

# Global Demographics

## Mapping out a century of changes

The epicentre of population growth will move to Africa later this century, while India is set to overtake China to become the world's most populous nation by 2025

We show what these vast demographic changes mean, why ageing is the biggest social transformation globally...

...and how policymakers have a dilemma over how best to spend on education, healthcare, jobs and infrastructure



*This is a redacted version of a report by the same title published on 19-Feb-21. Please contact your HSBC representative or email [AskResearch@hsbc.com](mailto:AskResearch@hsbc.com) for more information.*

# The big picture

**Tectonic shifts.** Large parts of the world are going through demographic changes. According to UN World Population Prospects 2019, the epicentre of population growth should shift to Africa in the next decades. By about 2025e, India should overtake China as the most populous nation. And as populations shrink in other parts of the world, it might mean a shift in demand – lower volume growth, for example. Companies will need to prepare for this with higher prices, building brands or focusing on design. See [page 9](#).

**Mid-tier cities.** This is where people flock to, more so than the larger metropolises. This creates a new group of consumers in lesser-known cities across Asia and Africa like fast-growing Ruiru in Kenya or Imus in the Philippines. But it's also taking place in the developed world, where a focus on quality of life, a search for a lower cost of living and a boom in home-working means that medium-sized cities are the relative winners. See [page 12](#).

**Look at Japan.** Ageing is the biggest social transformation of the 21<sup>st</sup> century. By 2050e – for the first time in history – there will be more people over the age of 65 than under the age of 15. But Japan shows this does not necessarily mean that the labour force will shrink. And as people work longer, they accumulate more wealth. This has implications for wealth managers, banks, insurance companies and financial markets. See [page 18](#).

**Women to the fore.** More and more women are working. This is especially the case in China and also Indonesia where more are completing higher education and getting managerial jobs. This boosts household income and impacts how families spend their income. See [page 36](#).

**Education.** This can be a game-changer for growth and prosperity. For instance, China, Thailand and Brazil are spending a higher proportion of GDP on education but India, Cambodia and Bangladesh aren't. Egypt could see a large payoff for its better education. See [page 28](#).

**Healthcare.** Demand for healthcare will likely rise fastest not in aged societies but in younger nations where more people are reaching 40. That's the age when all sorts of diseases tend to start increasing. An ageing population therefore would push up demand for health care. In the next few decades, this is especially the case in Nigeria, Egypt, Turkey and Indonesia. See [page 25](#).

**But, there is no free lunch.** Policymakers face dilemmas – education is important, but so is spending more on infrastructure and healthcare. And how to find a job for the 840,000 Indians (or 307,000 Nigerians) that are added to the job-hunting pool every month. The dilemma is what to prioritise. These decisions will shape their economies for decades to come. See [page 10](#).

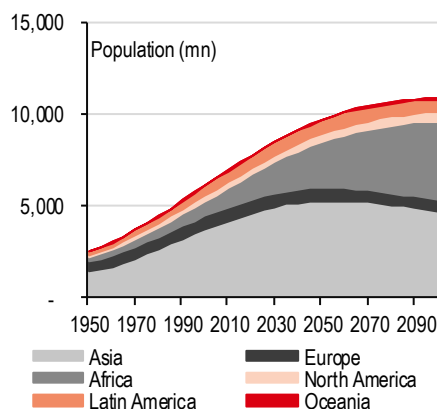
**Focus on the shrinking household.** This is a particular trait in North Asia – as per Global Demographics, the number of single-person households is estimated to rise to 32.7% in Korea by 2030e. This changes spending patterns – more discretionary consumption and ready-to-eat meals, for example. It should also fuel faster growth in convenience stores vs. hypermarkets or supermarkets. We expect similar trends in mainland China soon. See [page 33](#).

**Understand the rise of the Chinese “empty-nesters”.** The combination of an ageing population, children leaving home, and the rising numbers of working women is a very powerful force in China. It has led to the growth of the ‘empty-nesters’ cohort, and is probably one of the largest demographic shifts unfolding in the world. This group buys higher quality products – in industries from travel to fitness – and they are willing to pay higher prices too. See [page 40](#).

**Unstoppable.** Just like the weather, many of these trends are unstoppable and have major implications for markets and companies. We believe corporate executives and investors need to understand this now or potentially lose market share to competitors that take action early.

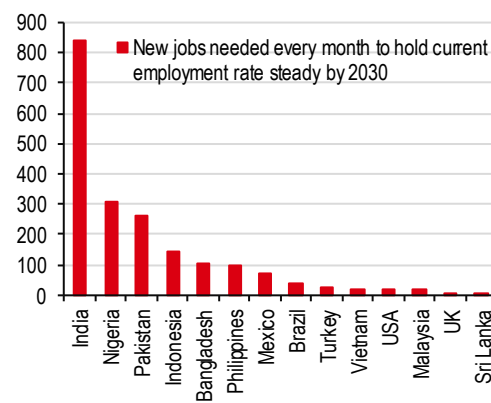
## Six charts that tell the global demographic story

### 1. The world's population continues to rise with Africa taking the baton from Asia



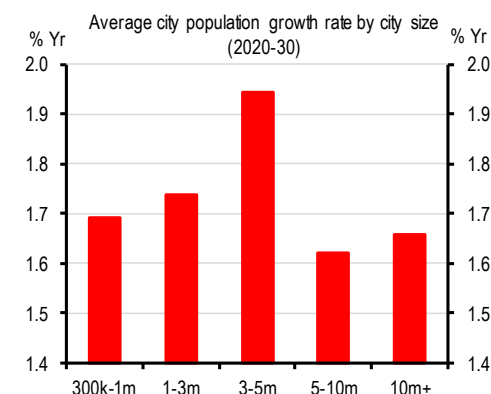
Source: UN Population Prospects 2019, HSBC. Note: these are UN forecasts and we believe that there is some uncertainty further out, particularly if fertility rates are lower than expected.

### 2. This means jobs need to be created at a faster pace, especially in India



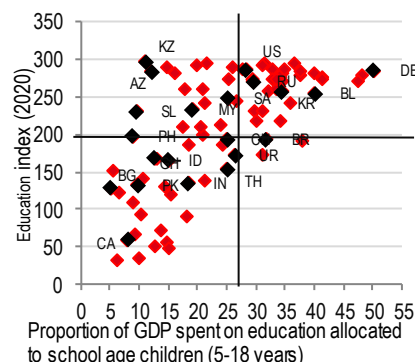
Source: UN Population Prospects 2019, HSBC

### 3. People will move to cities, particularly mid-tier cities, in search of opportunities



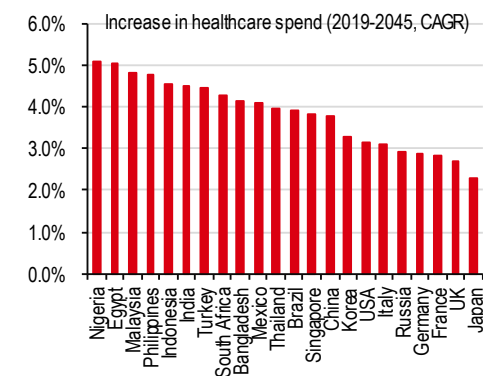
Source: World Urbanization Prospects 2018, UN estimates, HSBC

### 4. Education can be a game-changer as it impacts investments and living standards



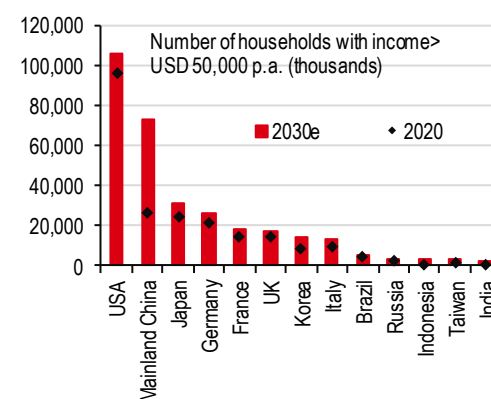
Source: World Bank, PISA at the OECD, Global Demographics, HSBC

### 5. People living longer doesn't only mean more expenditure on health...



Note: CH = Mainland China. Source: Global Demographics, HSBC

### 6. ...but also more discretionary spending as household sizes fall and earnings rise



Source: Global Demographics, HSBC

# Overview

- ◆ Demographics are not 'bad', just complex; people are ageing, working longer, more women have jobs, and education is changing
- ◆ These changes to society are especially important for financial markets and equity portfolio construction...
- ◆ ...as they drive key investment themes like an acceleration in asset accumulation, impact interest rates and fuel mid-sized cities

## Demographics and the weather

If you're looking for investment ideas for the next month or so, this report will not help you. However, if you want to understand what ultimately shapes the world and the long-term drivers that are going to dominate various regions for decades – this report will be right up your alley.

Demographics is an incredibly wide topic and the world is a big place. This report raises as many questions as it attempts to answer. Many of the issues raised here will be discussed in more detail in forthcoming reports that delve deeper into some of these issues. And some of the findings also build on our previous extensive work on demographics.

One of our first starting points is that demographics are similar to the weather – there is little you can do to stop it, and there is no 'good' or 'bad' weather. A farmer will love the rain, a sunbather won't. You can complain about it, but rain will fall. Instead, it's all about being prepared for the demographic shifts; to keep with our weather analogy, it's about having an umbrella at hand, or sunscreen if it shines. This report highlights these different tectonic shifts.

If we can summarise this report in a few sentences, it would be something like the following:

*Almost every country faces a demographic challenge of one form or another. Either it is rapid ageing or a rapidly growing population that may make it hard to create enough jobs. The world's population is expected to approach 10bn by 2060 (source: UN World Population Prospects 2019), up from 8bn today, but in many parts of the world, we will see shrinking workforces and major fiscal challenges. India is expected to become the world's most populous country by 2025, while more people all over the world will move to mid-tier cities, particularly in Asia and Africa. But only a few countries may be well-placed to benefit from this rapid population growth: we would highlight Egypt with its investment in education that will pay dividends for decades for its young population. Asians, however, are turning older, living longer, flocking to congested cities and generally staying in small households, mostly because women are having fewer children and working more. They save more and because households are getting smaller, they are spending more and spending it differently. We identify long-term investment themes that are driven by these trends.*

This all has implications for businesses and investment managers looking for new opportunities.

## A few tectonic shifts

We start this report by looking at underlying demographic shifts reshaping the world. Many of these themes are 'slow burners' and some are hard to see, but they are undoubtedly playing out:

- ◆ **The world's population will continue to rise**, at least until the 2060s. According to UN World Population Prospects 2019, by 2025e, India will be the most populous nation on the planet, China's population will start to fall after 2030 and three African nations - Nigeria, Ethiopia and Egypt - will be in the top 10 most populous nations by 2050. Aside from China and India, others will be Brazil, Bangladesh, Indonesia, Pakistan and the US. But also, think of risks around food shortages, food waste and malnutrition<sup>1</sup>.
- ◆ **Urbanisation continues**. Just over half of the world's population lives in urban areas, and this is rising. In particular, Africans and Asians continue to move to cities. However, it is mid-tier cities that are growing faster than mega cities. This has implications for logistics, distribution and business strategies for those companies that want to grow in these cities. But also think of the growing consumer footprint as city dwellers, for instance, cause more environmental damage than rural residents<sup>2</sup>.
- ◆ **Working from home** means that cities may have to compete to attract a more mobile workforce. A key part of this will be making cities greener – more cycling, less congestion and pollution, and more open spaces. The flipside is cities with high house prices could see those dip relative to elsewhere and a greater degree of working remotely could increase data processing and power needs, which need to be addressed.
- ◆ **Education** can be a game-changer. Some nations could see considerable pay-offs from education in the form of more investment, higher labour productivity and a lift in potential growth. This is especially the case in Egypt, Argentina and Brazil. Other nations and regions need to do more like ASEAN (Indonesia, Philippines), India, Ghana and Mexico<sup>3</sup>.
- ◆ **People are living longer and working longer**. This means that they accumulate more assets over their working life. This is especially the case in north Asia where wealth management is likely to benefit. Savings can also put downward pressure on interest rates.
- ◆ **Health** and wellness are key in ageing societies but most demand for health products is seen in nations that are young but seeing the average age move towards 40 over the next decade. COVID-19 is accelerating this. Part of this will likely flow through to traditional medicine, which continues to appeal in parts of Asia such as China, India and Indonesia.
- ◆ **More women are working**, possibly because the tendency is to have fewer children. This means that in many parts of the world household income is rising, which has large implications for what is bought, and where it is bought. We note that this is why there are large differences in consumption patterns in India versus China. And why Bangladesh and Indonesia face shifts in consumption patterns.
- ◆ **Households are getting smaller**, which changes the way they consume. This is especially the case in north Asia and parts of the developed world. A one-person household spends more on ready-made meals and outside entertainment than a four-person family. This, too, will have consequences for those who invest in consumer companies in these nations.
- ◆ **Chinese 'empty-nesters'**: There's a rise in the number of households where grown-up children have left and parents then find themselves in a comfortable financial position. These 'empty-nesters' are the largest, fastest-growing consumer market globally. The number of Chinese households earning more than USD50,000 per year is expected to be over 64m by 2030e (source: Global Demographics), growing at a CAGR of 15.5% since 2010. Premiumisation and companies moving up the value-added ladder can benefit.

<sup>1</sup> UN Sustainable Development Goal #2 (SDG2)

<sup>2</sup> UN Sustainable Development Goal #11(SDG11)

<sup>3</sup> UN Sustainable Development Goal #4 (SDG4). Education tends to increase awareness of sustainability issues.

## Challenges and dilemmas

This report throws up as many questions as it can answer them. Here are a few dilemmas and challenges:

**Consumer demand.** As populations shrink in many parts of the world (including China starting from the end of this decade), it might mean a shift in the nature of demand – lower volume growth, for example. Companies can't just rely on higher volumes but instead need to prepare to grow revenue through higher pricing, for example by building brands or focusing on design.

**Jobs.** Rapidly growing populations can bring their own challenges – policymakers need to put in place the right conditions so that the extra 840,000 Indians entering the workforce every month can find a job (or 250,000 in the case of Nigeria), based on the expected growth in the working-age population. That will not be easy.

**Priorities.** Education plays a major role here, and more spending is required. But there are also demands for increased spending on infrastructure to facilitate growth in many mid-tier cities. And more needs to be put aside for proper healthcare as populations age. The dilemma is what to prioritise. These decisions will shape economies for decades to come.

