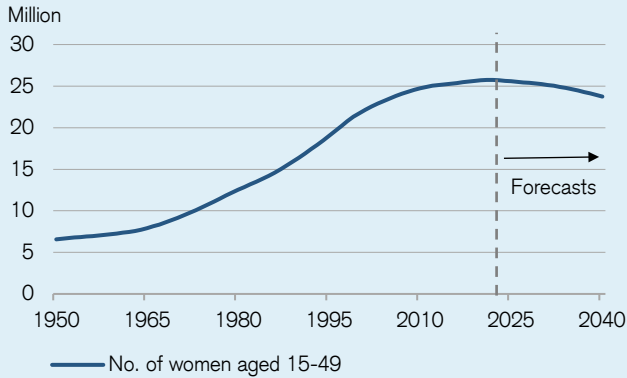


Source: CS-Nielsen Survey

# Vietnam

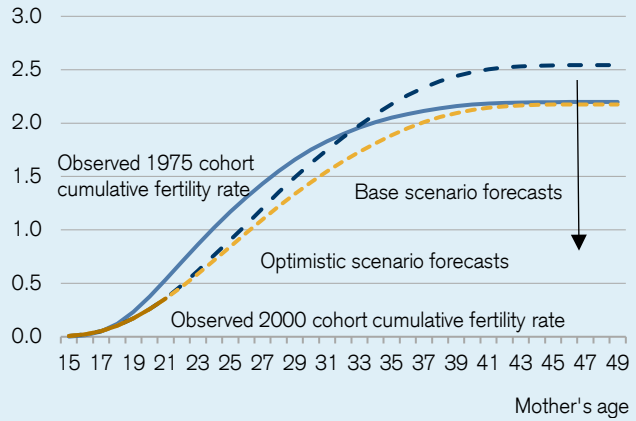
Worawat Saisuphatphol

**Figure 1: Number of women of reproductive age over time**



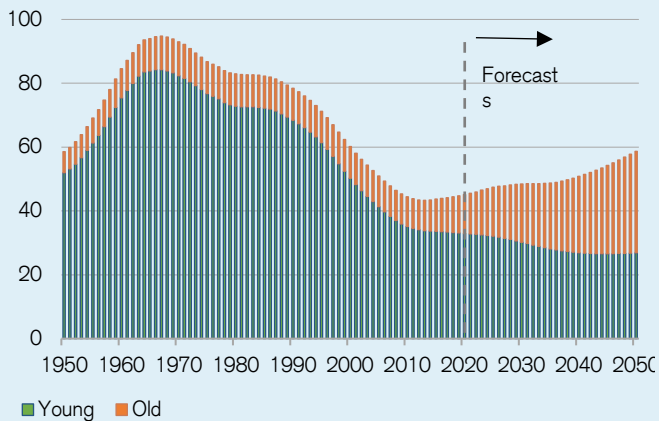
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



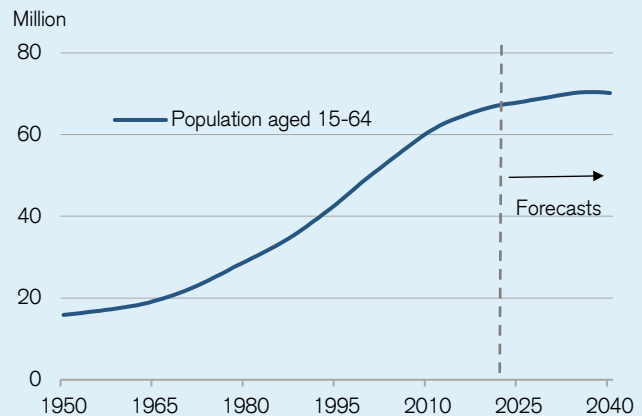
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



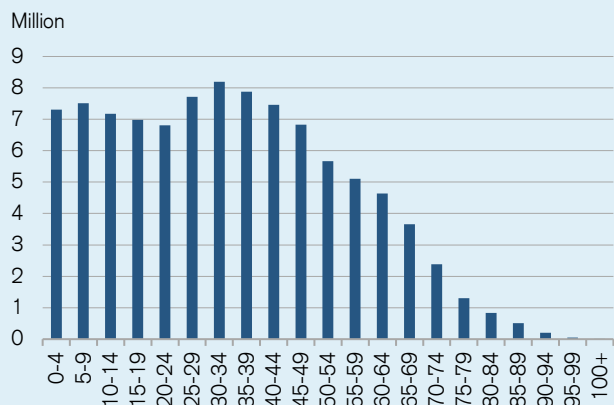
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15-64) 1950-2040**



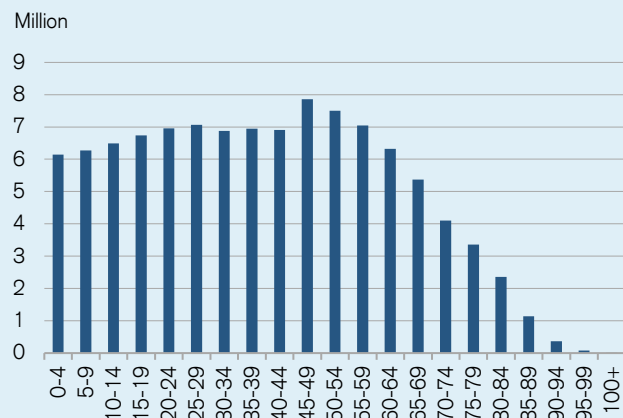
Source: UNDP, Credit Suisse

**Figure 5: Population by age group in 2022**



Source: UNDP, Credit Suisse

**Figure 6: Population by age group in 2040**



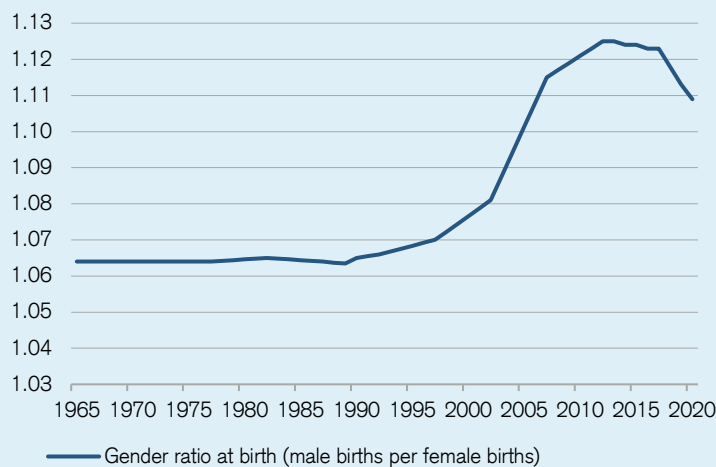
Source: UNDP, Credit Suisse

Vietnam's TFR fell below 2.1 in 2000, but, instead of falling steadily, it bottomed out at 1.9 in 2005 and has rebounded above 2.0 in recent years, with fertility for younger cohorts not much below their mothers'. Demographic transition will thus be slow: the workforce should keep growing until 2037 and the average age is only likely to cross 40 in 2047, 31 years after crossing 30, making Vietnam the third-slowest country in Asia in terms of demographic change.

## Gender ratio a challenge; weak college enrollments

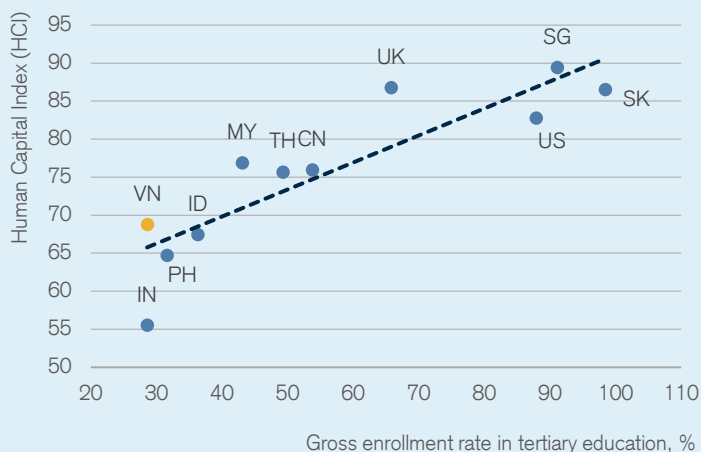
Despite the steady TFR, however, the number of women of reproductive age peaked in 2021 and is set to fall rapidly. Vietnam's high gender ratio at birth is the highest after China and has seen a sharp increase this century (Figure 7). Whereas the normal ratio is between 1.03 and 1.06 (male infants have a higher fatality rate than females), this ratio is still at 1.11 in Vietnam despite a decline since 2010. The sharp increase starting 2005 is likely to start showing up now in the marriage ratio as men fail to find brides.

**Figure 7: Pre-natal gender selection has raised the gender ratio at birth**



Source: CEIC

**Figure 8: Gross enrollment in tertiary education appears low**



Source: CEIC, Credit Suisse

In our survey, 80% of the respondents were married with at least one child and more than 50% had two or more children. Almost 70% of families with only one child now plan to have at least one more child in the future. For respondents who are not married yet, more than 80% of them plan to have one child in the future. We think this positive mindset to marry and have one or two children should continue to support population growth in Vietnam.

On other fronts, Vietnam's performance has been mixed. It has progressed well on human development, indicated by a relatively higher Human Capital Index (HCI) measured by the World Bank versus ASEAN peers with similar demographics like the Philippines and Indonesia. However, while the average years of schooling have increased from four years in 1990 to eight years in 2015, the enrollment rate for tertiary education is low (Figure 8) and the ratio of university students to school pupils has declined in the past decade. If this trend persists, it could constrain the supply of skilled labor and the flow of FDI in the future.

## Rising savings often more than investment needs

In the last decade, Vietnam has grown the fastest in Asia after China, with an 8% CAGR in nominal GDP in US dollar terms. Labor force participation rates (LFPRs) are high, at least since 1990, and have fallen slightly over the past decade, most likely as individuals spend more time in education. Nevertheless they are the highest in Asia at 74% (followed by China and Indonesia at 68% each). The female LFPR is at a very high 70%, eight percentage points higher than the next highest country, China.

This is perhaps why Vietnam has a low college enrollment, but it also explains its high savings rate.

Domestic savings have remained above 30% of GDP during this period, reaching 35% in the last two years (Figure 9). This is also higher than its ASEAN peers, which have lower participation rates in their working-age populations. Therefore, despite investments of 25% of GDP (GFCF: Gross Fixed Capital Formation), its current account balance has been in surplus this last decade.