**Smart living.** As working habits change, so does the preference for where people want to live and spend their time. This means competition between cities, with many implications. This could be making cities greener, more efficient and well-planned to reduce congestion or to transition to a more circular economy which focuses more on recycling and re-use. Funding is required for this and green bonds may play a role. But this will also require a longer-term approach to city planning with the benefits set to accrue over many years.

**Unstoppable.** And then there are trends such as the rise of smaller households and the emergence of Chinese empty-nesters that are, just like the weather, unstoppable. Companies need to understand this, or face the prospect of losing market share to their competitors that do prepare for all of this.

But let's first kick off with a basic question like "how many people are there actually?". This is the topic of the first chapter of the report.



# How many fit on a planet?

- ◆ The world's population may reach 10bn by 2060<sup>4</sup>...
- ◆ ...with the current food production sufficient to sustain this growth
- ◆ By 2050, the six most populous nations will be India, mainland China, Nigeria, the US and Pakistan and Indonesia

## The apocalypse, avoided

Because demographics are all about births and deaths, opinions are widespread. Some believe the planet has too many people for its own good, others believe that ageing will lead to some social apocalypse while others believe that with too few babies in some corners of the planet like Korea and Japan that there won't be enough people left. Demographics, it seems, is not for the faint hearted.

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### The Malthusian abyss

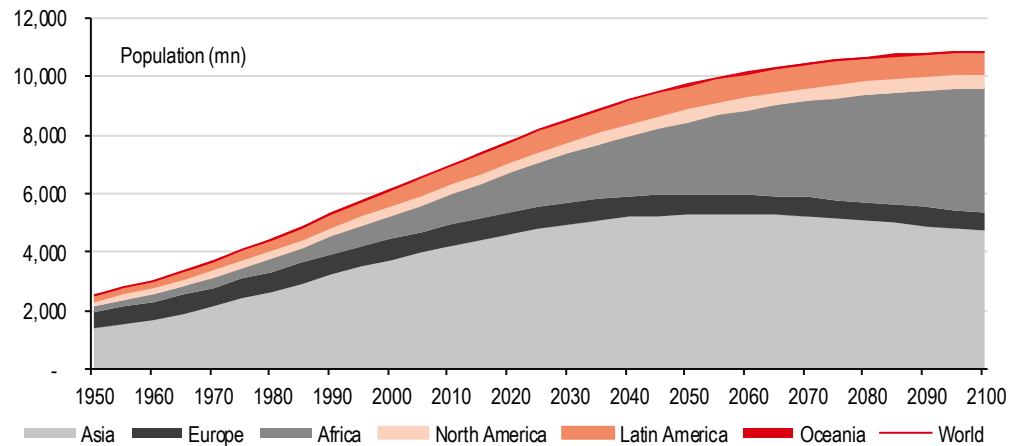
The problem of population and prosperity was first addressed in earnest by Thomas Malthus in 1798<sup>5</sup>. Malthus came to a fatalistic conclusion. The biological capacity for humans to increase in number by geometric proportions would always be checked by the more modest rate at which food production could grow. Hence, he argued, the world would be characterised by poverty and starvation and most people were destined to live at or near the level of subsistence. To deal with this, he conjured that people would marry later and have fewer babies or, something he oddly called a "positive" adjustment, wars and disease would thin the numbers.

However convincing Malthus was at the time, it proved to be wrong. Ironically, the machinations for humankind to break free from the Malthusian trap were already set in motion because, years earlier, in the same year when Malthus was admitted to Cambridge in 1784 to study mathematics, a certain James Watt completed the final patent for what he called a steam engine. The invention would be a catalyst for major other big advances in technology that, eventually, would prove Malthus wrong.

Fortunately, since then, food production grew more quickly and the global population more slowly, than expected. The lot of mankind improved despite a 60% increase in world's population.

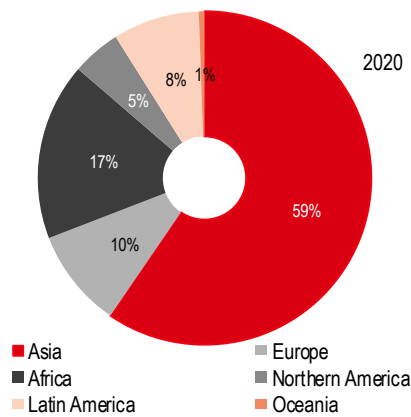
<sup>4</sup> It might be earlier. A study predicted that the global population would come to a peak much earlier than expected – reaching 9.73 billion in 2064 – before dropping to 8.79 billion by 2100. Source: "Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting analysis for the Global Burden of Disease Study", Prof Stein Emil Vollset, Emily Goren, PhD, Chun-Wei Yuan, PhD, Jackie Cao, MS, Amanda E Smith, MPA, Thomas Hsiao, BS et al., The Lancet, Vol. 396, nr. 10258, P1285-1306, October 17, 2020.

<sup>5</sup> This is in his "An essay on the principle of population"

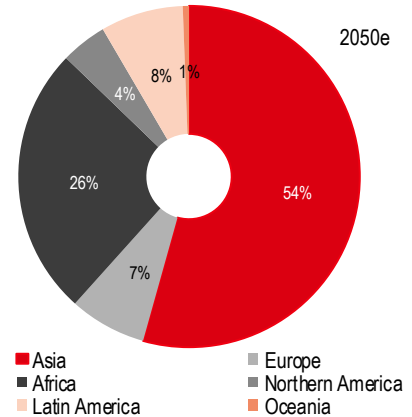
**Chart 1. Growing trend of global population growth**


Source: UN Population Prospects 2019, HSBC. Note: This is based on the UN's median estimate – there is great uncertainty about these projections further out depending on what assumptions are used for fertility rates.

Still, the basic tenets of the “Malthusian trap argument” is often dressed up in a new jacket and revisited in public debates. By the 1970s, the looming increase in population in the developing world was a matter of serious concern. “The limits to growth” from the Club of Rome in 1972 painted a grim picture of the human population outstripping the planet’s capacity to feed and provide energy for its billions of inhabitants in the not-too-distant future.

**Chart 2. 59% of the world population currently lives in Asia, but...**


Source: UN Population Prospects 2019, HSBC

**Chart 3. ...that is expected to shift with 26% of people in Africa by 2050**


Source: UN Population Prospects 2019, HSBC

**Technology is key to  
avoiding the apocalypse...**

For the moment, we are not on the cusp of a fall into the depths of a Malthusian abyss; the world produces more than enough food to satisfy the nutritional needs of everyone on the planet. In fact, as Table 2 shows, the current production of grains, oils and sugar is enough to feed a human population of close to over 10 billion, based on the UN benchmark of 2,100 calories per person per day. And that was in 2017. By now this will have risen by a few percentage points.

A lot of this food goes to waste so recycling food waste – or even getting data on it – should become a major industry.



**Table 2. There is enough food to feed the world**

Food Category	Production (bn tonnes)	Supply (bn kg)	Calories per tonne (mn per tonne)	Calories produced (quadrillions)	Ability to feed (billions of people)
Wheat, rice, cereals	3.01	1297	7.5	9.7	4.6
Raw Sugar	0.18	145	9.8	1.4	0.7
Nuts, seeds and oils	1.21	147	17.6	2.6	1.2
Meat, fish, eggs	0.47	420	6.0	2.5	1.2
Vegetables, fruits	1.94	1600	0.9	1.5	0.7
Milk	0.82	648	1.6	1.0	0.5
Other	3.69	1018	2.7	2.7	1.3
				21	10.2

Note: Production and calorie data based on the FAO; FAOSTAT. All data for 2017. Ability to feed people is based on the assumption of 2100 calories/day, a UN benchmark. The food categories are aggregates based on FAOSTAT data. A quadrillion is 10<sup>15</sup>.

Source: FAO, HSBC

## It's not just tech but demographic shifts too

### ...but demographic shifts too

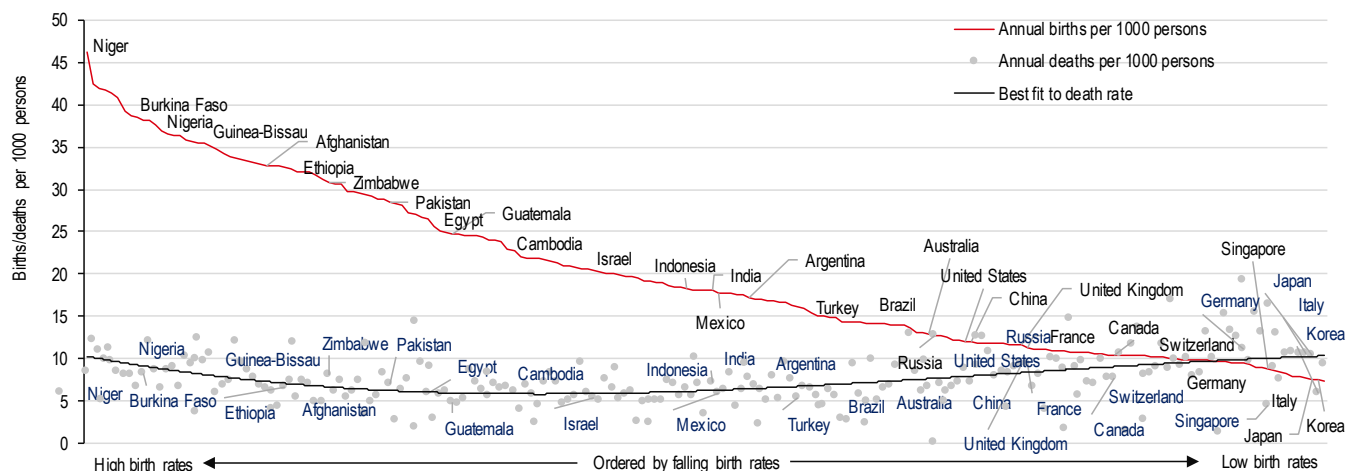
But the Malthusian trap is broken not just by steam engines and all sorts of other technologies that raised food production but changes in demographics also played a role. This is through the complex interplay between prosperity and fertility because, as it turns out, as countries got richer, women have fewer babies. Prosperity and birth rates go hand in hand.

Large parts of the world still go through this demographic shift and in general, it goes something like this:

- ◆ Growing prosperity delivers improved nutrition and health care, allowing people to live longer. As expectations of longer life take hold, and especially as infant mortality declines, fertility rates drop and the average family size falls. However, because reductions in the death rate precede reductions in the birth rate, the population increases in the meantime. It takes a generation or two before fertility and mortality rates stabilise and the population levels off.

Different parts of the world are now moving through this very demographic shift as Chart 4 illustrates. In large parts of Africa, death rates are falling but the birth rates remain very high. Populations will grow. Examples are Nigeria, Ethiopia, Pakistan and Egypt. In countries such as Indonesia, India, Mexico and Brazil, this is also the case, but birth rates are lower and falling and population growth will slow. In Japan, Korea, Italy and Germany, birth rates are below the death rates, and their populations will shrink.

**Chart 4. The demographic shift: birth and death rates in order of descending birth**



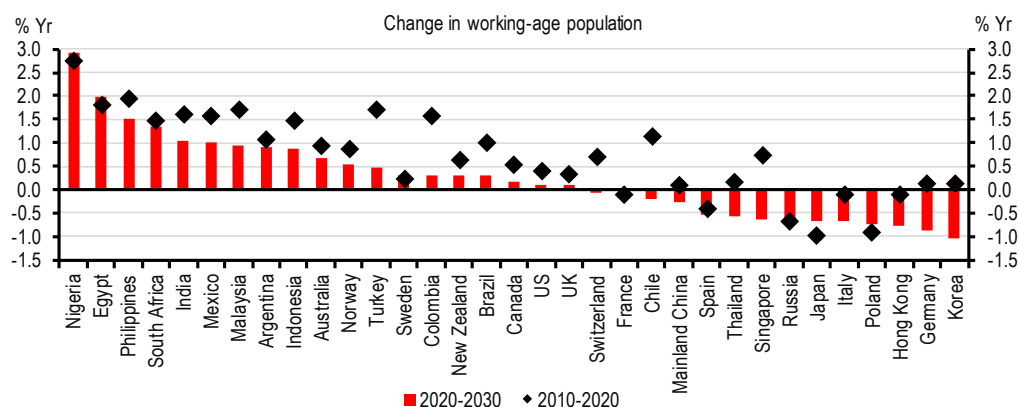
Source: UN Population Division World Population Prospects 2019, HSBC

## A few tectonic shifts

Over the longer-term, demographics projections carry a degree of uncertainty, due to the assumptions that need to be made around fertility, death and migration rates, that all can have a substantial impact on the expected population size and shape in any given part of the world.

And that means both rapid change over the next decade and a wide range of demographic issues across the world. Chart 5 shows the breadth of demographic outcomes over the next decade – Korea's working-age population is expected to shrink by 1% per year while the Philippines' will grow by 1.5%. However, in all cases aside from Japan and Poland, the growth rate will be slower than in the previous decade – clearly meaning a slower potential growth rate.

**Chart 5. The world's demographic outlook varies greatly across the world**

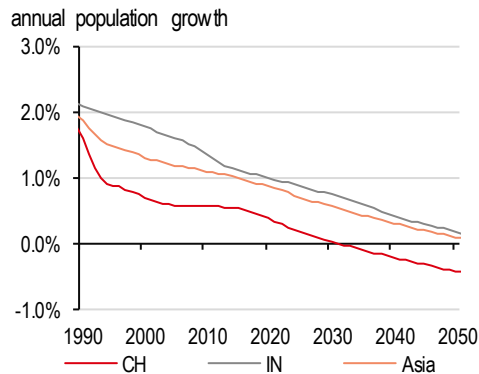


Source: UN population division. Note: Working-age defined as 16-64 but as we discuss later, this is not as clear a line as in the past as more over-65s are working.

This will have some major consequences for where most people live on the planet. Before the end of this decade, India will grow bigger in population than China. Indeed, China's population should start to decline by the end of this decade and markets will need to start to consider the implications of this well before that.

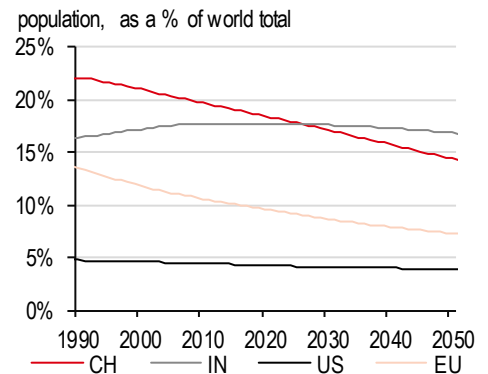
### India will overtake China as the most populous nation

**Chart 6. China's population will begin to decline by the next decade...**



Source: UN World Population Prospects, HSBC

**Chart 7. ...and India's population will become the largest**



Source: UN World Population Prospects, HSBC

But this comes with challenges. As China's population slows by the end of this decade, it might mean a shift in the nature of demand – lower volume growth, for example. Companies will need to prepare to grow sales through better pricing, for example by building brands or focusing on design.