Equally important, we find that domestic wealth has been diversified from cash and gold into bank deposits. Banking penetration has improved rapidly (60%–70% now versus 30%–40% five years ago) as has insurance penetration. Capital markets are deeper too, with corporate bonds accounting for around 15% of GDP, although the equity market is still at an early stage. The property market is also performing well, with an increase in property prices, particularly in the high-end and luxury real estate segment. A growing share of financial savings is important from the perspective of flexibility in how those savings are deployed, including cross-border investments.

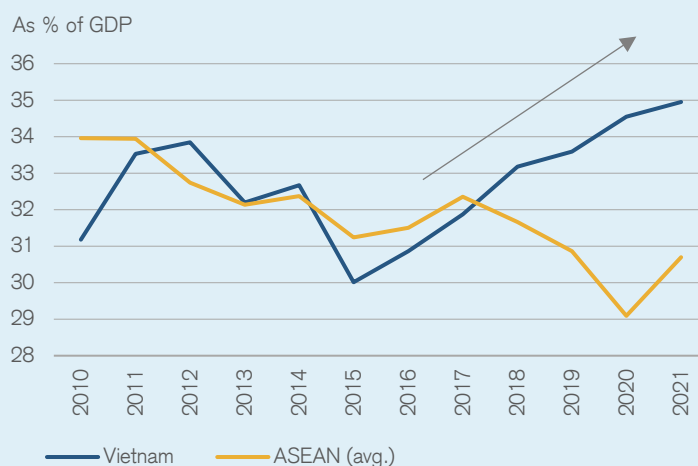
In addition, around half the respondents in our survey chose financial savings options as the first or second most preferred option (Figure 10): 25% preferred bank deposits, 13% preferred insurance and 9% opted for mutual funds and ETFs (exchange traded funds). Only 20% of respondents ranked physical cash as their first or second most preferred saving option, and 15% opted for gold and other precious metals.

Surprisingly, for a country seeing rapid economic growth and where the trends of population growth, income growth and dependency ratios suggest a strong outlook for real house prices (see Chapter 3), only 18% of the respondents chose land and real estate as their first or second most preferred option. In fact, while 25% of respondents indicated they planned to buy houses in the next two years and over 50% in the next five years, nearly 95% of respondents gave security as the primary reason for buying a house. We note that the online nature of the survey means a bias toward an upper-income population.

### Savings structure: Most global assets in FX reserves

Most of Vietnam's investment needs are currently met through foreign direct investment (FDI), which, over the last decade, has brought in USD 126 billion, compared to cumulative current account surpluses of USD 41 billion over the same period. The country's substantial balance of payments surpluses are mostly kept as foreign exchange reserves, which make up 70% of the cumulative financial account flows (i.e. the outflow of Vietnam's savings) over the past decade (Figure 11).

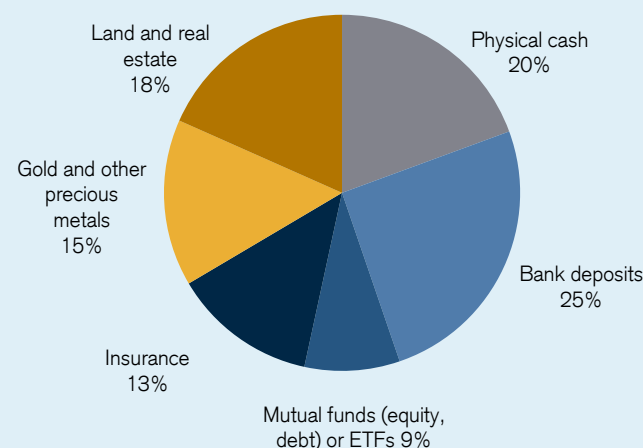
Figure 9: Gross domestic savings are high and rising



Source: CEIC, Credit Suisse

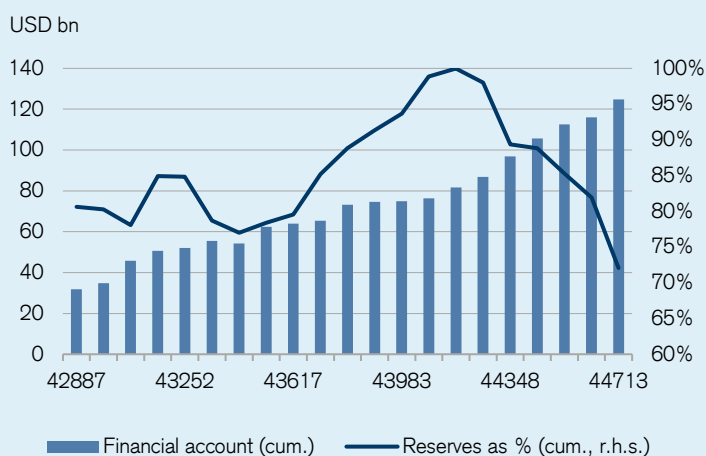
Figure 10: CS Survey – preferred saving options

Preferred rank: % of respondents who ranked each option #1 or #2



Source: CEIC, Credit Suisse

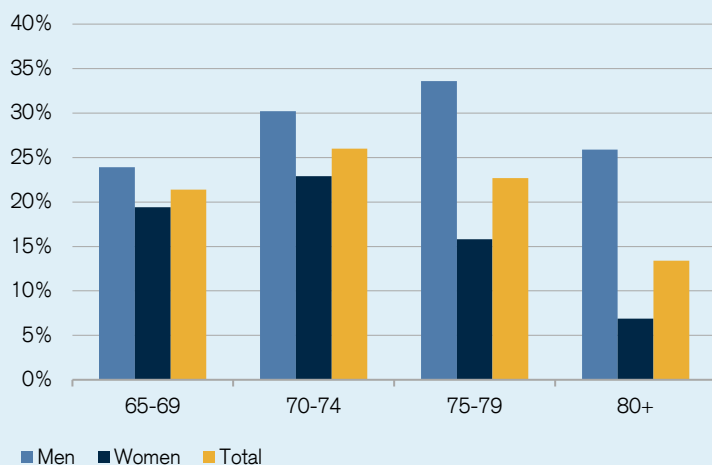
Figure 11: 70% of foreign assets are foreign exchange reserves



CEIC, Credit Suisse

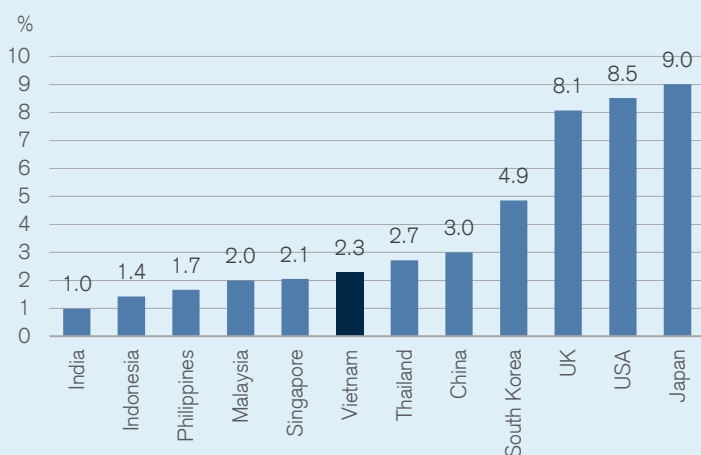
**Figure 12: Vietnam has very low pension coverage**

Retirement pension coverage by age group



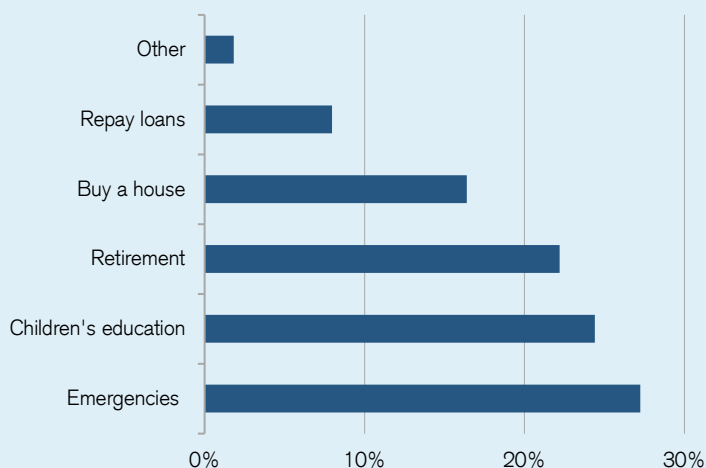
Source: ILO, Credit Suisse

**Figure 13: Government spends significant sums on healthcare**



Source: CEIC

**Figure 14: CS Survey – reasons for saving**



Source: CS-Nielsen Survey

The decline in this ratio is healthy from the perspective of earning returns that can bolster savings when Vietnam's population begins to age (see the discussion on Japan in Chapter 3): while foreign currency reserves are liquid and consolidated with the central bank, allowing it to keep the currency stable, they are not high yielding. However, this is still in early stages.

### Pension fund assets and access need to improve

Further, not only does Vietnam have very low pension coverage (**Figure 12**), there have been several warnings about the sufficiency of its pension assets, with forecasters predicting that pension fund expenditures will exceed inflows by 2033 and that the fund itself could be depleted by 2045<sup>1</sup>. The challenge perhaps is not the deduction ratio (22%: 8% from employees and 14% from employers), but the enrollment. Only 25% of workers are enrolled.

A healthy pension plan is not only important for citizens to feel comfortable about consumption as they age, but also for diversification of the country's assets. For older populations, a high share of foreign assets can help offset intergenerational conflicts 20 years later, when the number of retirees will begin to rise rapidly. Already, in our survey, which had an upper-income bias, more than 40% of workers plan to work even after 60 years of age. More than half the respondents work more than 40 hours a week, even though most respondents say they are comfortable with their pension savings (as we have observed in other countries, people getting closer to retirement age start losing confidence in the sufficiency of their retirement funds). This includes beneficiaries of well-managed pension systems like the one in Malaysia.

In our survey, a majority of respondents were white-collar workers, most of whom plan to change the firm in which they work every few years. Similar to other countries we have observed, this proportion was higher in the younger cohorts. Among those workers who switch industries, most acquired new skills at their own expenses. While this weak attachment to organizations (which we interpret as flexibility) and risk appetite (willing to reskill themselves at their own expense in order to change jobs) has positives for a young and dynamic economy, the workforce may need to settle over time to provide incentives for employers to invest in skilling their workers. Frequent job changes are quite challenging for organizations to manage human resources effectively.

1. A Brief on the Vietnamese Pension Schemes, Giang Thanh Long

## Government healthcare spending has improved

Even though there are concerns about the public pension plans in Vietnam, public healthcare expenditure is better than in several other ASEAN countries (**Figure 13**). This should alleviate some of the apprehensions of people drawing closer to retirement or retiring in the next two decades.