But the issues in India will be very different. There, 100 million more people will enter the working age group by 2030 in India, the nation that already boasts the world largest youth population. This translates into 840,000 people every month for the next ten years. That is the number of jobs that need to be created in Indian in order for it to maintain its current employment rate. The equivalent in Nigeria is 307,000 jobs, and for Pakistan it is about the same. The question is what policies can governments employ to ensure these people all get a job.

**Chart 8. 840,000 Indians need a job every month until 2030 just to keep the current employment level steady**



Source: UN World Population Prospects, HSBC

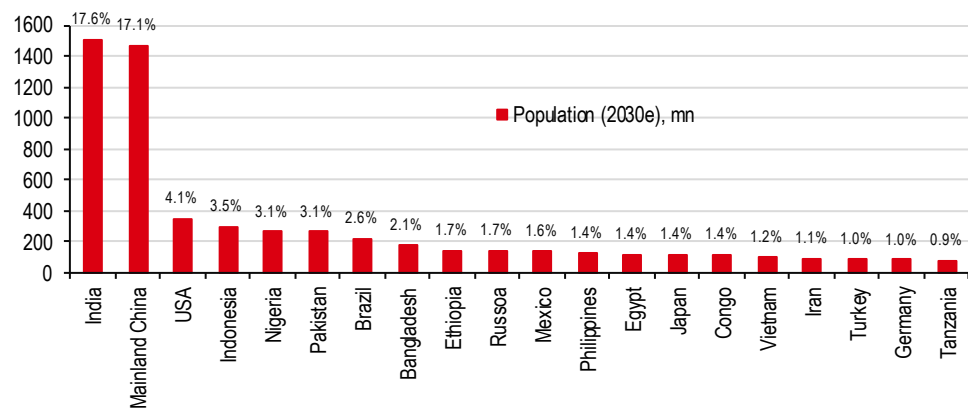
Indonesia is now the fourth-most populous nation on the planet but as population growth slows, the number of Indonesians will plateau and the country will eventually, in terms of the number of people, be overtaken by Nigeria which should become the third-most populous nation on the planet by the end of this century. Ethiopia and Egypt should be number eight and ten on this top ten list, respectively, with the consequence that, by the end of this century, most people on the planet will either live in Africa or Asia.

And while Asia is ageing, Africa will be chock-full with young people, mostly living in urban centres such as Johannesburg in South Africa, Lagos in Nigeria and Cairo in Egypt. It's something we will return to in later chapters on urbanisation.

These demographic shifts should bring plenty of challenges too. For example, population growth will most likely occur in countries least able to cope with it. In 2017, food supply was able to sustain a planet with over 10bn people, a number that undoubtedly has risen higher by 2021, but the real challenge is the proper distribution of it across the planet. And inequality in income and population suggests that migration should remain a major force, with all sorts of humanitarian and social implications.

## The world in 2030

**Chart 9. Top 20 most populous countries by 2030**



Source: UN World Population Prospects, HSBC

Note: Numbers above columns show the proportion of World population formed by each country

## Dilemmas and policy issues

In each of the chapters below we raise dilemmas, policy issues and challenges that countries and governments need to address to adjust to these unfolding changes in demographics. They are all summarised in the first summary chapter.

But for this chapter, the dilemma is how to square the very different demographic challenges across the world. Some parts of the world may struggle with shrinking populations, but what about those nations such as India and Nigeria who will need to put policies in place to ensure that the large numbers of young people coming from schools will be able to find a job.

## The next chapter

This demographic shift also has all sorts of consequences for businesses and financial markets – from changes in consumption and saving trends to wealth accumulation and its impact on stock and bond markets. In the chapters that follow, we hash out these implications in more detail.

# Urbanisation

- ◆ Much of the global population lives in cities with this share growing...
- ◆ ...yet most urbanisation happens in mid-tier cities, not mega cities
- ◆ Urbanisation helps to spur growth, but can be a result of growth too

## Misunderstood, but key to the story

Urbanisation is a complex process and often misunderstood. It happens as economies get richer, but can equally help spur higher growth rates. People living in cities have greater access to basic necessities such as education, health care and utilities as well as many more job opportunities – all of which can help to lift potential growth rates.

Equally, some facts about urbanisation are surprising. Latin America is the most urbanised continent (largely due to its geography) while Asia has the fastest growing cities (as a proportion of population) with second-tier cities growing the quickest, rather than megacities<sup>6</sup>.

In Europe and the United States, which experienced the move to cities in the 18th and 19th centuries, 80-85% of the population now reside there. China's population, by contrast, is more than halfway through the shift, with city dwellers constituting roughly 60% of the overall population. In India, which is currently in an even earlier stage of the shift, only about 35% of the population lives in cities.

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India has urbanised much slower than elsewhere

India's urbanisation has been particularly slow. It is expected to move to just 40% in 2030e, according to UN's projections (source: UN World Urbanization Prospects 2018), which is much less than Asia's expected average of 57%. A similarly muted trend is seen in the Philippines. As a result, India's consumer market remains largely rural and companies need to decide if it's worth their expense to penetrate these smaller villages and townships that are dotted across the country or to stay in the cities where the purchasing power is higher.

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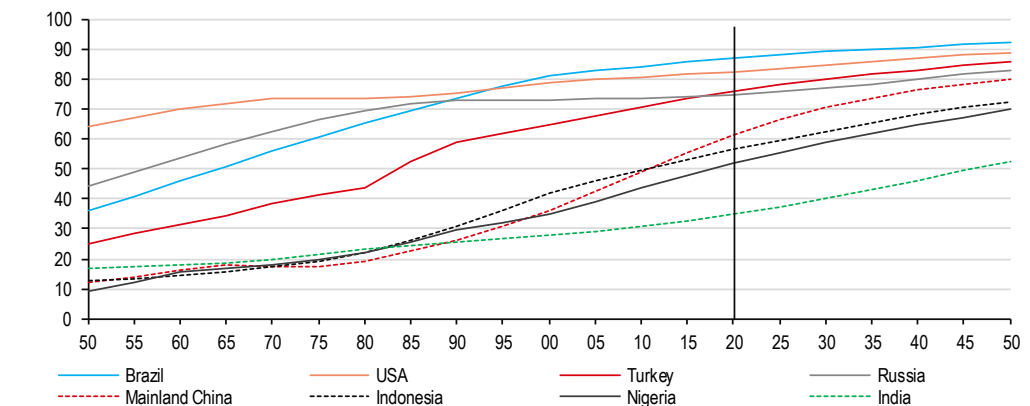
Urbanisation in Africa is speeding up

Africa's urban population has also been growing quickly (the share of the population in urban areas has risen from about 27% in 1950 to 40% in 2015 and is projected to reach 60% by 2050). Nigeria is about ten years behind China in its move to urban areas. In the next 30 years, a staggering nearly 1 billion Africans will move to the cities<sup>7</sup>.

<sup>6</sup> Indeed, megacities, with populations over 10 million only account for 10 per cent of urban population and most are not growing particularly fast.

<sup>7</sup> "Africa's Urbanisation Dynamics 2020; Africapolis, Mapping a New Urban Geography" OECD, 2020. They estimate there will be 950m additional city dwellers in Africa by 2030 compared to 2020.

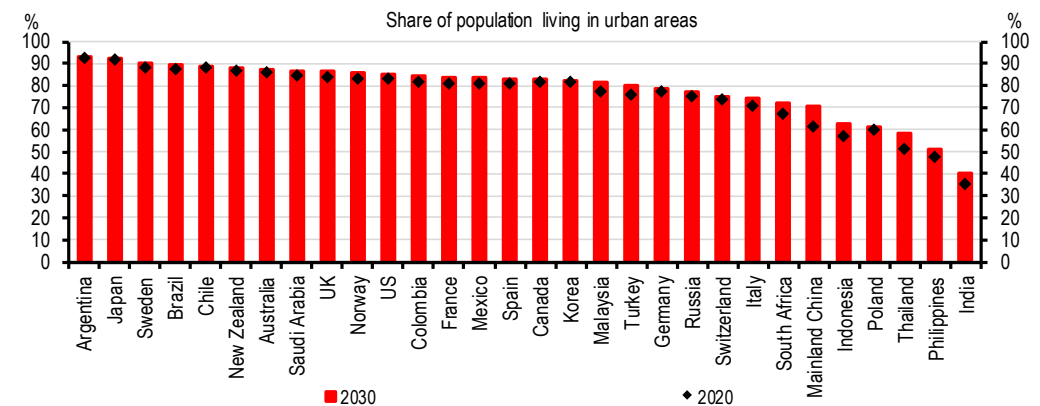
**Chart 10. India is expected to be 40% urbanised by 2030e, Nigeria 60%**



Source: World Urbanization Prospects 2018, UN estimates, HSBC

In terms of momentum, the world's urban population is rising by roughly 80m per year. While this may be the peak in terms of the change in the absolute number of people, by 2030, this number may still be as high as 78m, based on the UN's projections. And because of the low starting point for many emerging markets in terms of the share of the population that lives in urban areas, urbanisation should continue to be a dominant theme, even if many developed markets are already approaching peak urbanisation levels. As a result of better internet connectivity, more remote working and population dynamics meaning that fewer people move to cities, the outlook for continued urbanisation varies greatly between developed and emerging markets.

**Chart 11. Many emerging markets have a long way to go in terms of urbanisation**



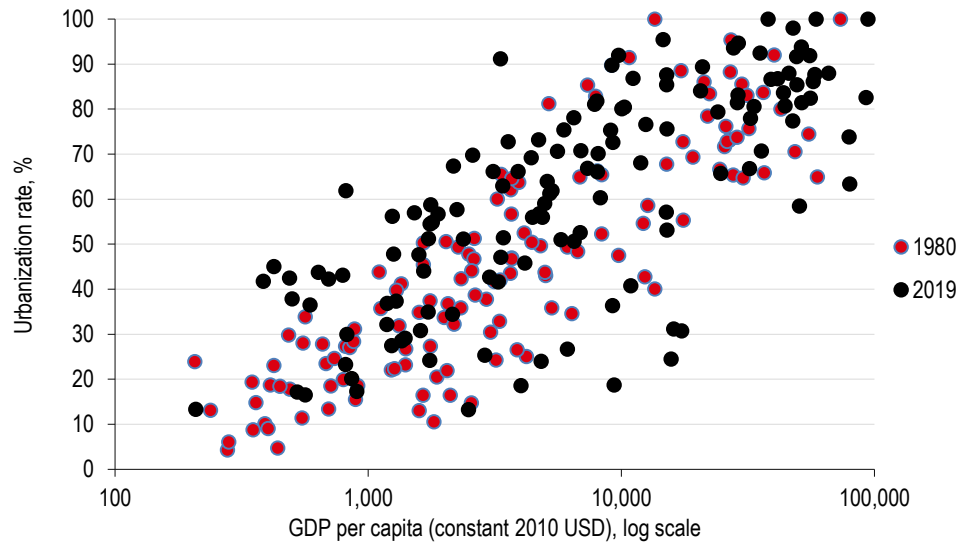
Source: World Urbanization Prospects 2018, UN estimates

This continued urbanisation has all kinds of accompanying benefits: access to healthcare and education is better, and the probability of getting a job is much higher. For many, having greater access to electricity, Internet and running water can transform lives. And this feeds back too – better access to resources in cities and urban centres supports growth. Urbanisation and growth appear to feed on each other.

Just like education, urbanisation accelerates the demographic shift towards lower birth rates. In Ghana, for instance, the fertility rate has declined faster in urban areas than in rural areas. The total fertility rate in urban Nigeria is 3.6 while in rural Nigeria it is 4.5<sup>8</sup>. Similar differences can be found in Asia.

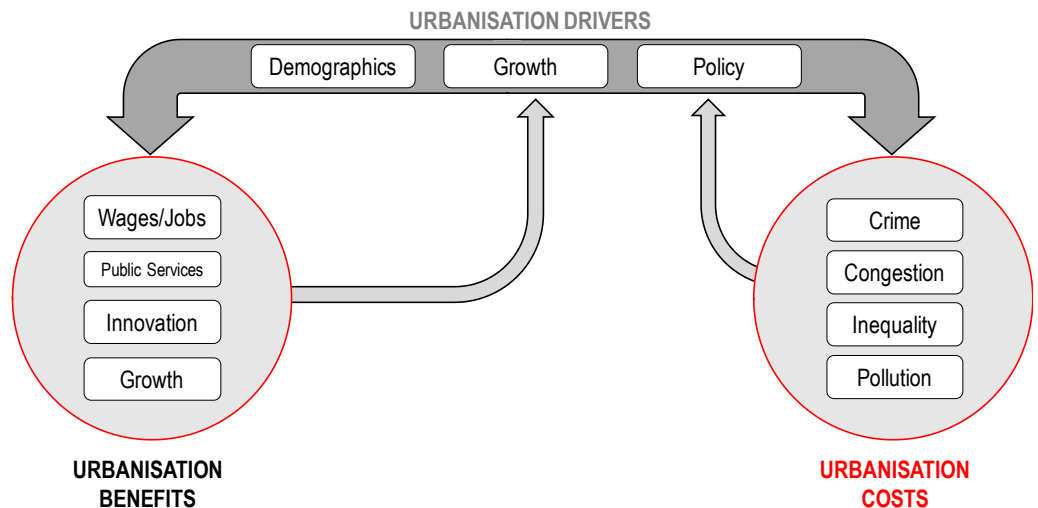
<sup>8</sup> Thus, 4.5% of 45 births per 1000 population

**Chart 12. Urbanisation is integral to economic progress**



And when it comes to living standards, this is illustrated in the accompanying Chart 12; a higher rate of urbanisation is accompanied by higher GDP per capita. Whilst some of this is correlation, it also the power of agglomeration economies – that cities can help to match people with better jobs, can fuel the creation of ideas, and provide access to crucial public services which can help to generate additional improvements in standards of living and output.