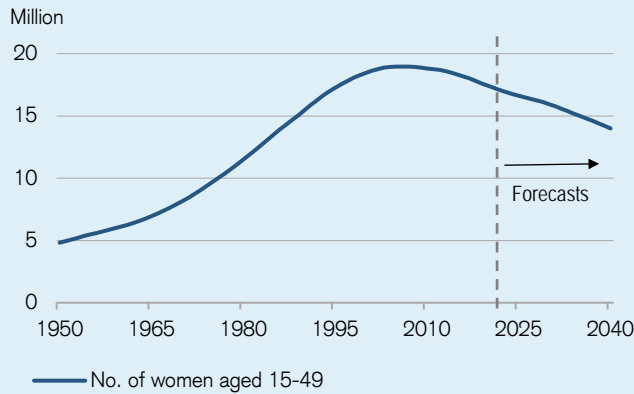
If Vietnam can maintain strong growth beyond the next decade, which appears likely, the chances of growing incomes and financial savings creating a stronger buffer improve. For sustained growth, however, regions other than those in the vicinity of Hanoi and Ho Chi Minh City need to grow.

In our survey, most respondents reported saving for emergencies (**Figure 14**), such as unexpected medical costs, their children's education and retirement. As incomes and savings grow, the growing penetration of health insurance and long-term saving schemes should help organize Vietnam's financial assets and also build channels for more diversified exports of capital.

# Thailand

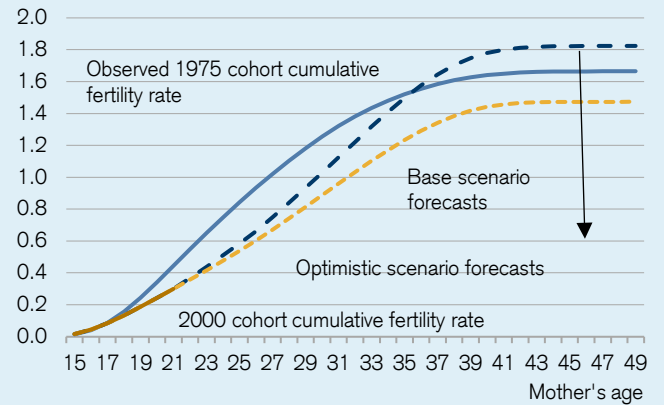
Dan Fineman, Siriporn Sothikul

**Figure 1: Number of women of reproductive age over time**



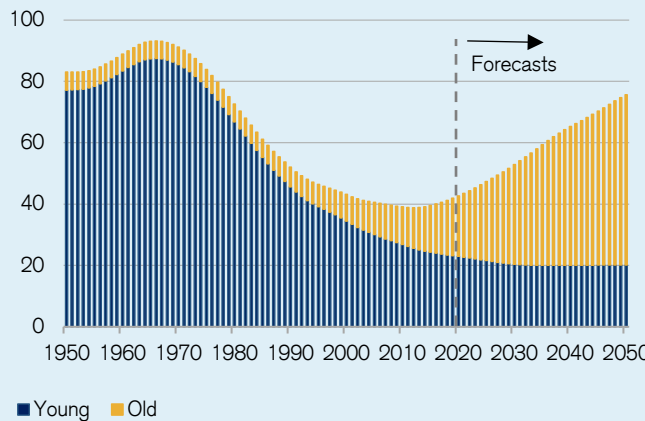
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



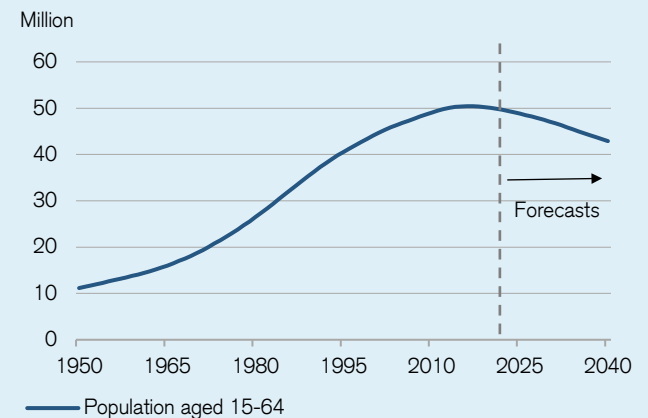
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



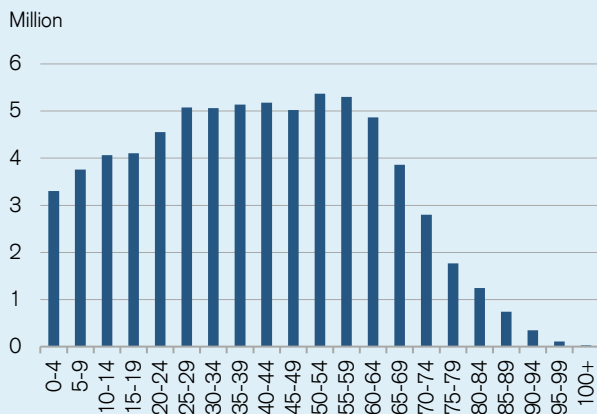
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15–64) 1950–2040**



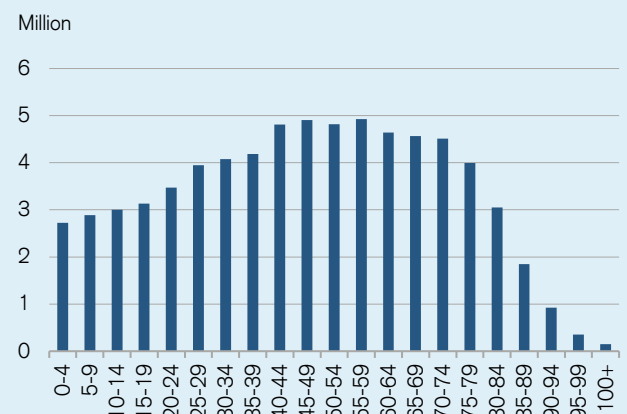
Source: UNDP, Credit Suisse

**Figure 5: Population pyramid 2022**



Source: UNDP, Credit Suisse

**Population by age group in 2040**



Source: UNDP, Credit Suisse

Thailand has unusually challenging demographics for a middle-income country with a per capita GDP of USD 7,600. No country outside Eastern Europe has a higher average age (39) and lower wealth (USD 28,000 per capita) – developed EU nations with a similar average age are ten times wealthier. Now in its second generation of low fertility (implying fewer mothers), its demographic decline is accelerating, with annual births already below 700,000, which is less than half the number 50 years ago.

### Accelerating demographic decline; will migration help?

The working-age population peaked in 2018 and worker participation has fallen since 2011 as the population has aged (Figure 7). The total population has fallen since the COVID pandemic began. The experience in more developed Asian economies indicates that fertility will not rebound soon and there are no initiatives to encourage births such as providing affordable childcare.

On the positive side, migration from neighboring countries should recover somewhat. Borders were largely shut to migration during the pandemic and an economic boom in Myanmar following its democratization in 2011 reduced entries from this most important source country. However, ongoing economic crises in Myanmar and Laos could see migration increase again (Figure 8). Although a concerted plan to import low-end workers is not in the pipeline, reforms to attract skilled talent are at an advanced stage. In theory, Thailand is a good candidate for increased immigration. Population density per square kilometer of arable land is the lowest of any MSCI APAC market and political opposition to immigration is low by global standards. Neighboring countries have much lower incomes and thus the pool of potential immigrants is large. Thailand's neighbors are similar to it culturally and immigrants from these countries quickly learn Thai due to the prominence of Thai movies, TV shows and music in their home countries.

### Human capital is improving, but more needs to be done

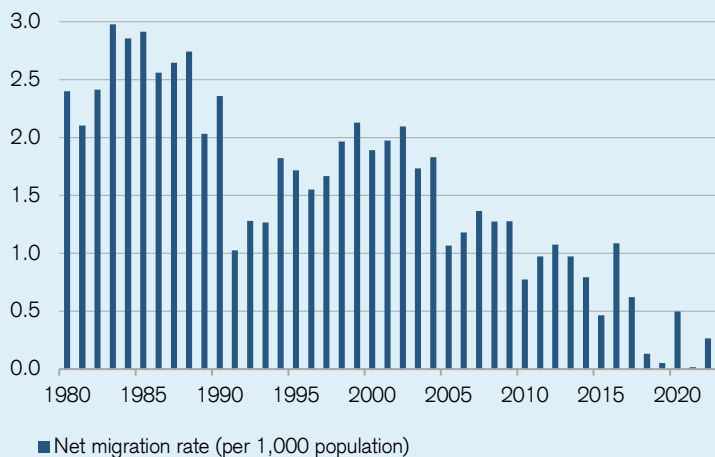
Thailand's educational system has broadened impressively, but has serious weaknesses. There has been a steady increase in the average years of schooling, but rapid expansion has diluted the quality of university instruction and universities are failing to narrow the skills gap (Figure 9). There are social factors too – about a quarter of births are unplanned and out of wedlock, largely to teenagers with limited resources to raise children, which in turn affects early childhood development. Social policy is seeking to reduce these unplanned births.

Figure 7: Declining worker participation rate



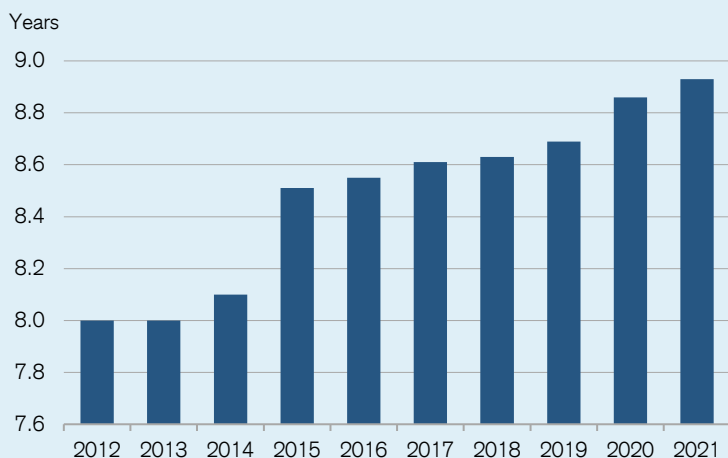
Source: Department of Provincial Administration, Credit Suisse

Figure 8: Net migration has slowed too, but can rise again



Source: UN Population Statistics, Credit Suisse

Figure 9: Average years of schooling for Thais aged 15 and above

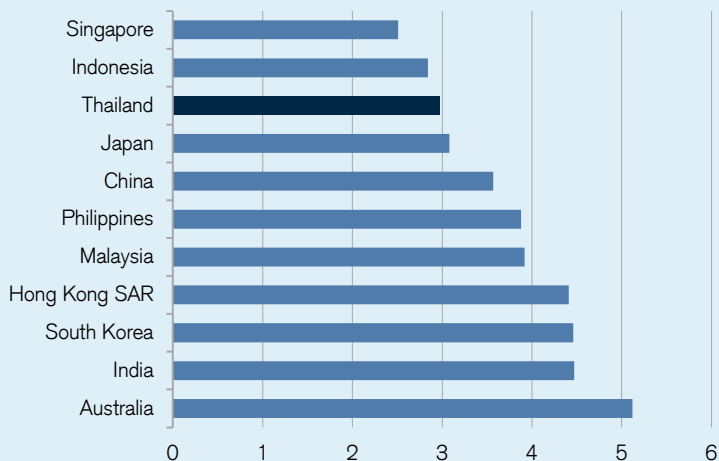


Source: Education Council, National Statistical Office, Credit Suisse



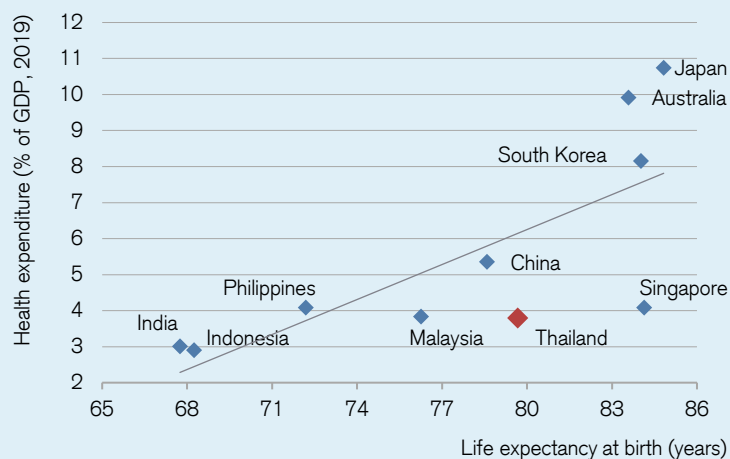
**Figure 10: Low educational expenditures as a % of GDP**

Education expenditure as a % of GDP



Source: Refinitiv, Credit Suisse

**Figure 11: Thailand's healthcare system highly cost-effective**



Source: World Bank, UNDESA, Credit Suisse

The system produces too many business graduates and too few with technical skills. As a result, unemployment for recent graduates is higher than for youths without university degrees. Resources would be better spent on two-year vocational schools rather than four-year universities. Thailand's educational spending is low by regional standards (Figure 10): We consider educational inadequacies to be the biggest impediment to Thailand escaping the middle-income bracket.

### Strengths and weaknesses in safety net for seniors

On the negative side, the pension system seems inadequate. Civil servants enjoy both a generous defined-benefit pension and a defined contribution plan that are sufficient for most needs, and the retirement age of 55 is too generous. However private formal sector workers are less well covered. Workers for large companies in the formal sector must participate in a defined-benefit plan with varying contributions from employers, employees and the government, and firms are able to establish supplemental tax-exempt provident funds. On the other hand, workers in the large informal sector face much tougher conditions. The government currently provides only THB 600 per month to the elderly, an amount less than one-quarter of the poverty line. A savings plan for informal sector workers offering matching contributions from the government has yet to attract a significant number of participants.

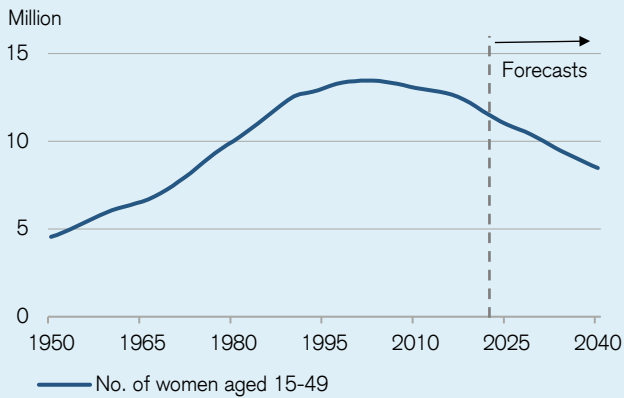
On the positive side, Thailand has a "bare-bones" (or "stripped-down") but effective universal health plan. For a nominal sum, any Thai can receive full treatment for almost any illness at a public hospital. Queues are long and cutting-edge treatments are lacking, but nevertheless highly cost-effective basic care is available for all. Civil servants have a more sophisticated separate system, as do workers in the formal sector. Higher-income Thais generally access premium private hospitals.

The returns on Thailand's healthcare investments are very high. Expenditures as a percentage of GDP are among the region's lowest, but life expectancy and other health outcome metrics are strong (Figure 11). The low level of deaths during the COVID pandemic highlights the system's effectiveness. Globally, Thailand's universal healthcare is considered a model among economists who use it as a textbook example of cost-effective healthcare in developing countries.

# South Korea

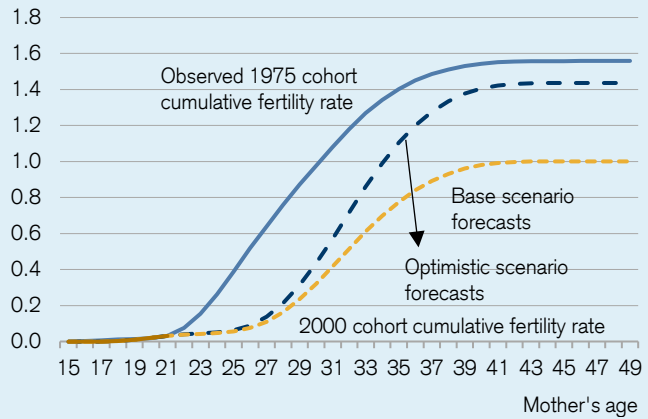
Keon Han, DJ Kim, Michael Sohn, Junghoon Suh, Chaerin Lee

**Figure 1: Number of women of reproductive age over time**



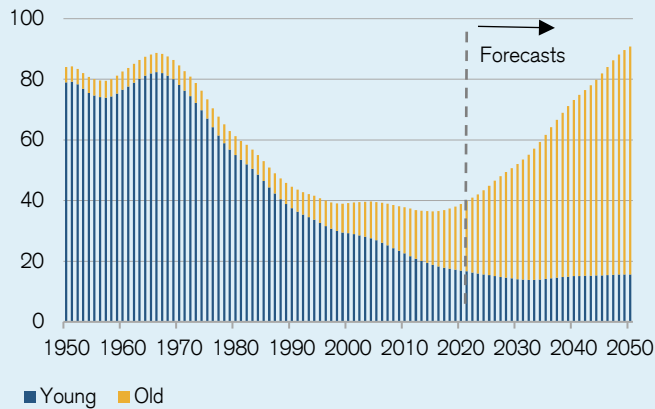
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



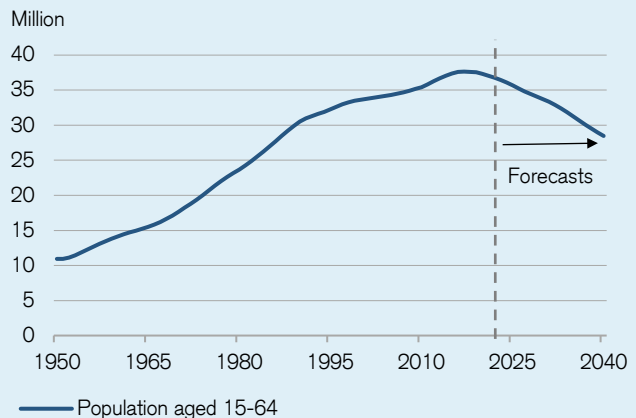
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



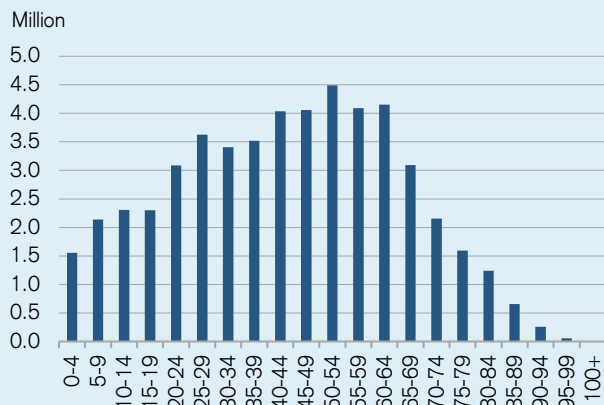
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15-64) 1950-2040**