**Chart 13. Urbanisation can lift growth and vice versa**



## But growth is in mid-tier cities, not mega cities

**Most urbanisation is happening in mid-tier cities and not mega cities**

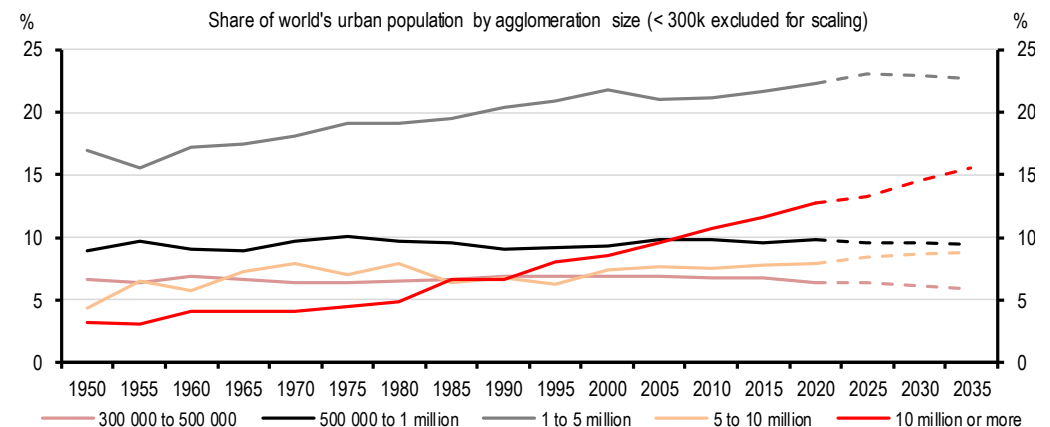
One commonly held view is that urbanisation is dominated by growth of mega cities such as Tokyo, Delhi, Shanghai, Lagos, Mumbai, Cairo, Bangkok, Manila, and Jakarta. Whilst these cities continue to grow in absolute terms, the fastest growth rates are in slightly smaller cities.



But most of the world's urban population (80%) lives in settlements with fewer than 10 million inhabitants. In Asia in 2020, 15% of the urban population lived in mega cities, while 38% lived in small cities with a population below 300,000 and 22% in mid-tier cities with a population between 1m and 5m. This compares to 1990 when 8% of the urban population lived in mega cities, 49% in small cities, and 18% in mid-tier cities. Clearly, mega cities have played a key role in Asia's rapid urbanisation.

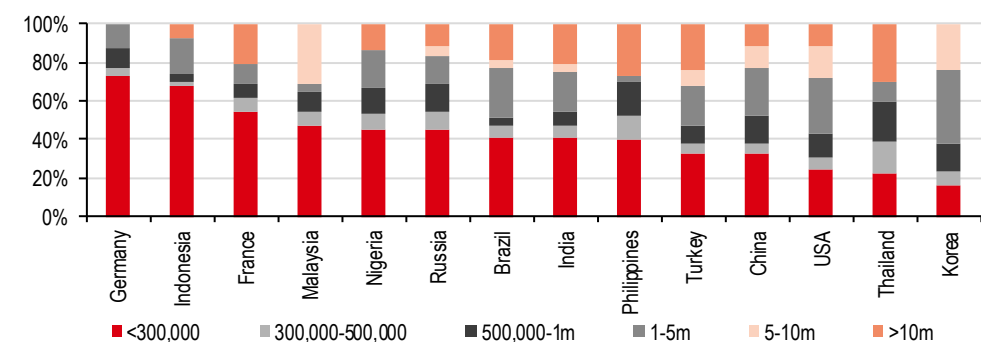
But, with more than 1.2 billion people joining the world's urban population by 2035e, where will the fastest growth be? It's worth noting, that while the UN assumes that more of the world's population will live in megacities by 2035 (Chart 14), there are many risks to this view – firstly that the COVID-19 pandemic has dramatically changed the attractiveness of mega cities given the spread of disease and the closure of many activities, and secondly that some of the longer-term issues around megacities will be considered much more by individuals – such as the cost of living, crime, congestion and pollution.

**Chart 14. Megacities may make up more of the world's population, but there are risks there**



So while megacities may get the attention, they are not where a bulk of urban inhabitants live, and they aren't where the fastest pace of growth may be in the coming years. As Chart 15 shows, the bulk of populations in the world's major economies don't live in mega cities today.

**Chart 15. Split of urban population in 2020**



And when we look at the cities with the fastest growth rates by country, this becomes clear: most of them are small or mid-tier ones. Out of 30 countries in our analysis, only one is a mega city and only eight are national capitals. In 12 countries, the fastest growing cities are in the mid-tier category with a population between one and five million. Quite often, they are near mega cities. In India, it's a small city in the vicinity of tech hub Bengaluru; in the Philippines, it's a smaller city Imus – just south of Manila. In South Africa, it is Rustenburg, just north of Johannesburg and in Argentina, it is Posadas, on the border with Paraguay. These are the cities where we could see the fastest population growth in the coming years.

**Table 3. Fastest growing cities in various countries in the next 10 years**

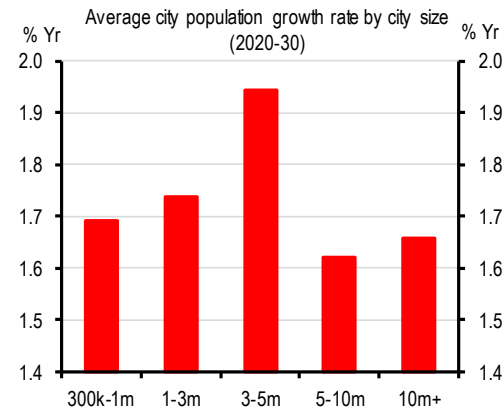
Country	Fastest growing city	Is it the national capital?	Urban category	Population (000s) in 2020	Population (000s) in 2030	Growth (CAGR)	Country	Fastest growing city	Is it the national capital?	Urban category	Population (000s) in 2020	Population (000s) in 2030	Growth (CAGR)
Argentina	Posadas		Small city	389	442	1.3%	Malaysia	Kuala Lumpur	Yes	Large city	7,997	9,805	2.1%
Armenia	Yerevan		Mid-tier city	1,086	1,114	0.3%	Mexico	La Laguna		Mid-tier city	1,615	2,013	2.2%
Azerbaijan	Sumqayıt		Small city	354	403	1.3%	Nigeria	Gwagwalada		Small city	410	697	5.5%
Bangladesh	Rupganj		Small city	482	775	4.9%	Norway	Oslo	Yes	Mid-tier city	1,041	1,187	1.3%
Belgium	Brussel	Yes	Mid-tier city	2,081	2,182	0.5%	Pakistan	Lahore		Mega city	12,642	16,883	2.9%
Brazil	Goiânia		Mid-tier city	2,690	3,056	1.3%	Philippines	Imus		Small mid-tier city	528	722	3.2%
Cambodia	Phnom Penh	Yes	Mid-tier city	2,078	2,805	3.0%	Korea	Yongin		Mid-tier city	1,083	1,186	0.9%
Mainland China	Xiongan		Small mid-tier city	970	1,430	4.0%	Russia	Balashikha		Small mid-tier city	515	580	1.2%
Denmark	Copenhagen	Yes	Mid-tier city	1,346	1,442	0.7%	South Africa	Rustenburg		Small mid-tier city	509	666	2.7%
Finland	Helsinki	Yes	Mid-tier city	1,305	1,386	0.6%	Sri Lanka	Colombo	Yes	Small mid-tier city	613	695	1.3%
Ghana	Sekondi		Small mid-tier city	946	1,349	3.6%	Sweden	Stockholm	Yes	Mid-tier city	1,633	1,814	1.1%
	Takoradi		Small mid-tier city										
India	Hosur		Small city	494	743	4.2%	Thailand	Lop Buri		Small city	437	567	2.6%
Indonesia	Tasikmalaya		Mid-tier city	1,056	1,447	3.2%	United Kingdom	Coventry-Bedworth		Small city	426	473	1.1%
Kazakhstan	Astana		Mid-tier city	1,166	1,456	2.2%	United States	The Woodlands		Small mid-tier city	570	782	3.2%
Kenya	Ruiru		Small city	389	593	4.3%	Vietnam	Thu Dau Mot		Small city	413	597	3.7%

Source: World Urbanization Prospects 2018, United Nations, HSBC

Note - Mega city currently have population of 10 million or more, Large city: 5 to 10 million, Mid-tier cities: 1 to 5 million, Small mid-tier city: 500 000 to 1 million and Small city: 300 000 to 500 000. City names are as provided for urban areas by the UN.

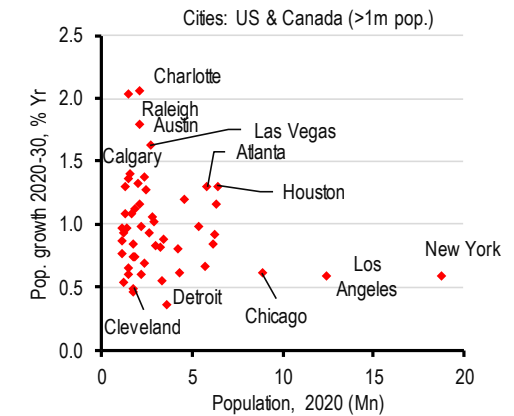
This is important, as this is also where consumer markets will develop fastest. In Indonesia, for example, some relatively smaller cities are becoming retail growth hot spots. Gresik in East Java is a case in point: the city has only about 1.2m inhabitants but nearly 60% of them are in the 'consuming class' – a cohort where discretionary spending is 12% higher than the Indonesian urban average.

Across the world, it is these medium-size cities that are likely to grow more quickly as they benefit from the benefits that urbanisation brings. UN city-by-city projections show that the fastest growth rate is likely to be in cities with 3-5m people. This trend may be more evident in the developed world, where the focus on quality of life means that the high cost of living in the likes of New York, London and Paris, coupled with the boom in home-working, means that medium-sized cities should be the relative winners in the coming years.

**Chart 16. Medium-sized cities are likely to grow more quickly...**


Note: Size bracket based on current population size. Growth numbers adjusted when city jumps from one bracket to other.

Source: HSBC estimates, World Urbanization Prospects 2018, United Nations

**Chart 17. ...and even more clearly in the developed world**


Source: HSBC, World Urbanization Prospects 2018, United Nations

## The flip side of urbanisation

### The challenges

There's a flip side to all this too. Urbanisation comes with significant risks for cities across the planet.

- ◆ First of all, there is considerable and persistent stress on water, energy, and food supplies. Jakarta, for example, has serious issues with land subsidence. And by 2030, the demand for water is forecast to drastically outstrip supply in several cities in India, China, Africa, and the Americas. Some cities are also likely to suffer from insufficient energy supply.
- ◆ A second set of risk factors is from exposure to weather-related events, such as coastal China's risk of floods and hurricanes while northern India is vulnerable to floods and droughts. The Pacific coast of Latin America is exposed to floods, and the coastal US must contend with both hurricanes and floods. Jakarta needs to deal with the fact that parts of the city its slowly sinking.
- ◆ In addition, urban populations have greater exposure to some climate-exacerbated health risks – think of heat stress, water-borne pathogens associated with higher urban temperatures as well as all sorts of other diseases. Air pollution, causally linked to and increased by global warming, is a major killer in cities already. In developing nations, these issues are probably even more urgent than elsewhere.
- ◆ A third risk relates to social stress resulting from poor governance, excessively rapid urbanisation, unequal wealth distribution, and youth unemployment.

## Dilemmas and policy challenges

Growth and urbanisation feed off each other – growth pushes urbanisation but a more urban economy means better access to resources that in turn, supports growth. But growth is shifting from mega cities to smaller and medium-sized cities. And urbanisation isn't a free lunch either – cities are congested and need significant investment in infrastructure, ranging from crime prevention to adequate housing. This puts stress on budgets.

## The next chapter...

... looks at one of the biggest social transformations this century will see – ageing around the globe.

# Ageing

- ◆ Aside from Japan, we see Hong Kong, Taiwan, and Korea over the next decade as becoming “super-aged” societies...
- ◆ ...while the expected retirement length becomes longer
- ◆ This has implications for consumption and savings patterns

## One of the biggest transformations of the 21st century

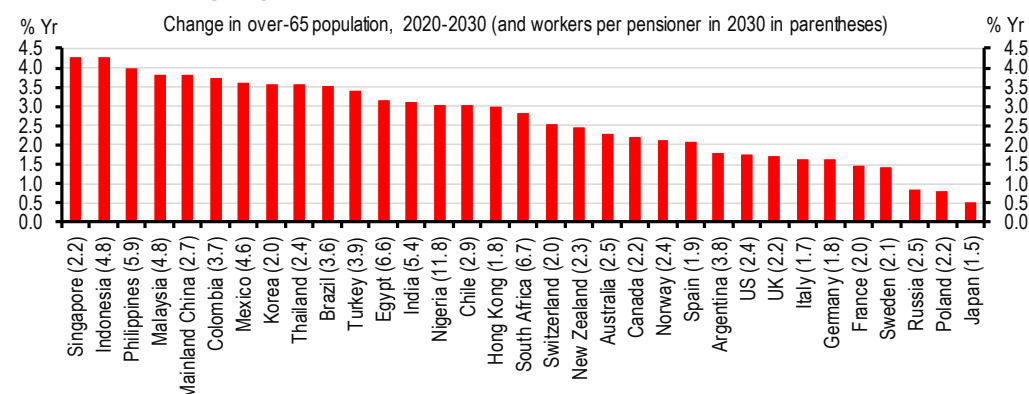
In Japan, there is a special word for it – “*jinsi hyakunen*” (人生百年) – the 100-year life. And it is a topic now regularly referred to in Japan by journalists, demographers and business leaders. Japan is the trail blazer when it comes to building an aged society and the rest of the world will have to take notice.

As a consequence of a falling fertility rate and increased life expectancy at birth, by 2050 – for the first time in history – there will be more people over the age of 65 than under the age of 15. The number of persons aged over 80 is projected to triple, from 143m in 2019 to 426m in 2050<sup>9</sup>. Ageing is poised to become one of the most significant social transformations in the 21st century.

The increase in the proportion of older persons (aged 65+) is likely to be fastest in Asia, with South Korea, Singapore, mainland China and Taiwan seeing the highest rise between now and 2050.

And even in the near term, the numbers are staggering. As we discuss more on page 12, the ageing of the world creates both challenges and opportunities. But the scale of this is worth noting across the world – Singapore’s population of over-65s is set to grow by more than 4% per year over the next decade, meaning that by 2030, the economy should have just 2.2 workers for every pensioner. The same issue may befall many other Asian economies, but many such as the Philippines will still have many more workers than retirees. Note that there is a particular gender bias in ageing; women live longer than men and this longevity advantage persists at older ages. This results in a predominantly female older population.

**Chart 18. Rapid ageing is the case in most of the world**



Source: UN Population Division. Note: Workers per pensioner defined as population 16-64 per population 65+.