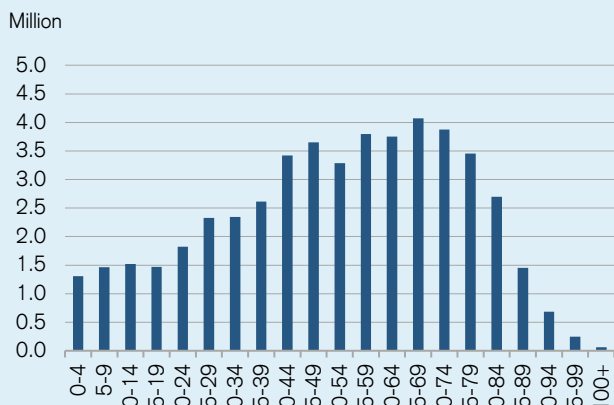
Source: UNDP, Credit Suisse

**Figure 5: Population pyramid 2022**



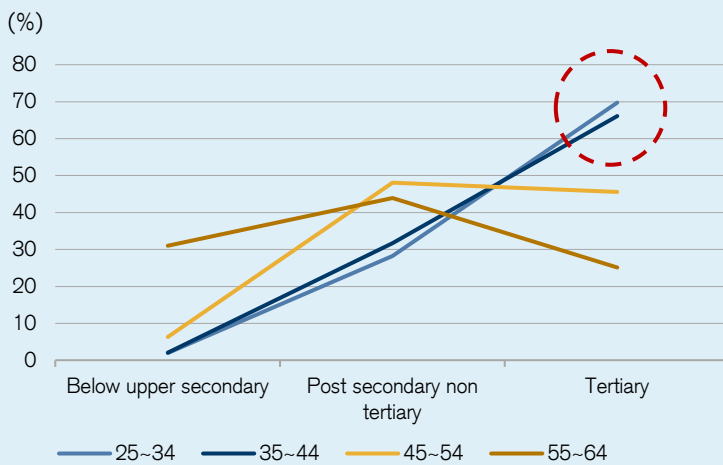
Source: UNDP, Credit Suisse

**Figure 6: Population pyramid 2040**



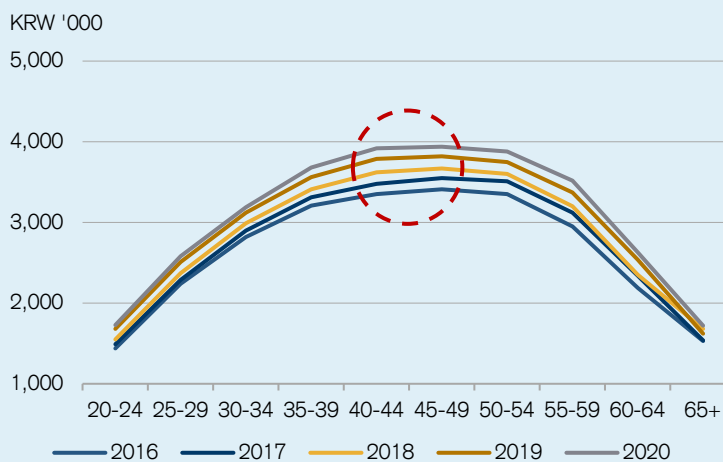
Source: UNDP, Credit Suisse

**Figure 7: Education level per age cohort (as of 2020)**



Source: OECD, Credit Suisse estimates

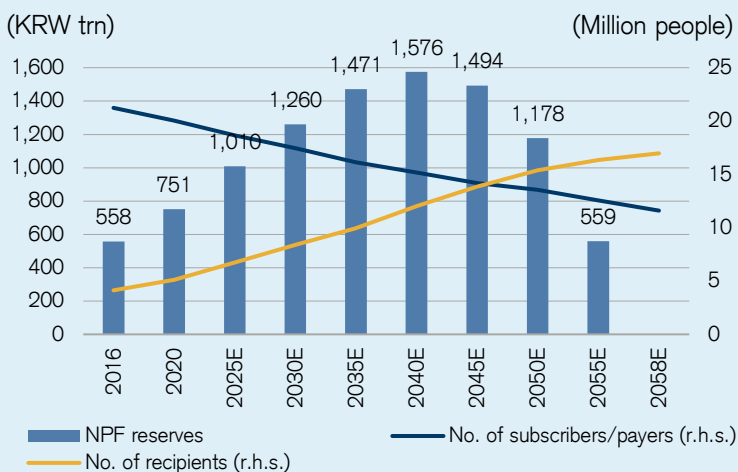
**Figure 8: Peak in population earnings (35-59) steady until 2030**



Source: KOSIS, Credit Suisse estimates

**Figure 9: National pension reserves could be depleted by 2058E**

Pension depletion forecast by 2058E



Source: KIHASA (Korea Institute for Health and Social Affairs), Credit Suisse

South Korea's fertility rate fell below the replacement level in 1984 (one of the earliest countries to experience this in Asia) and, over the past decade, it has been even lower than Japan's. The compounding effect of a sustained low fertility rate means that the number of women aged 15-49 is now falling sharply. With the fertility rate of younger cohorts expected to be even lower than that of the previous generation, a period of rapid decline in working-age population and a rise in dependency ratios is starting.

### Improving productivity to keep output stable

While the number of children is falling, their physical development as well as education continue to improve. The youngest generation is the best educated (aged 25-34), although this trend may be peaking: the gap between the 25-34 and 35-44 age groups is narrower than that of the older cohorts (Figure 7) as 70% now have a tertiary education.

### Pressure on savings likely, but may be 15 years away

The working-age population is expected to shrink by 1% p.a. between 2020 and 2030, but the decline in the most productive cohort with the highest earnings (the 35-59 age group) should be slower (Figure 8). In 2030, people born between 1980 and 1990 should reach their peak earnings age (45-49) unless corporate culture changes, which is unlikely: this decade saw 650,000-800,000 births annually. Total births fell below 600,000 after 2000 (currently 250,000-300,000). A longer work life would also offset the decline as the average Korean retires at 49, which is much below the statutory age of 60. Thus sustained earnings growth should offset some of the effects of the rise in the dependency ratio, helping to sustain the aggregate level of savings. For individuals too, the savings-consumption split should not change meaningfully, given that all workers are mandatorily signed up to the defined-benefit National Pension Scheme (NPS).

While the current contribution of 9% of monthly income has been fixed since 1998 and is lower than in peer OECD countries (Japan: 18%, France: 28%; Italy 33%), current contributions are sufficient for current benefits. As per the Korea Institute for Health and Social Affairs, reserves deployed in the National Pension Fund (NPF) are projected to grow until 2043, with a depletion expected only by 2058 (Figure 9). The Korea Ministry of Health and Welfare reached similar conclusions in its 2018 study.

Thus pressures of an aging population may only become imminent by the middle of the next decade when the dependency ratio rises to levels last seen in 1980. This could trigger (1) an increase in the contribution rates, (2) a higher monthly payment ceiling, or (3) an extended contribution period. Otherwise, individuals concerned that they may not have enough savings in their old age may increase their level of savings sooner.

### Healthcare spending should continue expanding

Annual healthcare spending reached 9% of GDP in 2021 versus 6% in 2010. While this is below the 10%–20% ratio seen in OECD countries like the USA, Germany, France and Japan, we expect ongoing demographic changes (aging) and lower labor productivity growth in healthcare to drive growth in this ratio for Korea and possibly put pressure non-healthcare spending.

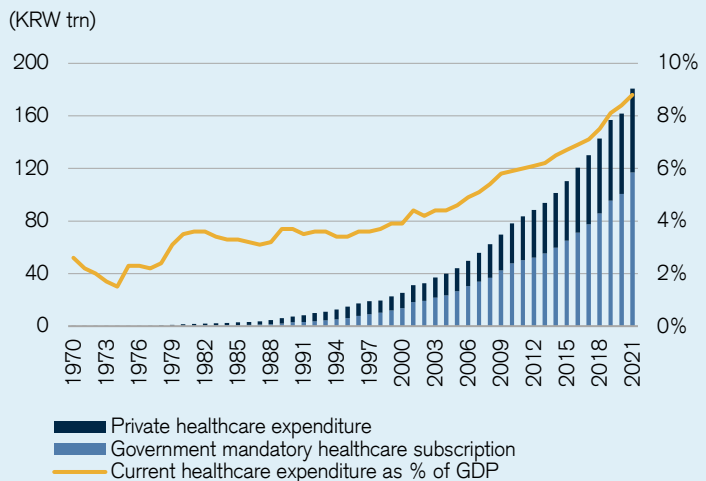
Average household consumption has already started flattening, which we attribute to higher savings for longer retirement periods and the lower mix of the younger working population, which tends to have higher per capita consumption. The Bank of Korea estimates that such demographic changes have cut household consumption by 0.9% p.a. since 1995 and forecasts further cuts of 0.7% p.a. until 2035.

### No imminent reversal of demographic trends

Both fertility rates (the number of children per woman) and crude marriage rates (the number of marriages per 1,000 people) in Korea have been sharply declining over the past 20 years. The average age of first marriages is also still rising. The country's fertility rate of 0.81 as of 2021 is the lowest globally (versus the OECD average of 1.6) and, with the number of new births (260,000–300,000 p.a. in recent years) now falling below the death rate, the population has already begun to shrink.

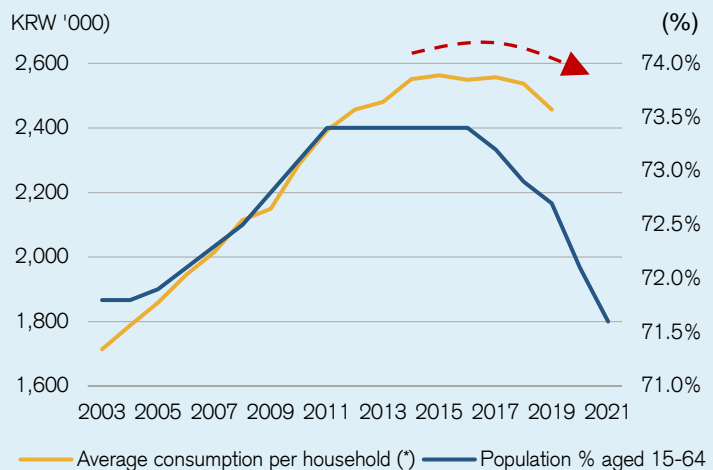
**Figure 10: Healthcare expenditure rising (9% of GDP in 2021)**

Total current healthcare expenditure = government mandatory healthcare subscription + private healthcare expenditure



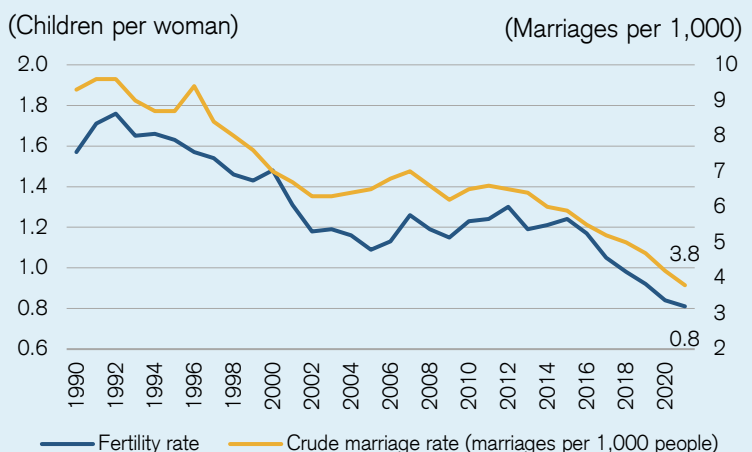
Source: Korea Ministry of Health and Welfare, Credit Suisse

**Figure 11: Flattening of household consumption due to aging**



(\*) Consumption data post 2019 provided on amended basis and therefore not meaningful  
Source: OECD, Statistics Korea, Credit Suisse

**Figure 12: Fertility and marriage rates still falling**

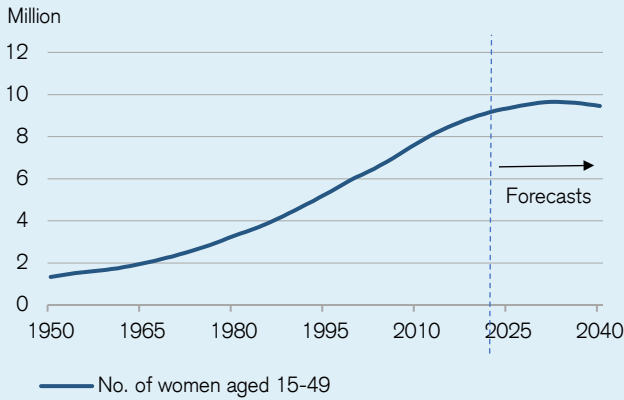


Source: Statistics Korea, Credit Suisse

# Malaysia

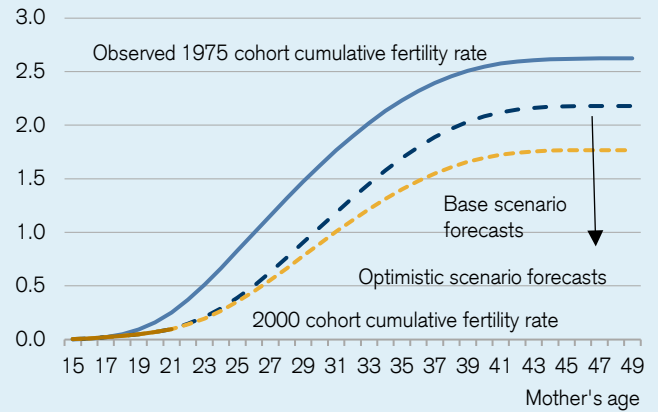
Danny Goh, Jae Ang

**Figure 1: Number of women of reproductive age over time**



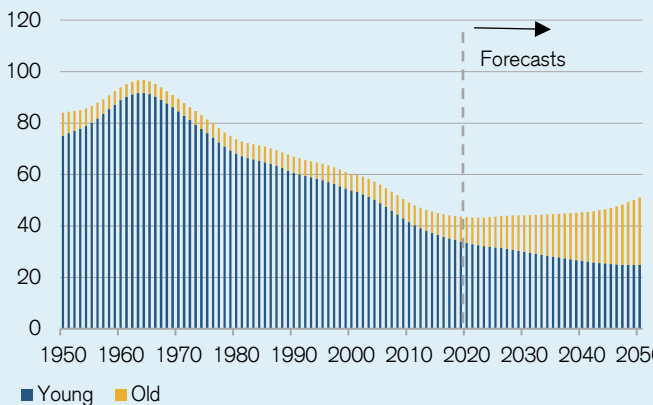
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



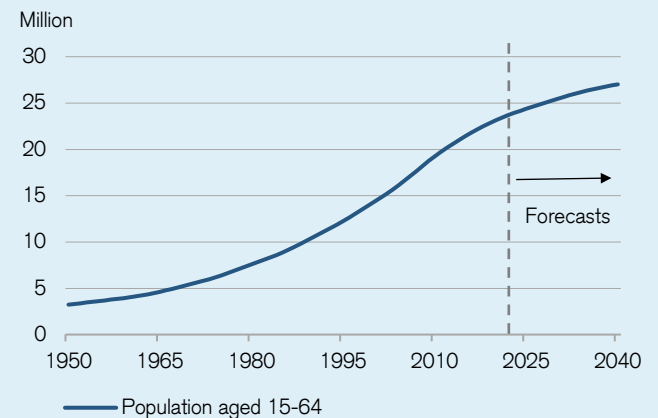
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



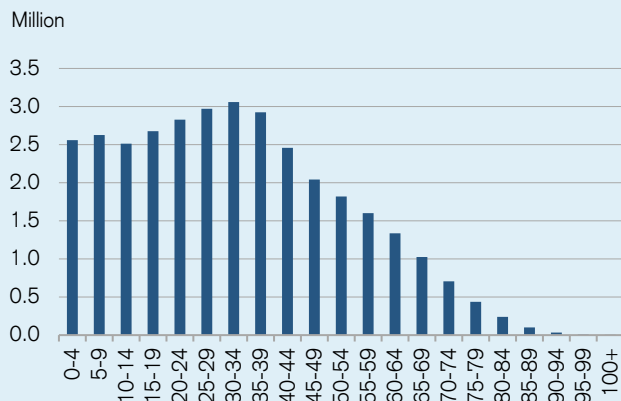
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15-64) 1950-2040**



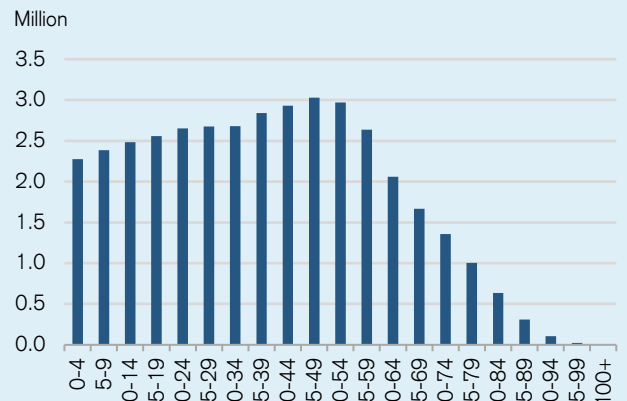
Source: UNDP, Credit Suisse

**Figure 5: Population pyramid 2022**



Source: UNDP, Credit Suisse

**Figure 6: Population by age group in 2040**



Source: UNDP, Credit Suisse

Malaysia is still early in its demographic transition: Its TFR only dropped below the replacement rate of 2.1 in 2013 and the number of women of reproductive age is expected to keep growing until 2033. The working-age population should keep growing until 2046 and the median age of 30 is expected to rise to 40 by 2048, much faster than the 50 years taken by the USA/EU, but slower than the 17–23 years for North Asia.

## Improving education, rising female LFPR and wages

Malaysia's literacy rate rose rapidly from 70% to 89% between 1980 and 2000 and then the pace slowed: it reached 93% in 2010 and 95% in 2019 (Figure 7). However, Malaysia has the highest number of average years of education for an adult after North Asia, i.e. ten years in 2015 versus six in 1990. This is important for income growth as wages of workers with at least a secondary school education are more than 30% higher than for workers without any formal education. Better-educated workers can also work for more years: the median income for the 60–64 age group registered the highest growth rate over 2010–19 of 10% p.a. versus a median of 6% for all age groups.

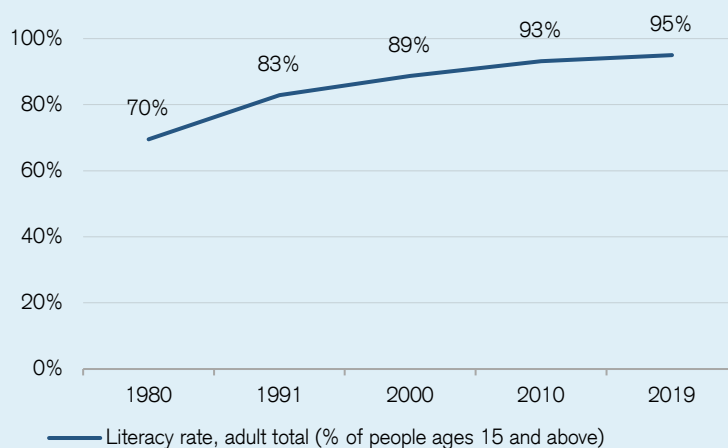
Unlike in the rest of Asia, labor force participation rates (LFPRs) in Malaysia have improved on average, with the most significant increase in the female LFPR from 47% to 56% over the past decade (Figure 8). Equally important, the wage gap between males and females has also declined from 14% in 2011 to just 6% in 2020. In fact, females in the 30–49 age group command higher wages than males. This bodes well for the spending power of females and thus benefits retail and service industries that cater to female customers.

## Savings declining, but strong government system

Data shows that people above 54 years of age are less likely to save than younger individuals; those in the 25–54 age group tend to save the most. Over the past ten years, the savings rate has declined to 26% in 2021 from 34% in 2011 and is well below the peak of 40% back in 1998 (Figure 9). This is primarily due to the increase in real estate purchases by households.

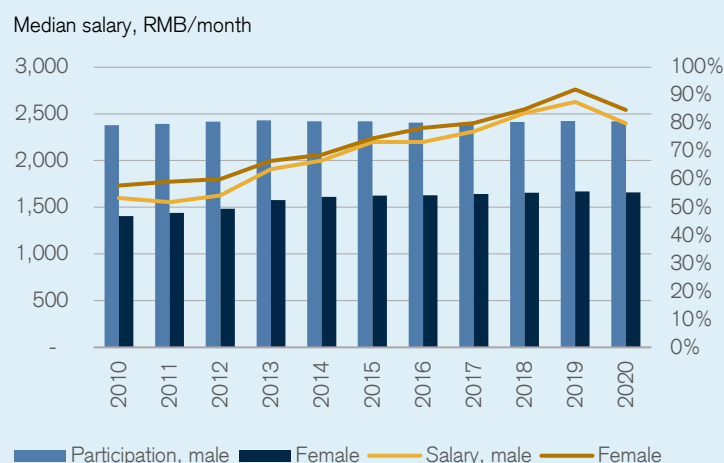
Malaysia has a national pension scheme called the Employees' Provident Fund (EPF) where members contribute 11% of income and their employers contribute another 12%–13% of their income into the fund. It currently has 14.9 million members out of which 7.6 million are active. Net contributions (after deductions for withdrawals) to the EPF have been around 1.2%–2.3% of

Figure 7: Literacy rate stagnating at 95% since 2016



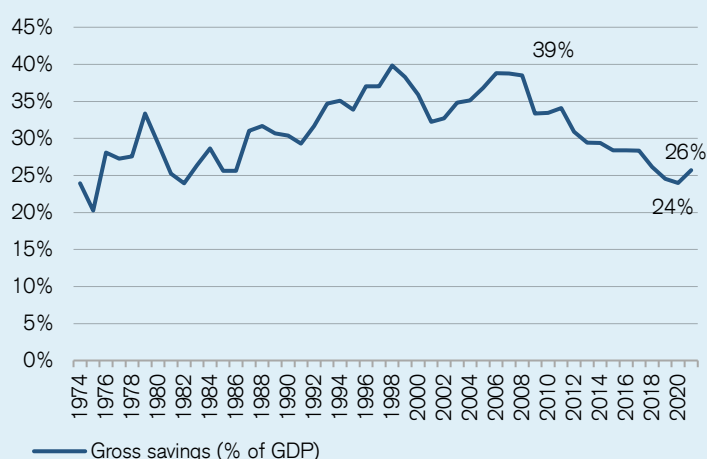
Source: DOSM (Department of statistics of Malaysia)

Figure 8: Median monthly wages by level of education



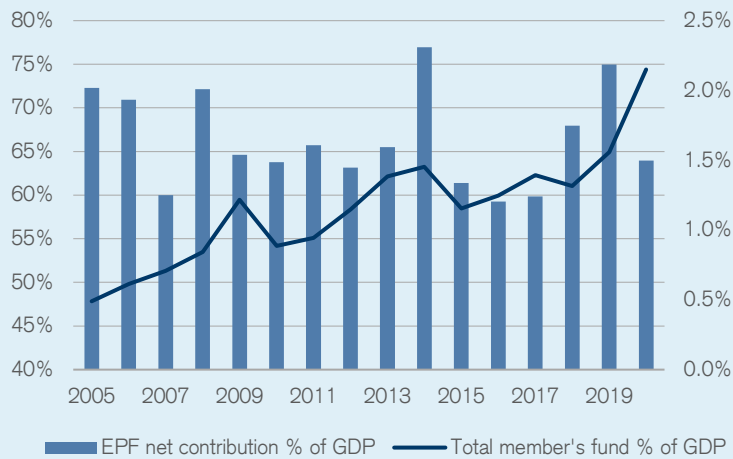
Source: DOSM (Department of statistics of Malaysia)