<sup>9</sup> All data from the United Nation's "World Population Prospects: the 2019 Revision"

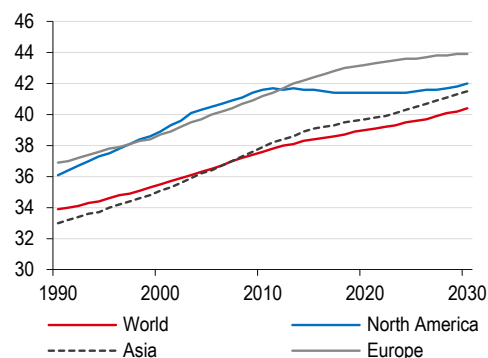
## A success story or the apocalypse?

Population ageing is, at its core, a human success story, reflecting advancements in medicine and social progress. But instead of getting cheers all around, ageing has given rise to the view that it will have grave social and economic consequences as governments struggle with rapidly rising costs for healthcare and large pension liabilities. Newspaper commentary on ageing is accompanied by apocalyptic views of the future – villages that are de-populating, older people living solitary lives and economies crumbling under the heavy burdens of taking care of all these elderly.

Part of the problem is that quite often we approach the process of ageing in simple terms that frame the whole issue in the wrong way. One of the most commonly used indicators to show ageing is the old-age dependency ratio (OADR), defined as the number of persons aged 65 years or over per 100 persons of working age (20 to 64 years).

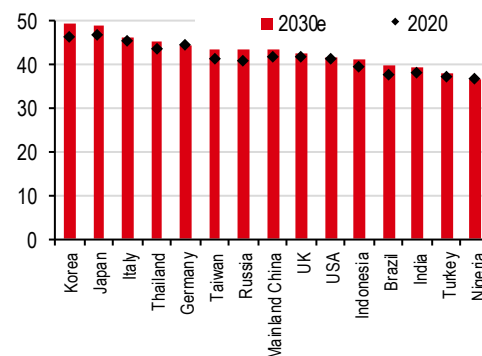
The underlying assumption is that people stop working at the age of 65, which is an increasingly questionable assumption to make<sup>10</sup>, particularly in economies where many more jobs are service-based and much easier to do at an older age. At least in parts of the planet, as people live longer, they work longer and this translates into the average worker getting older. This is particularly the case in Asia.

**Chart 19. Pace of increase in the median age of the labour force is fastest in Asia**



Source: ILOSTAT, HSBC

**Chart 20. Korea, Japan and Italy have the highest median age for the labour force**



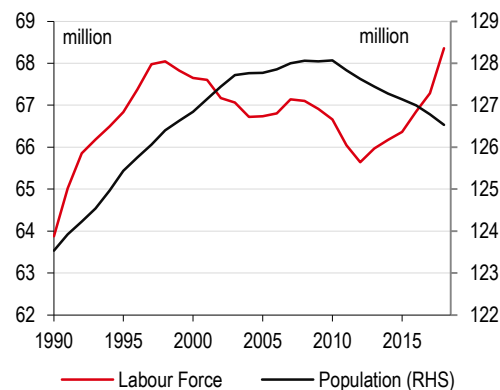
Source: ILOSTAT, HSBC

According to the International Labour Organization (ILO), the median age of the labour force is projected to increase globally, but the pace is expected to be fastest in Asia. Korea and Japan have the highest median age in the world and this is because of a high proportion of workers aged 65-plus in the workforce. In Japan and Korea, people aged 65-plus form 13% and 10% of the total labour force, respectively, while in economies like India, Hong Kong, and mainland China, it is less than 5%. In Europe, the participation rate of over-65s has been rising in recent years – and is roughly 8% in Germany and 10% in the UK, up from 4% and 7%, respectively, a decade ago.

As people work longer, the labour force is rising faster than the population itself. This is already the case in Japan and Korea, and in due course this may also happen elsewhere – meaning that population ageing may not have the same impact on labour supply as we may have seen otherwise.

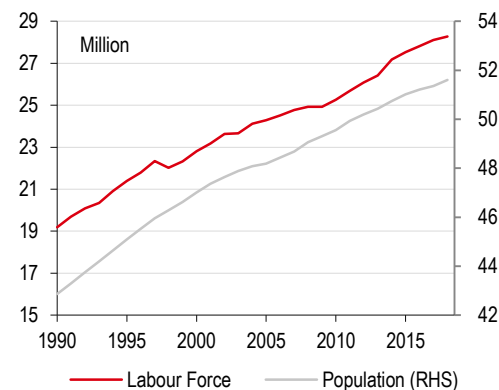
<sup>10</sup> What is 'old' varies from country to country. In Indonesia, retirement age for public servants is set at 55 years. In Brazil, old age is considered to start at 60 (based on the definition used by the Brazilian National Policy for the Elderly). This is why demographers also use other measures too, such as ageing based on remaining life expectancy. It better captures increases in life expectancy in a population over time.

**Chart 21. Total population in Japan is falling, while the labour force has increased since 2013**



Source: World Bank, HSBC

**Chart 22. In Korea, the labour force is increasing slightly faster than population**



Source: World Bank, HSBC

It is therefore better to look at what is called the economic old-age dependency ratio (EOADR) which links consumption and labour income across all ages. Using this proxy, it is expected that population ageing will result in a global increase from 20 effective older consumers (ages 65+) per 100 effective workers (of all ages) in 2019, to 33 per 100 in 2050. That is still a big increase, though, which may weigh on economic activity.

This matters for the economy – if people work for longer, the world's workforce may not shrink as much as we might typically expect. This could put downward pressure on wages, particularly in an era of greater automation. On top of the structurally lower growth rates that demographic change may usher in, this could help to anchor global interest rates at lower levels in the coming years.

**More workers limit upside pressure on wages**

But it also changes demand – a shift towards healthcare, for example, a topic which we will touch on in a later chapter. But the important thing is how people prepare for retirement.

## Retirement funding, pensions and silver dollars

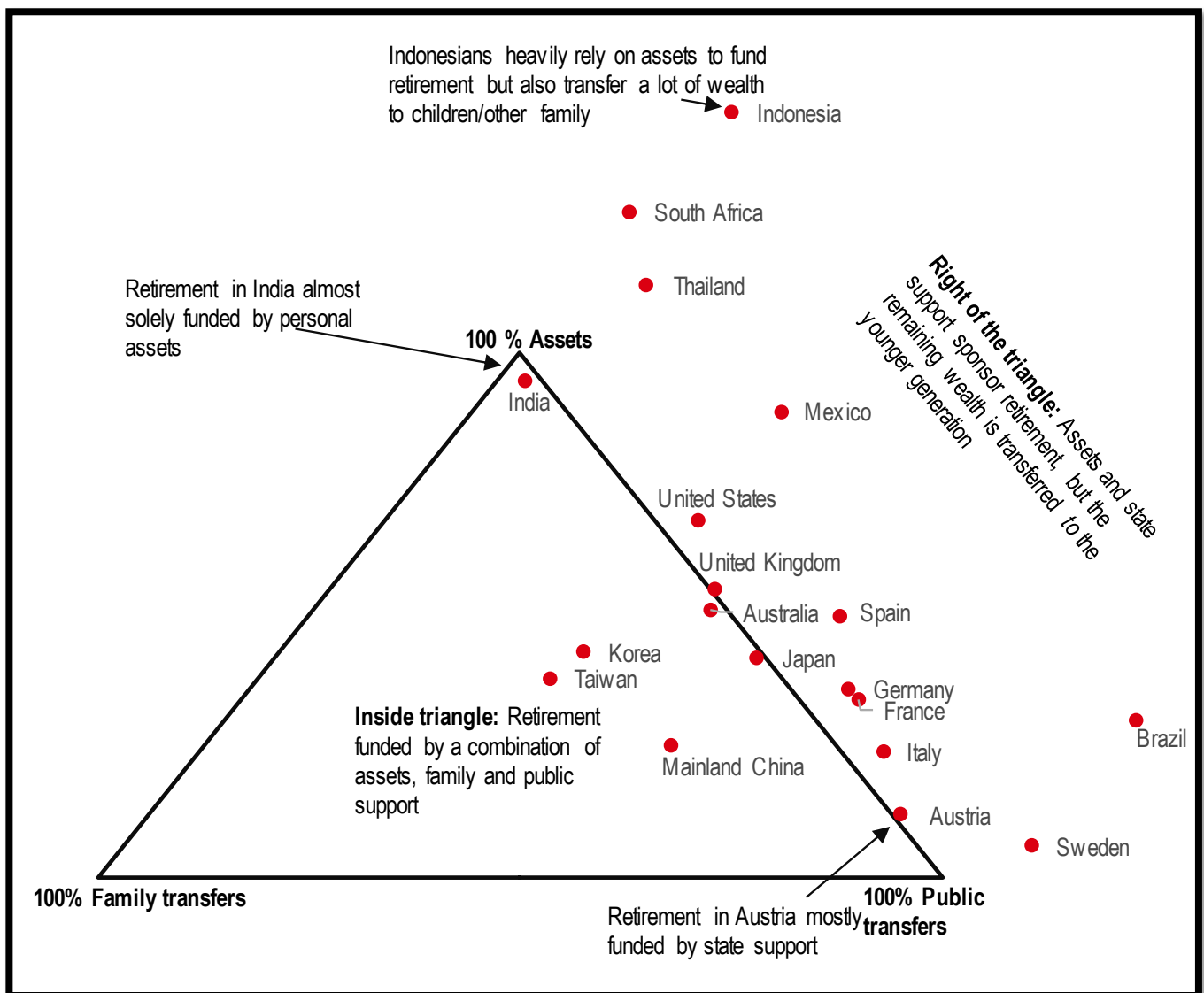
To get through an extended life in retirement, people need money. Broadly speaking there are three ways to fund retirement – selling assets, public transfers such as state pensions and private transfers (family or friends passing money over).

- ◆ Public transfers are payments from government from tax revenues, most often public pensions. This is most prominent in Europe. Sweden, for example, is where public transfers are dominant; adults between ages 30 and 60 pay very high public taxes in return for generous public benefits at older ages.
- ◆ Private transfers are typically payments made within families. In some economies, children finance the retirement of their older parents as in Korea, Taiwan and mainland China. In other markets, the elderly support their children and grandchildren. This is the situation in countries such as Indonesia, Mexico and Sweden.
- ◆ Asset-based solutions are a third option. This involves income from assets such as private pension funds or personal savings acquired during the working years. This is an option in the absence of public pensions. This phenomenon is dominant in Asia and South Africa. Taiwan, for example, relies heavily on this mechanism, giving rise to a large life insurance industry on the island.

Obviously, there are all sorts of blends of these three options in place. In some high-income countries, assets play an important role, while public transfers play a more modest role in funding consumption at older ages. Specifically, assets support about half of the consumption of older persons in Australia, Mexico, Spain, the UK and the US.

The triangle below is an easy way to understand how people around the world fund their lifestyle in retirement. This is how the chart works. As mentioned above, there are three ways to fund pensions – public pensions, building your own nest egg (“assets”) and transfers from others in the family – and which are the corners of the triangle. Thus, in India for example, people depend almost entirely on their own assets to fund retirement. As you move down the line to public transfers, people rely less on accumulated assets and more on public transfers. In Germany, France, Italy, Austria and Brazil, for example, public pensions are the largest sources of retirement funding, although people will have set aside some assets to provide for retirement.

**Chart 23. Sources of funding for retirement**



Source: National Transfer Accounts, HSBC



Countries and territories inside the triangle make use of all the three sources of funding. In Taiwan and Korea, for example, which are located almost in the middle of the triangle, support systems are divided relatively equally among the three sources of funding – assets, family and public pensions.

Those on a line of the triangle only make use of two sources of funding. This is the case in the UK, Australia and Japan where people rely exclusively on two sources of funding – pensions and their nest egg.

Those outside the triangle (and to the right) have negative transfers, i.e. they give more to other members of their families than they receive from them. For example, for most of Europe, Mexico, and the United States, people in retirement pass down their wealth to the younger generations. This is most acute in Brazil and Indonesia, where the former relies on state sponsorship and the latter on the build-up of their personal nest eggs.

## Europe pension stress

In the first chapter, we highlighted that the shift from high mortality and fertility to low levels is particularly visible in Europe and Japan. It will lead to significant increases in the old-age dependency ratio with possibly serious economic and social consequences as it causes a shift to an increasing number of retired people who will need to be supported by a reduced working-age population, namely a change from four to only two people working for every retiree.

How European countries deal with this depends on the architecture of their existing pension systems. The issue is that many nations with some sort of defined benefit scheme have only belatedly – if ever – changed into a pay-as-you-go system which is financed by payroll taxes. Instead, they established a flat-rate minimum benefit within their pension system which was only sufficient to cover the basic needs of retirees.

Thus it is not ageing alone that constitutes a problem, but the design of the support systems in place. Funding these systems is a problem and in many cases, this means that the design needs to change in the form of a later pension age, bigger contributions into the system or an overhaul towards defined contribution schemes. This is not the place to discuss this in detail but often, the biggest challenge in making such changes is changing the public perception of intergenerational justice, meaning who should pay for what.

**Pension stress is not just ageing, but also about what pension system is fair**



**...the biggest challenge in making such changes is changing the public perception of intergenerational justice**

## Wealth management is a growth industry

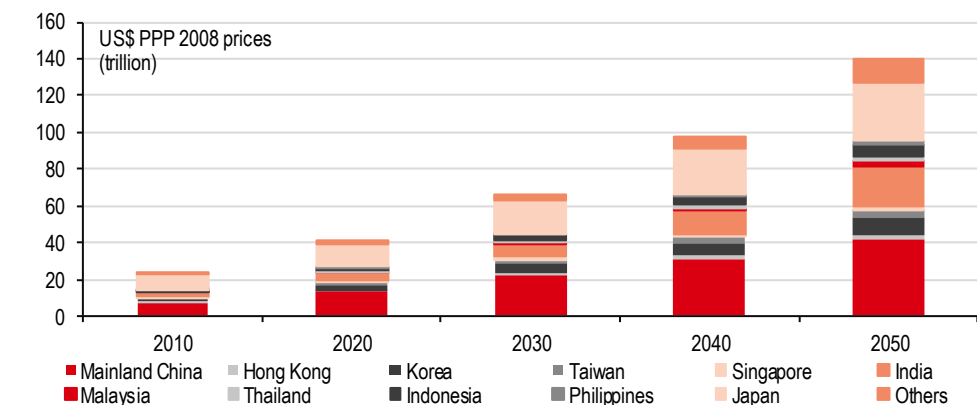
But whatever people do, they have to accumulate assets and this has benefits for economic growth, especially in Asia<sup>11,12</sup> as these funds can be recycled into productive assets.