Figure 9: Malaysia's savings rate has declined since 2005



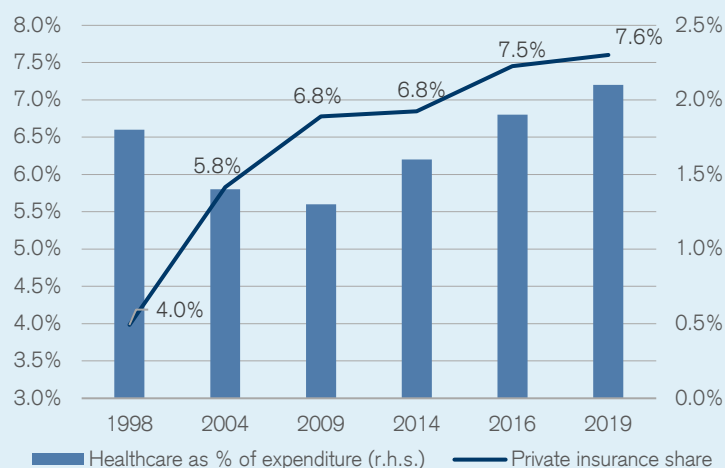
Source: World Bank

**Figure 10: EPF net contributions and fund size (as a % of GDP)**



Source: PIDM & The Behavioral Insights Team (BIT)

**Figure 11: Private health insurance share rising**



Source: World Bank

GDP since 2005 and the fund size has grown at a CAGR of 8.4% p.a. over the past ten years to reach USD 217 billion or 74% of GDP (Figure 10). However, a study conducted by RinggitPlus in 2020, which found 83% of respondents had EPF savings, also found that 70% think this will not be sufficient for them to retire: 39% indicated that their EPF savings can only last for five years or less during retirement.

Expenditure growth outpaced wages over the 2009–19 period, growing 7.5% versus 7% growth in wages and reversing some of the gains seen between the aftermath of the Asian Financial Crisis (AFC) and the Global Financial Crisis (GFC) of 2007–08. Wages grew at almost twice the pace of expenditure between the AFC and GFC, i.e. 4.5% p.a. versus 2.7% p.a.

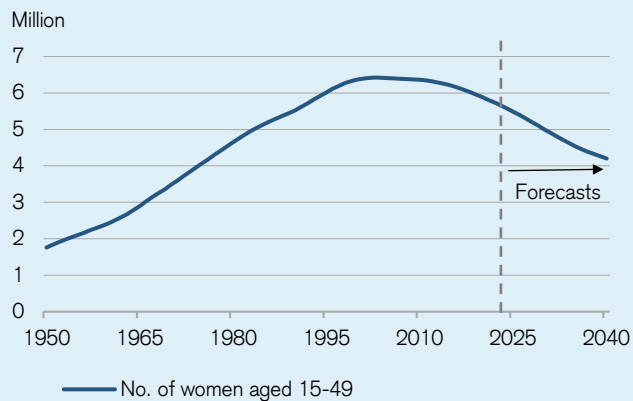
### Rapid growth in healthcare spending should continue

While healthcare spending increased only marginally from 1.8% in 1993 to 2.1% in 2019, it has risen at a rapid pace since 2009 (Figure 11), growing by 12.8% p.a. over the 2009–19 period and significantly outpacing growth in income and average expenditure of 7.0% and 7.5% p.a., respectively. With the share of population aged 65 or more rising from 5.3% in 2012 to 7.4% in 2021, and expected to rise further to 13% by 2040, healthcare spending could reach nearly 6% by 2040.

# Taiwan (Chinese Taipei)

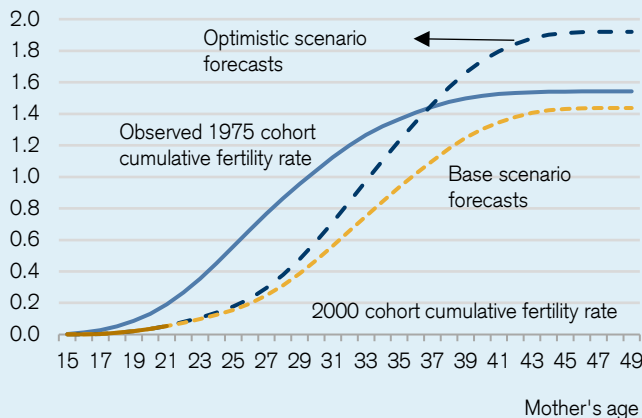
Chung Hsu, Randy Abrams, Chien P. Huang

**Figure 1: Number of women of reproductive age over time**



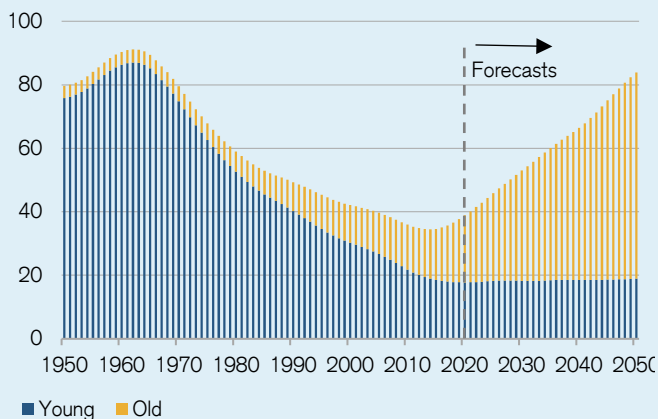
Source: UNDP, Credit Suisse

**Figure 2: Fertility rate by cohort**



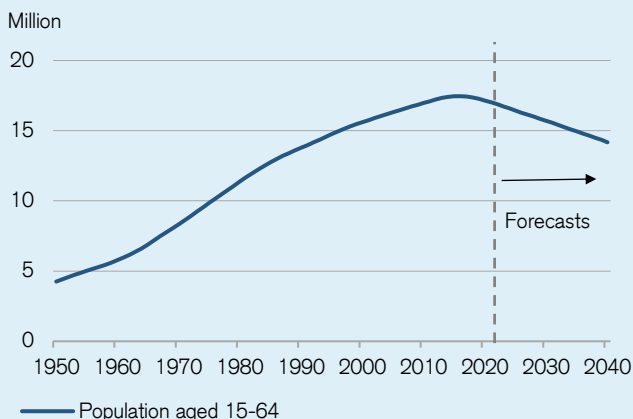
Source: UNDP, Credit Suisse estimates

**Figure 3: Dependency ratio (young-age and old-age) over time (%)**



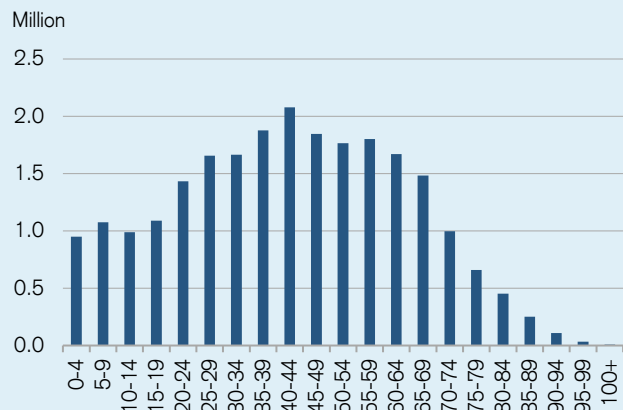
Source: UNDP, Credit Suisse

**Figure 4: Working-age population (15-64) 1950-2040**



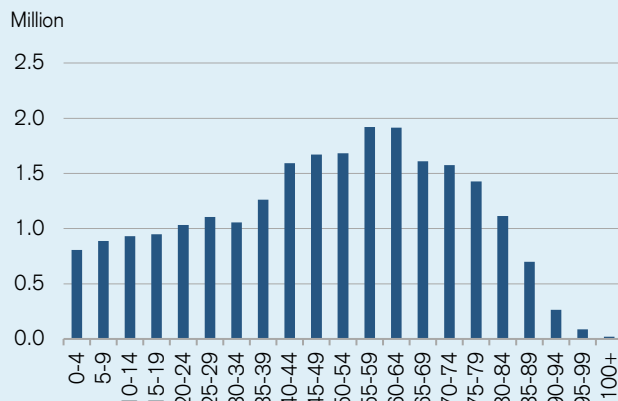
Source: UNDP, Credit Suisse

**Figure 5: Population pyramid 2022**



Source: UNDP, Credit Suisse

**Figure 6: Population pyramid 2040**



Source: UNDP, Credit Suisse



Taiwan (Chinese Taipei)'s TFR fell below 2.1 in 1984 and its demographic transition is now accelerating. The number of women of reproductive age peaked in 2003 and the TFR of younger cohorts continues to fall. The result: 139,000 babies will be born this year versus 420,000 in 1970. The working-age population peaked in 2016 and is likely to shrink 10% by 2030 and nearly 20% by 2040. The country is also aging rapidly: the median age rose from 30 in 1999 to 40 in 2019 and is expected to be 50 years in 2039.

## One of the steepest increases in dependency ratios

By 2025, one out of five citizens will be aged over 65. Taiwan's dependency ratio rose from 35% in 2015 to 41% in 2021 and will continue to rise by slightly over 1% a year to eventually exceed 80% by 2050. Consequently, the country will not only face worker shortages due to people retiring, but also because more labor will be needed for long-term care of senior citizens. Unlike the rest of Asia, where we only expect pressure to build up after a decade, we expect Taiwan (Chinese Taipei) to feel the pressure this decade. It is estimated that around 30,000 workers quit their jobs every year to take care of their families. Inward migration has begun (**Figure 7**) and is forecast to continue. The 700,000 migrant workers currently in the country are equivalent to 6% of its working population: they mostly come from Southeast Asia, helping to fill the gap.

Government efforts to raise fertility have so far seen limited success as in many other developed Asian economies. The government is therefore now trying to tackle the issue on multiple fronts. In 2018, the government estimated a shortage of 244,000 skilled workers and thus passed a New Economic Immigration Act in the hope of attracting foreign professionals and mid-level technicians who will also help to improve the population structure.

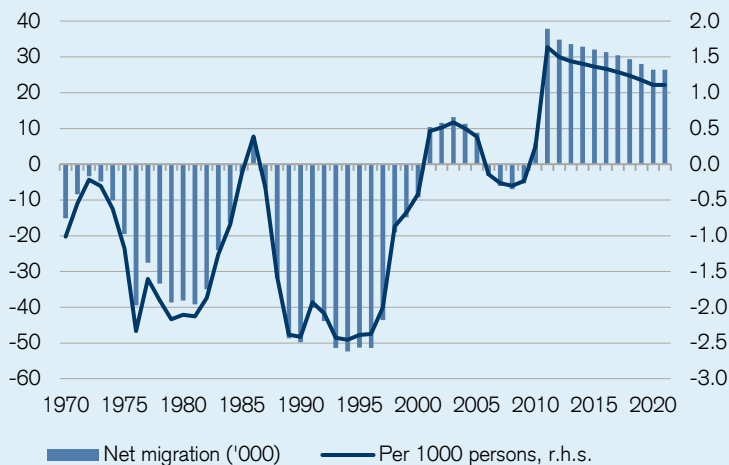
However, these gains are still small compared to the drop in the number of workers and the pace at which inward migration will need to increase to offset the drop in the working-age population. There is scope for the labor force participation rate to rise, but this is only occurring slowly, rising from 57% in 2000 to 59% in 2021. This should increase going forward with the government raising the legal retirement age to 65 years from 60 years previously.

## Improving workforce capabilities

Taiwan (Chinese Taipei)'s literacy level is very high (almost 100% for ages 10–59) and the percentage of the population with at least a high school education has risen over the past two decades from 52% in 2000 to 78% in 2021 (**Figure 8**). This should enable a greater shift in the working population to jobs that require less physical effort and enable many employees to work for longer. The associated higher productivity should be supportive of growth going forward.

The country's export mix has also changed toward more high-technology goods and growth has become more dependent on capital investments from high-tech companies. The government also

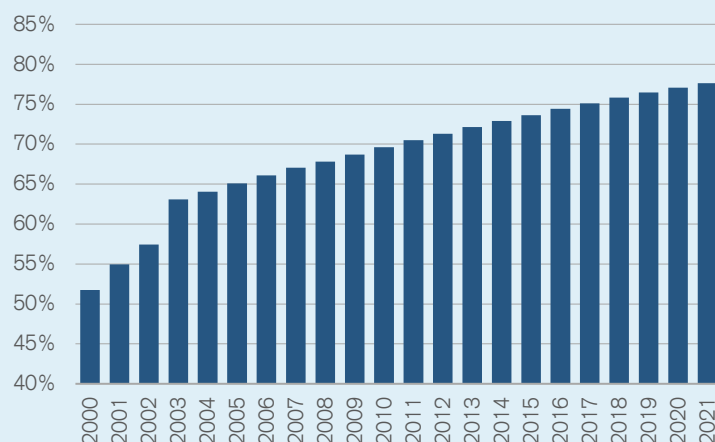
**Figure 7: Net migration is offsetting part of the decline in workers**



Source: UNPD, Credit Suisse

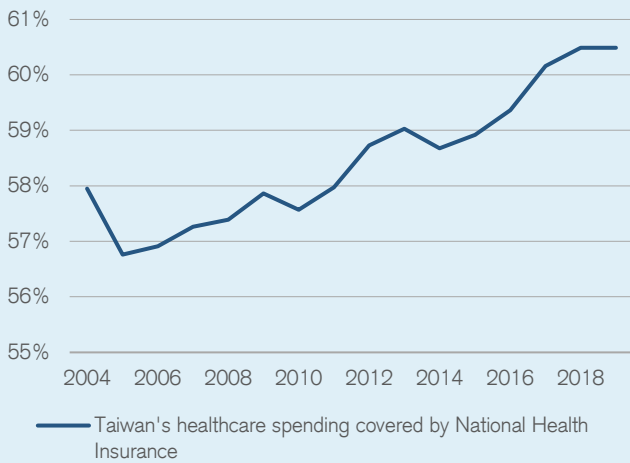
**Figure 8: The labor participation rate is rising, but slowly**

Taiwan population (15 years old and above) with high school or above education



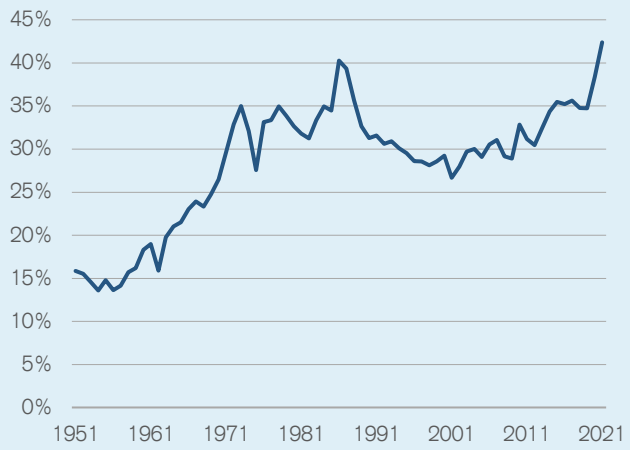
Source: Ministry of Labor, Credit Suisse

**Figure 9: National health insurance covers 60% of spending**



Source: Ministry of the Interior, Credit Suisse

**Figure 10: The savings rate is now 42% vs. 28% in 1998**



Source: Ministry of Health and Welfare, Credit Suisse

adjusted its Industrial Innovation Statute in 2019 to provide more incentives and subsidies in order to increase added value and reduce labor-intensive corporate capital investments.

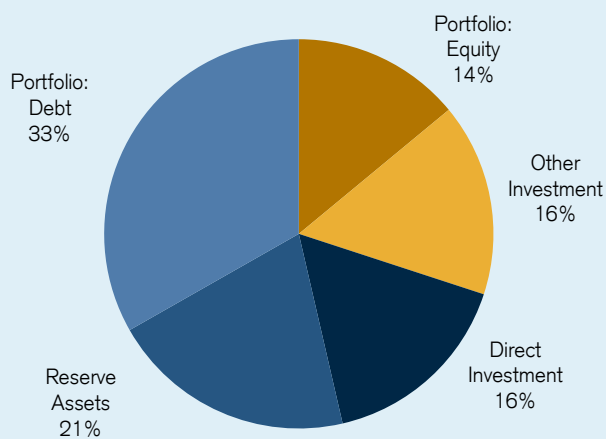
**Growing social safety net; private savings rising too**

A comprehensive national health insurance program covers around 60% of Taiwan's healthcare spending (Figure 9). Including private health insurance, healthcare coverage may be more than 80%. However the public pension only covers around 40% of the replacement rate and the government is working to improve this coverage through several initiatives. Nevertheless, we believe roughly half of most individuals' retirement will ultimately depend on their own

savings. This should be less an issue for elders, given their greater wealth accumulation during prior strong economic growth cycles (Figure 10) and inflated asset prices from the central bank's prolonged monetary easing over the past two decades. However, for younger generations (i.e. those below the age of 35), it will depend very much on their savings in the next two to three decades.

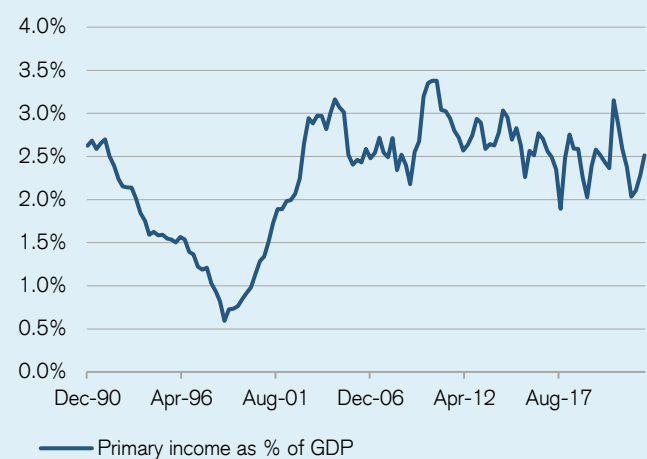
Taiwan (Chinese Taipei) holds USD 1.4 trillion of net international assets. At nearly USD 60,000, its per capita assets are nearly twice as large as Japan's. While a significant part comes from FDI and foreign loans (i.e. through corporations and financial institutions), individuals also directly hold foreign equity and debt (Figure 11). Primary income already accounts for 2.5% of GDP versus 4% in Japan.

**Figure 11: USD 2.7 trn of gross international assets**



Source: OECD, Credit Suisse

**Figure 12: Primary income as a % of GDP**



Source: CEIC, Credit Suisse



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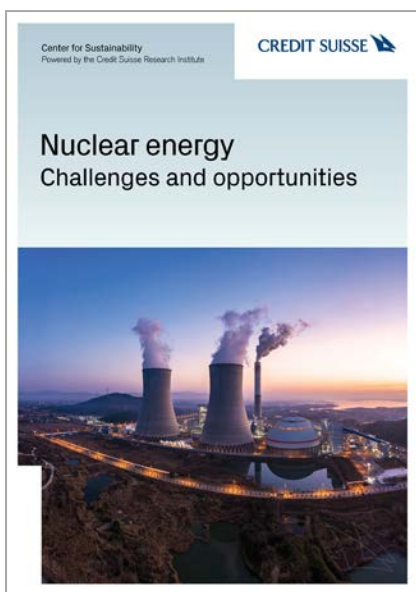
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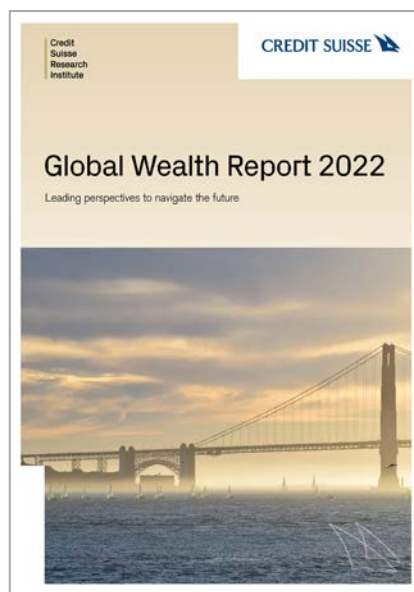
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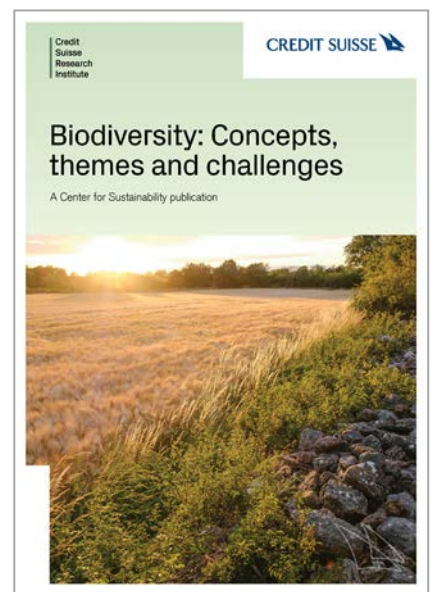
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