With a few assumptions, it is possible to project for the next decades the amount of assets that Asia will have to accumulate – let's call it total pension assets – to get comfortable through life.

Looking at pension sizes across countries, in 2010 total pension assets for China and Japan were USD7trn and USD9trn, respectively. We expect these to grow by an average annual rate of 4.5% and 3.2%, respectively, by 2050e. Note that between 2020 and 2030e, approximately 40% of growth in Asian pension assets is expected to come from China alone.

As per our estimates, the total is set to grow from cUSD15trn in pension assets in 2010 to USD108trn by 2050e, with more than half coming from East Asian countries<sup>13</sup>. That is a compounded growth rate of 5% over a 40-year period. It appears that wealth management is a growth industry, especially in Asia.

**Chart 24. Total pension assets in Asian markets, 2010-2050**



Source: HSBC calculations (mimicking the approach set out by the ADB working paper: Population, Wealth, and Economic Growth in the Asia and Pacific Region by Andrew Mason, Sang-Hyop Lee)

## Asset accumulation and interest rates

An important lever is how this impacts  $r^*$  (r-star), the “natural” rate of interest. Demographic changes affect the natural rate of interest in various ways<sup>14</sup>, but on the asset ownership side of the equation, an increase in life expectancy lengthens individuals’ retirement periods, generating additional incentives to save rather than spend.

This effect could be even stronger if it is believed that public pension systems are insufficient to bear the cost generated by an ageing population. Higher savings at the expense of current consumption may put downward pressure on the natural rate of interest in many countries. In addition, older age groups are more likely to hold fixed income assets in their portfolio rather than growth-generating, higher-risk assets, such as equities – and so as more of the world's

<sup>11</sup> Population, Wealth, and Economic Growth in the Asia and Pacific Region - Andrew Mason and Sang-Hyop Lee

<sup>12</sup> “Support Ratios and Demographic Dividends: Estimates for the World”, Andrew Mason, Ronald Lee, Michael Abrigo and Sang-Hyop Lee, United Nations Population Division, Technical Paper No. 2017/1, 2017

<sup>13</sup> PPP in US dollars 2009 prices

<sup>14</sup> “Demographic Transition and Low U.S. Interest Rates”, Carlos Carvalho, Andrea Ferrero, and Fernanda Nechio, FRBSF Economic Letter 2017-27, Federal reserve bank of San Francisco, September 25, 2017.

population moves into these higher age brackets, we could see more demand for fixed income products, which could also exert downward pressure on interest rates.

**“ Higher savings at the expense of current consumption caused by an increase in life expectancy puts downward pressure on the natural rate of interest.**

### The next chapter

These vast demographic changes can bring their own challenges that governments need to address – think of the need to spend more on healthcare or invest in education. We look at these in detail in the next chapter.

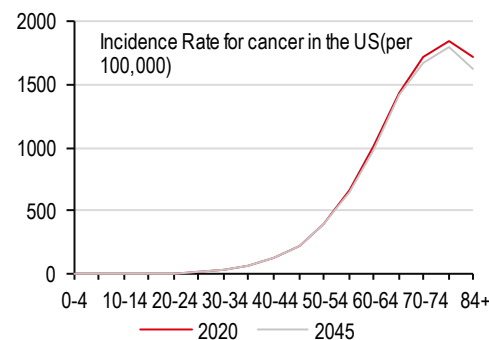
# Healthcare

- ◆ The incidence of health care issues like diseases and disabilities rises sharply after the age of 40
- ◆ Demand for healthcare should rise fastest not in aged societies but in younger nations where more people hit 40 over the next decades
- ◆ Fastest-growing demand for healthcare is expected in Nigeria, Egypt, ASEAN and India

## Healthcare starts at 40

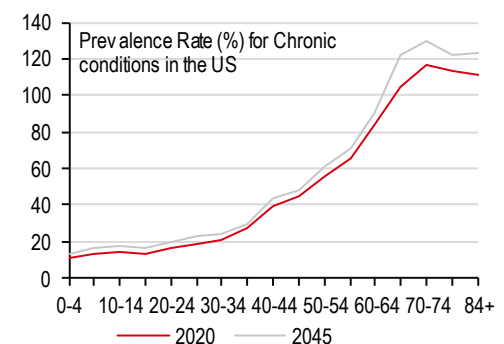
Once someone gets beyond their 40<sup>th</sup> birthday, the risks of disease clearly increases, as can be seen in Charts 25 and 26. This is illustrated in Chart 25 which uses US data to show that the probability of the incidence of cancer and all sorts of other diseases increases rapidly with age, particularly after 40<sup>15</sup>.

**Chart 25. Cancer incidence rate by age in the US**



Source: Global Demographics, HSBC

**Chart 26. Prevalence of chronic diseases increases with age**



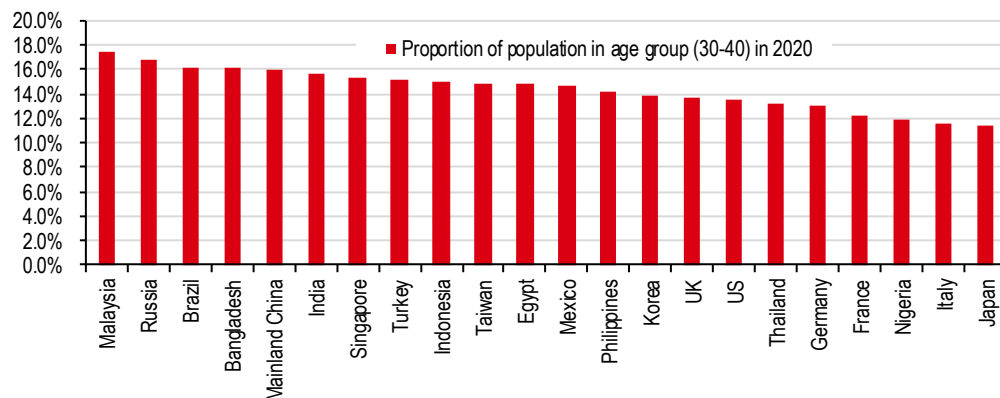
Source: Global Demographics, HSBC

Thus the demand for health care services is likely to increase significantly for nations where a large part of the population moves beyond the age of 40. To add some numbers to this, the population who are 40 years and older in Malaysia increased by a CAGR of 3% in the last decade, followed by an expected accelerated rise to 3.2% in the next decade. On the other hand, in France, after a growth rate of 0.9% in last decade, the population of this age group is expected to rise by a mere 0.7% in the decade to 2030 (source: Global Demographics).

Using these numbers, we project that in the next 25 years, the total cases of chronic diseases are likely to increase by 104% in Malaysia, but by just 23% in France.

<sup>15</sup> Because of different levels of awareness, food habits and lifestyle, incidence rates of these diseases vary considerably across nations. Only 14% of the population in Japan in age group 40-44 has one or more kinds of chronic diseases compared to 70% in the Philippines. There is also variation in the diseases themselves; chronic diseases tend to prevail more often than cancer at lower ages, but also rise rapidly after the 40 mark.

**Chart 27. More than 16% of population in ASEAN, Russia, Brazil, Bangladesh, China, India and Turkey will enter their 40s over the current decade**



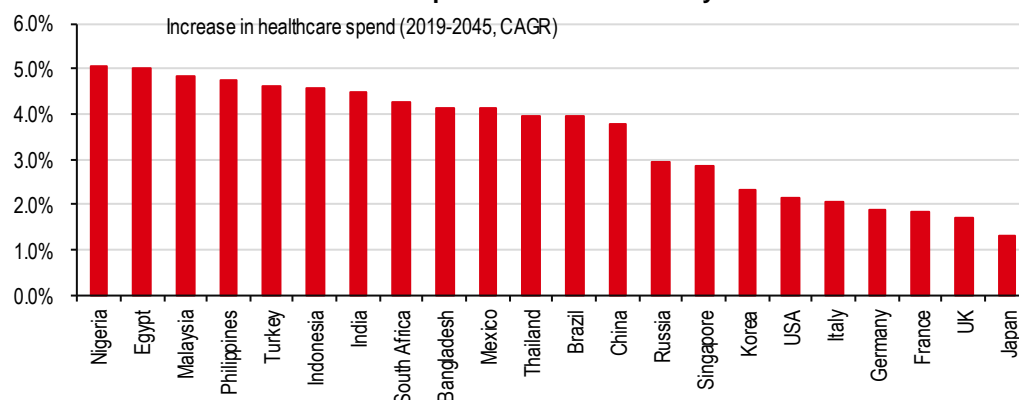
Source: UN World Population Prospects 2019, HSBC

A related issue is that healthcare issues that arise after the age of, say, 40 might be small, but need continued attention and carry a stream of spending over many years. The measure “years lived with a disability” is therefore high. With improving healthcare, the number of years that people live with a disability or disease has been rising. For the US, this has risen from 10.19 years in 1990 to 11.16 years now, a rise of 0.97 years. In Brazil, it rose by 1.12 years.

Knowing these numbers and the prevalence of diseases across age groups, we can estimate growth in health expenditure for various countries in the next decades. Note that this is examining healthcare from a purely demographic point of view – there are all sorts of other issues that impact healthcare costs in a country – the quality of healthcare, local regulations, the average days someone spends time in a hospital and so forth. But we put aside these for the moment. It also means that the results shown below should be seen as that – the increase in healthcare related to demographic shifts.

We look a quarter century into the future and estimate how health care costs will rise by 2045e. Countries such as Nigeria, Egypt, Malaysia, Philippines and Indonesia top the list.

**Chart 28. Total cost on healthcare is expected to increase mostly in non-affluent countries**



Note: Since the prevalence or incidence rate data for a few countries is not available, we have used proxy data for each of these countries. In the case of Mexico, we used Brazilian data as a proxy. For India, we used Indonesian data. For Bangladesh, we used Sri Lanka data, Kazakhstan data for Turkey and the average of India and Brazil for South Africa, Pakistan data for Nigeria and Egypt. These assumptions do not make significant changes in the pecking order of the projected increases in health care expenditure.

Source: Global Demographics, HSBC estimates

Ageing is naturally linked to rising health expenditures. But urbanisation is also important. As people move to cities, incomes rise and diets change. That raises not only the propensity to spend more on healthcare but the necessity to do so as people consume more processed food,

meat, sugar, dairy, and alcohol. This has also led to increasing obesity rates in Asia, with consequences of a rise in chronic diseases. A China-Cornell-Oxford Project found that chronic degenerative diseases (cancer, diabetes, cardiovascular) are more prevalent in urbanised centres. The study also finds that these chronic diseases are correlated with increased intakes of meat, dairy, and fat <sup>16</sup>.

## **Dilemmas and policy challenges**

Quite a few countries will need to spend more on healthcare. But what does that mean for spending on education or infrastructure? And what role can the private sector play in these public policies? These are political issues that governments need to decide on, as there will be far-reaching long-term consequences.

## **Next chapter**

So far, we have discussed many issues on a national level. But there are changes within families too that have an impact on population growth and how and where people live and shop. That is the topic of the next chapter.

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<sup>16</sup> The China-Cornell-Oxford Project: On Nutrition, environment and Health at Cornell University

# Education

- ◆ Education has all sorts of benefits – it accelerates the demographic transition towards lower birth rates and attracts investments
- ◆ But many countries still underspend on education; this is especially the case in Africa and ASEAN
- ◆ China and Brazil are transitioning into a select group that maintain or extend their lead in education

## Off to school

In most countries, basic education is nowadays perceived not only as a right, but also as a duty – governments are typically expected to ensure all children have access to it.

Education impacts all sorts of things, from birth rates to the ability to attract investment and generate growth. It appears that the key is not just getting a lot of people through primary school, so they can read and write, but for nations to really attract investments, a large proportion of the population needs to have received at least upper secondary education.

**“ ...for nations to really attract investments, a large proportion of the population needs to have received at least upper secondary education**

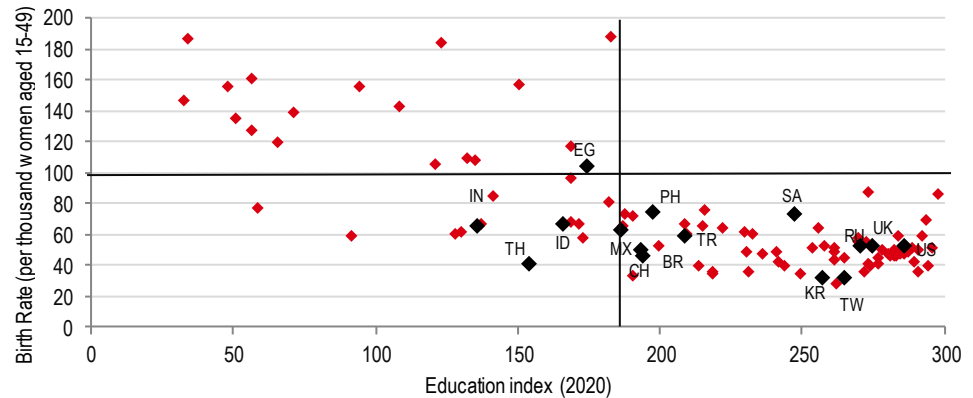
To illustrate this, we calculated an Education Index<sup>17</sup> which, using the proportions of people that receive either primary, lower and upper secondary or tertiary education, runs from zero to a maximum of 400. At zero, nobody gets any education. At 100, all people get primary education only. At 400, all will have received tertiary education.

Chart 29 plots the index to birth rates. Interestingly, no countries and territories with an education index over 185 – that is, a large proportion that finished at least higher secondary education – has a high birth rate (of 100 births per 1000 women). This is probably correlation rather than causation – GDP per capita correlates very well with education rates and with fertility rates.

<sup>17</sup> This education index takes the proportions of pupils that finish either primary, lower secondary, higher secondary or tertiary education in each country. It assigns scores to each education level (primary =0, tertiary =4). If everybody in a country has tertiary education, the score would be 400. A score of 200 suggests that half of the population has an education level that exceeds upper secondary education. The data is from the World Bank. The methodology is from Global Demographics, a consultancy.



**Chart 29. No economies with an education index value of above 185 has a birth rate over 100 per thousand women**



Source: World Bank, Global Demographics, HSBC.

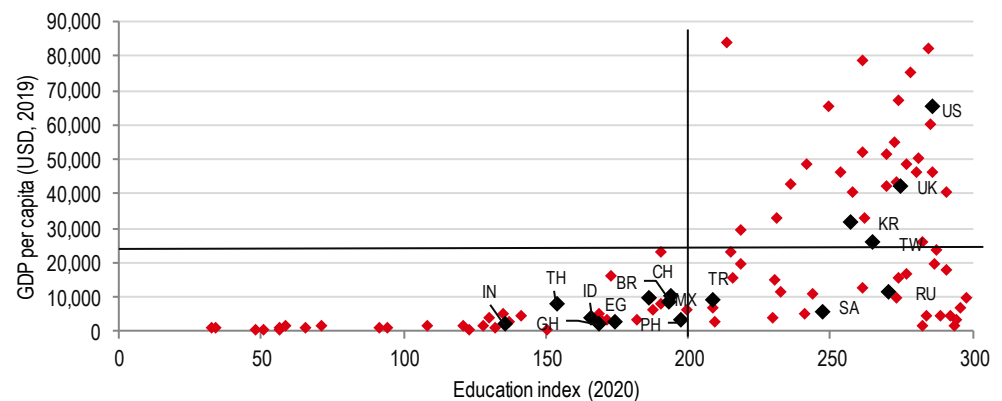
Notes: BR = Brazil, CH = mainland China, EG = Egypt, ID = Indonesia, IN = India, KR = Korea, MX = Mexico, NI = Nigeria, PH = Philippines, RU = Russia, SA = South Africa, TH = Thailand, TR = Turkey, TW = Taiwan, UK = United Kingdom, US = United States of America. Black dots are those labelled, red dots are others, unlabelled.

**Education accelerates  
demographic shifts and  
attracts capital**

Maybe even more important is that higher education levels attract investments and support growth. This is confirmed in a few recent demographic studies; “better education does not only lead to higher individual income, but also is a necessary (although not always sufficient) precondition for long-term economic growth.”<sup>18</sup>

In that sense, it is worrying that Africa’s youth (under 25 years old), who now represent more than 60% of the continent’s population and are still expected to increase in number by almost 20% in the next decade, still lack access to good education. South Africa and Egypt are, however, two African countries that have relatively high education scores.

**Chart 30. No economies with an education index <200 has a GDP/capita exceeding USD25,000. Only two are above USD10,000**



Source: World Bank, Global Demographics, HSBC

Notes: BR = Brazil, CH = mainland China, EG = Egypt, GH = Ghana, ID = Indonesia, IN = India, KR = Korea, MX = Mexico, NI = Nigeria, PH = Philippines, RU = Russia, SA = South Africa, TH = Thailand, TR = Turkey, TW = Taiwan, UK = United Kingdom, US = United States of America

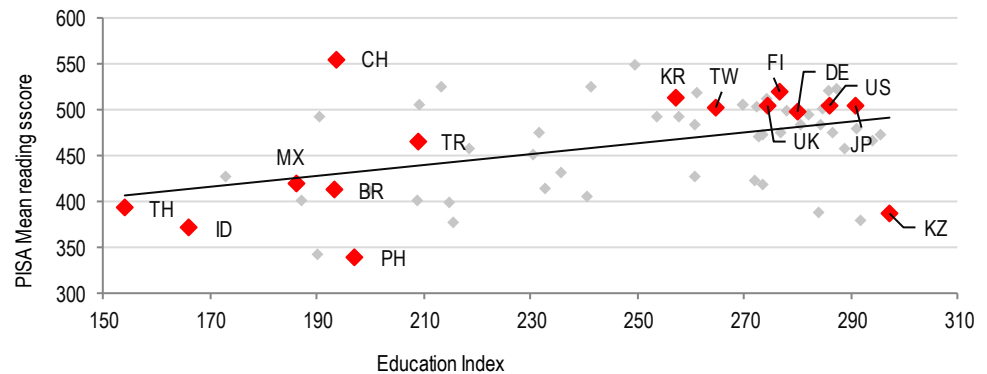
Just enrolling kids at school might not be enough – we also need to address the quality of the education they get. This can be compared by looking at international school tests such as PISA<sup>19</sup>. This is plotted against the education index. It shows that countries and territories where there are relatively more children that finish upper secondary and tertiary education tend to

<sup>18</sup> The Demography of Educational Attainment and Economic Growth", Lutz, W., Cuaresma, J.C., Sanderson, W., Science Vol 319, 22 February 2008, P1947-1048

<sup>19</sup> PISA is a set of international tests that measures 15-year-old school pupils' scholastic performance on mathematics, science, and reading across a wide range of countries

score better on international PISA tests. China appears to outperform but Indonesia and especially the Philippines seem to get kids to school, but underperform on tests.

**Chart 31. Economies where more kids get higher secondary and tertiary education seem to also do better on school tests at the age of 15**



Source: World Bank, PISA at the OECD, Global Demographics, HSBC

Note: BR = Brazil, CH = mainland China, DE = Germany, FI = Finland, ID = Indonesia, JP = Japan, KR = Korea, KZ = Kazakhstan, MX = Mexico, PH = Philippines, TH = Thailand, TR = Turkey, TW = Taiwan, UK = United Kingdom, US = United States

There are therefore huge benefits for nations to ensure most people finish secondary education. If they can achieve that, birth rates are likely to fall, investment may rise and living standards, measured here in GDP/capita, are likely to be higher.



**There are therefore huge benefits for nations to ensure most people finish secondary education.**

For that, spending on education is required. This is summarised in the chart below which plots education scores to spending on education. There are countries that have good education levels and spend a lot on education – they will run away from the average. But there are also many countries where education is insufficient (the index is below 200) and not enough money is spent. These countries might struggle to follow the rest of the world or need to step up spending on education. Example are parts of ASEAN (Indonesia and the Philippines), India, Ghana<sup>20</sup> and Mexico.

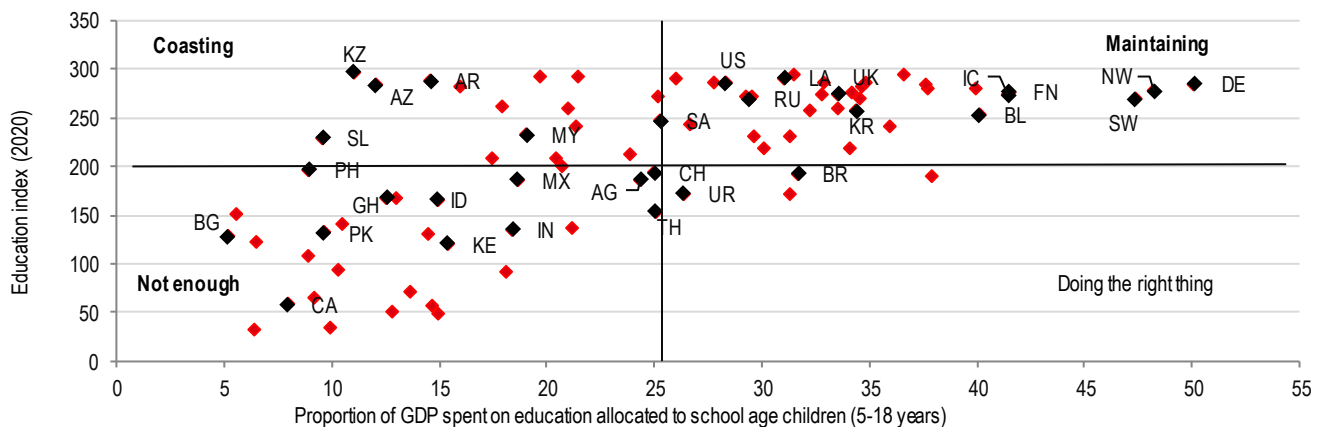
Thailand, South Africa and China are right on the cusp – any cuts in education can put them in the wrong quadrant of these charts but some spending might just push them into the right quadrant. They should raise spending on education. Egypt is interesting too, as the chart on investments suggests that even small improvements in education might have a large pay-off in terms of investments that it could attract.

China, Brazil and the Philippines seem to have made the transition, or are on the cusp of doing so, into the “200 and over” zone in education. There, benefits from education should become increasingly visible in the next few years and decades. Brazil and Uruguay, however, appear to spend more to get there and the Philippines much less so. This is a risk to the Philippines.

<sup>20</sup> Unfortunately, the only country for which we do not have data to calculate an education index is Nigeria, and this will be one of the most populous nations by 2050. As such we have explicitly highlighted Ghana in the chart, assuming that it might indicate where Nigeria could be in the charts if data were available. Ghana has a similar GDP/capita but seems on different Africa-centric school education tests score a bit better than Nigeria.

Cambodia and Bangladesh need to do much more given their low education scores while South Africa, Belarus, Latvia, Korea and large parts of western Europe and the US are maintaining their lead in education.

Chart 32. Who spends enough on education, and who does not



Source: World Bank, Global Demographics, HSBC

Note AG = Argentina, AR = Armenia, AZ = Azerbaijan, BG = Bangladesh, BL = Belgium, BR = Brazil, CA = Cambodia, CH = mainland China, DE = Denmark, FN = Finland, GH = Ghana, IC = Iceland, ID = Indonesia, IN = India, KE = Kenya, KR = Korea, KZ = Kazakhstan, LA = Latvia, MX = Mexico, MY = Malaysia, NW = Norway, PH = Philippines, PK = Pakistan, RU = Russia, SA = South Africa, SL = Sri Lanka, SW = Sweden, TH = Thailand, UK = United Kingdom, UR = Uruguay, US = United States of America

It should also be noted that, when it comes to spending on education, China has a significant lead over India, but it is still below average on the global scale and has significant room for improvement. But if the money is spent wisely, China and Brazil could move into the upper right quadrant – high spending and high scores in education would allow these two countries to move to the quadrant that includes the UK, Korea and Russia – where they maintain their education lead over the rest of the world.

**“ Egypt is interesting too (...) as even small improvements in education might have a large pay-off in terms of investments that it could attract**

India deserves some attention. In China, since 1984 children up to the age of 12 had to go to school. In India, it is only in the last few years that this has been enforced. It will likely take another decade before the benefits of this would become visible.

It is estimated that the proportion of the labour force with upper secondary and above education will increase from 30% in 2019 to 38% by 2045<sup>21</sup> in India. But that is only slightly better than where China was in 2019. So there is effectively a 25-year gap between the two countries.

## Dilemmas and policy implications

Education has incredible long-term pay-offs – it can accelerate demographic shifts, attract capital and improve employment prospects. But education needs continued investments, especially in nations that do not spend a lot at the moment, such as India, Kenya, Pakistan and

<sup>21</sup> Global Demographics website

Cambodia. In other countries, PISA scores suggest that investments should focus on the quality of education that is on offer, such as in Indonesia and The Philippines. Will politicians be willing to invest in it despite the fact that the benefits of their investments might not become immediately visible? And are fiscal budgets sufficiently robust to make these investments?

### **The next chapter**

Having examined the big demographic trends on the planet – how many people are there, where do they live, how old and how well educated are they – it is now time to zoom into the basic unit at the centre of it all – the family.

# Modern family

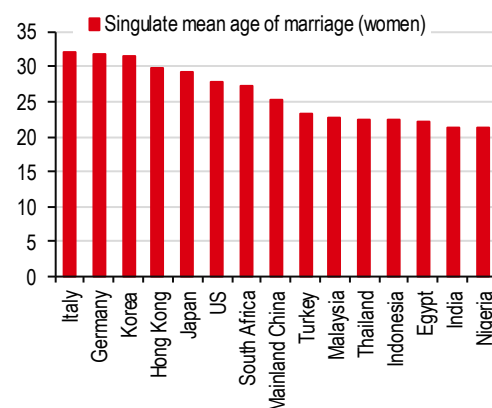
- ◆ Fertility rates are falling, as are the number of marriages
- ◆ This lowers the average size of households, with many 'empty-nesters' in China...
- ◆ ...impacting what people buy, where they shop and how they save

## The modern family is small

Having looked at demographics in countries, it is now time to zoom in to people and their families. This chapter looks at changes in families and households and how it impacts consumption because larger households consume differently than smaller ones, and younger families are different from older ones. Understanding trends in households will therefore give us a better insight into what sorts of merchandise shoppers will be in the market for.

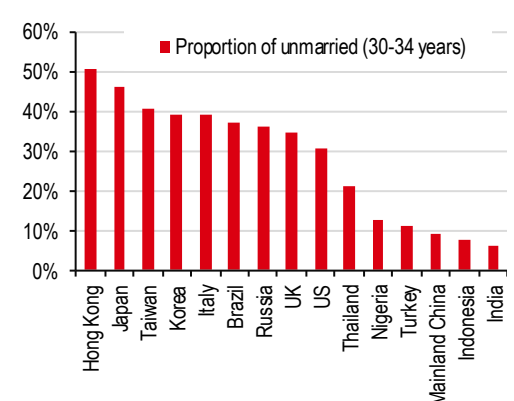
Let's first focus on the traditional way households were formed – marriage trends. Chart 33 shows that the average age of a first marriage is high in the affluent economies of Europe and Asia – Italy, Germany, Korea and Hong Kong. It is highest in Italy, at 32.2 years, followed by Germany at 31.7 years. The average age of marriage has consistently increased over the past decade.

**Chart 33. Average age of a women for their first marriage: highest in Italy, Germany and Korea**



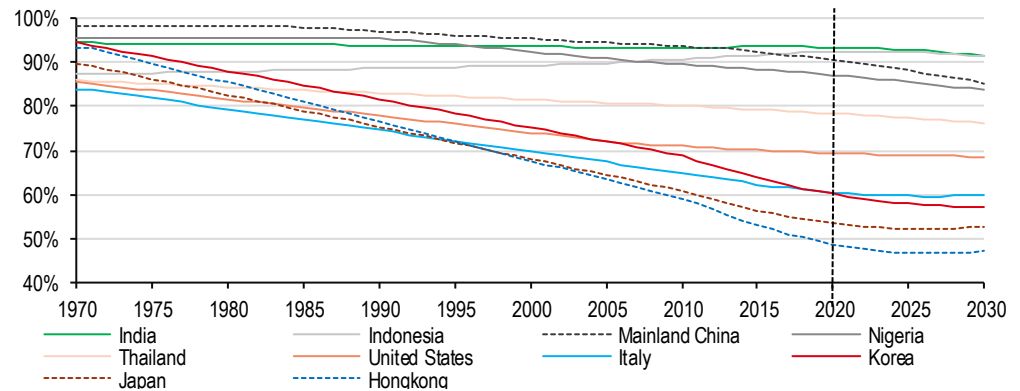
Source: Gender statistics – World Bank, National Sources, UN World Marriage Data 2019, HSBC

**Chart 34. Low proportion of unmarried women aged 30-34 in India and Indonesia**



Source: United Nations, HSBC

In addition, not only do people marry later, many do not marry at all. Chart 34 shows that in Hong Kong, 51% of the women in the 30-34 age group are unmarried, compared with 40% in Korea or Italy, and 30% in the US. In some economies, this would have been only 10% in the 1970s. By comparison, in India, only 6.5% of women in this age bracket were unmarried in 2019, according to UN estimates.

**Chart 35. Proportion of married women at the age of 30-34 years is falling over time**


## Number of children

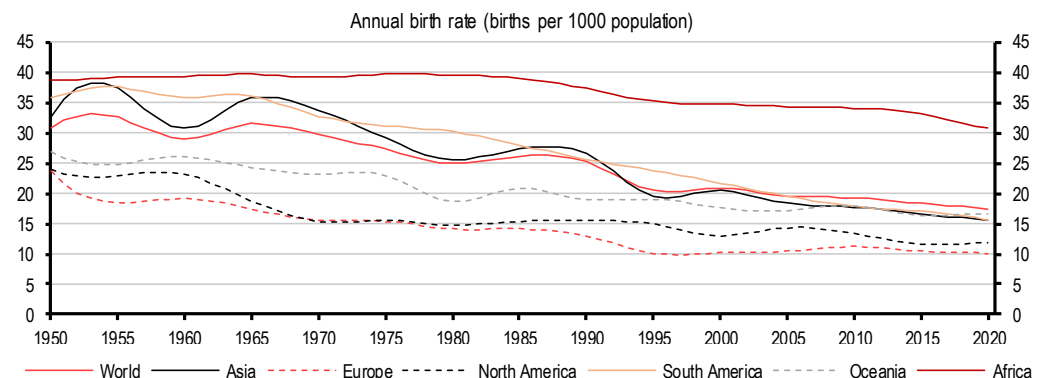
Fewer marriages also have an impact on fertility rates. In Japan, only 2% of children are born to single mothers. But in large parts of western Europe, it's very different – 55% of births in Sweden take place outside of marriage.

### Fewer children

On average, women need to have 2.1 children to keep population numbers constant. This is because two children are needed to replace the parents and the additional 0.1 reflects mortality rates and the fact that, on average, there are just a few more males born than females.

Fertility rates<sup>22</sup> have been declining and have been below the replacement level for a few decades. In fact, the fertility rate was 1.0 in Korea (vs. world average of 2.4%), the lowest among OECD countries. On the other hand, it is highest in Nigeria at 5.4.

There are a few reasons for this. Cultural factors might be at play or simple economic issues, such as the increased cost of children's education. However, the issue is that lower fertility rates drive lower population growth across the world.

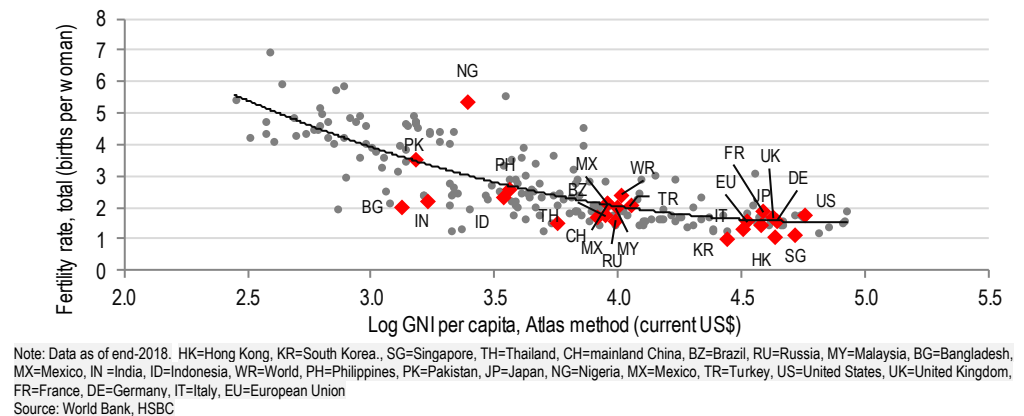
**Chart 36. Birth rates have been falling across economies**


Many things will play a role in determining fertility rates. Firstly, incomes per capita and fertility rates have an inverse relationship – as incomes rise, women tend to have fewer children.

<sup>22</sup> Births per woman

Typically, lower fertility rates are also associated with lower levels of infant mortality (as a result of better healthcare systems), as well as families in more industrialised economies not opting to have as many children to help to work. This income-fertility relationship might also work the other way around – with fewer children, women have more time to work and generate income.

**Chart 37. Fertility rates fall with income per capita**



On top of this, a myriad of social changes means that people are having fewer children. Economic weakness and uncertainty as a result of the pandemic are likely to mean lower birth rates in 2020 and beyond, but this is on top of changes in attitudes towards having children in many emerging markets as a result of higher female participation rates in labour markets, environmental concerns and financial constraints to having many children.

**The average household is getting smaller**

The consequence of falling number of marriages and children is that average household sizes are falling – Hong Kong, Japan and Korea have some of the lowest average household sizes in the world at 2.4, followed by Italy and Germany.

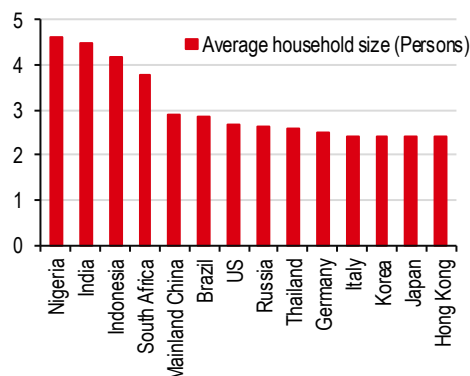
In fact, more than half of all households in Hong Kong, Japan, Korea, Germany or Italy now comprise just one to two people. Mainland China's average household size is falling too. It used to be 3.2 in 2007 and 3.5 in 2000 and now it is at 2.9. Here, given that the average Chinese is about 40 years old, a factor is that children are leaving home, giving rise to a growing number of two-person households called 'empty-nesters'.

**“ The consequence of a falling number of marriages and hence children is that average household sizes are falling – Hong Kong, Japan and Korea have one of the lowest average household sizes in the world at 2.4, followed by Italy and Germany**

A typical Indonesian household is much bigger and is made up of 4.2 persons, while in Nigeria or India, this is more than 4.5.

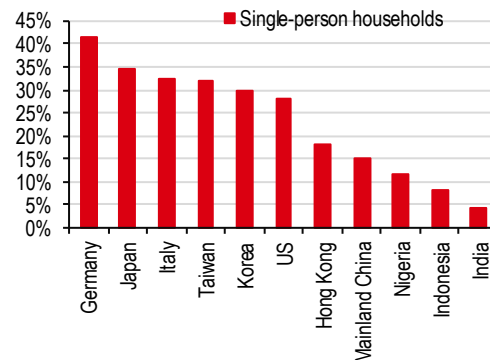


**Chart 38. Average household size is smaller in East Asian and developed European countries**



Source: National Sources, UN, HSBC

**Chart 39. Single-person households are common in Germany and Japan**



Source: National Sources, UN, HSBC

Another trend is the increase in the number of single people. Take Korea for example, where single-person households are estimated by Statistics Korea to account for 29.6% (and 58.5% if two-person households are included) of total households in 2020e, which is close to one third of all households. This is a significant increase from 23.9% in 2010. Single-person households are estimated to rise to 32.7% (and 65.6% if two-person households are included) by 2030e. In China, households with one to two people accounted for 77.1% of total households in the developed regions of the country in 2017. And in Europe, Sweden has the highest share of single-person households in Europe at more than 50%.

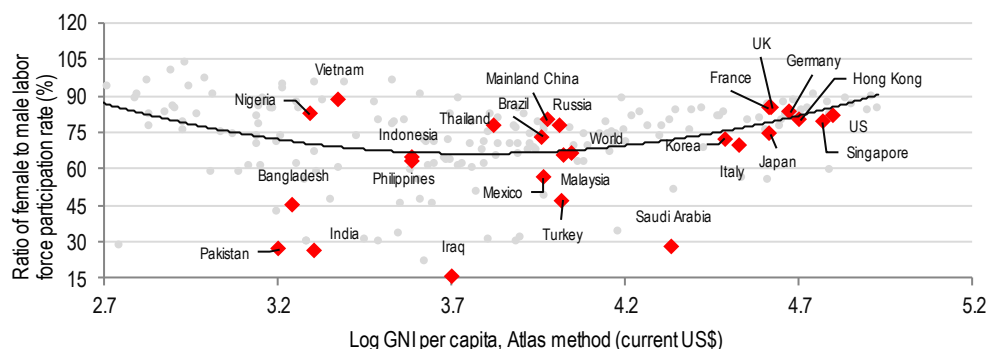
**“ In China, households with one to two people accounted for 77.1% of total households in developed regions in 2017**

## Working women

We now look at the breadwinners in a family, especially the number of women who work and, thus, generate income for the household of which they are part of. This, too, has significant consequences for how households consume.

Chart 40 plots female labour participation rates across the world and highlights a “smiley” curve that links income levels to female labour participation. At lower income levels, female participation generally tends to be high.

However, as incomes rise from very low levels, female participation initially tends to fall as women switch from employment to taking care of children. This is the case in, say, Indonesia and the Philippines, for example. However, as income levels continue to rise further, female labour participation starts to rise again, as we see in Korea, France or UK.

**Chart 40. Divergent trends in female labour participation**


Note: Data as of end-2019.  
 Source: World Bank, HSBC

**Female participation is high in China, Nigeria and Vietnam and low in India, Turkey and Saudi Arabia**

However, the chart also shows that there are large differences in female participation that cannot be accounted for purely by differences in income levels. Compared with China, female participation is lower in ASEAN, although still much higher than in India. Malaysia's participation rate appears to hit its peak for women aged 25-29 years, after which there is a dramatic fall. This suggests that the majority of women will work upon graduation but leave as they start families and then rarely return to the workforce<sup>23</sup>. But this is not always the case. In Indonesia, women are climbing the career ladder. According to Statistics Indonesia, the percentage of women who hold the title of manager increased from 24.2% in 2016 to 30.6% in 2019.



**Compared with China, female workforce participation is lower in ASEAN, although still higher than in India.**

It might be that socio-cultural norms are at the root of these differences across the region. This appears to be the case in India, Saudi Arabia or Iraq. They may also be impacted by the number of children that a household has. The more children there are in a family, the more time is spent on nurturing them and, therefore, there are fewer opportunities for women to work (as the time required for these children often falls disproportionately on the shoulders of women in the household).

Irrespective of the causes, there are divergent trends in the ratio of women working across the region. Interestingly, in most countries more women than men have entered the workforce over the past three years. This is especially the case in the Philippines, Indonesia, France, and Mexico. The exceptions are China, India, Nigeria and Thailand (and hence the world overall) where fewer women now enter the workforce than men (or retire earlier).

**India is an outlier with female participation falling from 35.7% in 1990 to 27% in 2019**

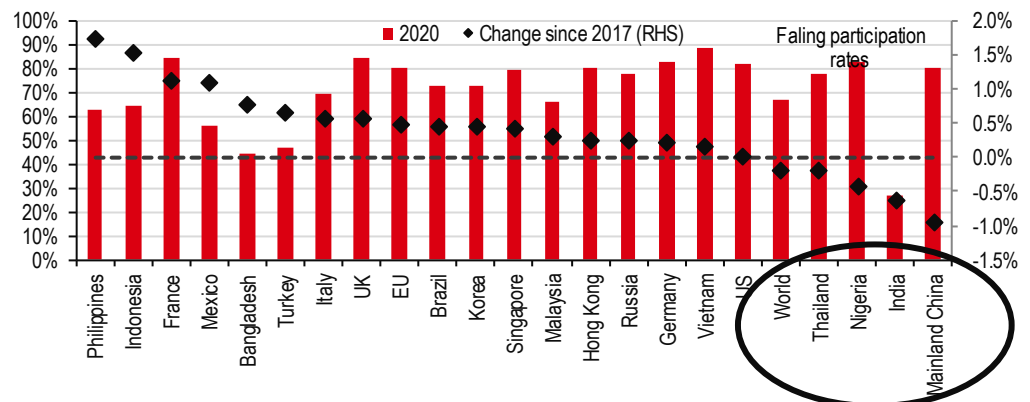
Female labour participation actually fell in India from 35.7% in 1990 to 26.7% in 2019.<sup>24</sup> Note that, in China, this ratio has also fallen but that might be because it was high to start with – it decreased from 86.4% in 1990 to 79.9% in 2020.

<sup>23</sup> "Women in the workforce", Tricia Yeoh, 16 January 2014. From a presentation at the Asia Liberty Forum 2014 in Delhi, India

<sup>24</sup> Ratio of female to male labor force participation rate (%) (modeled ILO estimate).

**“ Interestingly, in most countries, more women have entered the workforce. This is especially the case in the Philippines, Indonesia, Korea, and Bangladesh**

**Chart 41. Participation rates are improving in ASEAN and Northeast Asia, still high in China, but falling in India (%)**



Source: World Bank, HSBC

This has important implications for household spending that is probably best illustrated by looking at what is called the dependency ratio, which measures the number of breadwinners versus the mouths to feed in any particular household.

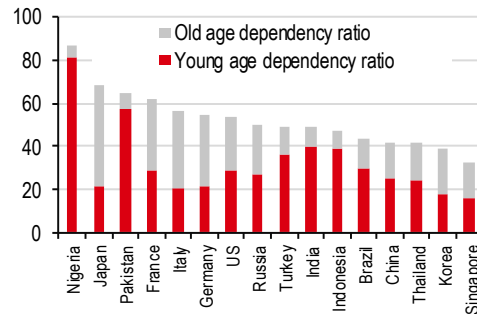
## Breadwinners and mouths to feed

Dependency ratios differ widely across the planet. The lower the dependency ratio, the fewer dependants there are and the more a household is able to save or indulge in discretionary spending. The reverse also holds true – the higher the ratio, the less income there is available for either discretionary spending, investing in education or saving for the future.

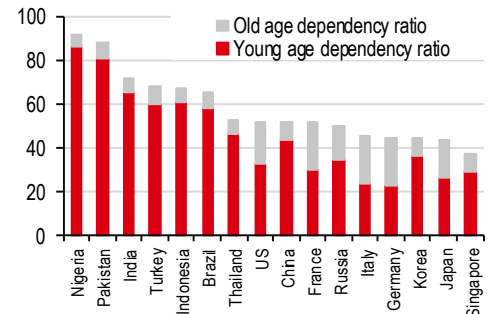
The chart below shows that Japan has a high dependency ratio, i.e. there are more dependants per working aged person and it consists of a larger portion of elderly that need to be supported. In Nigeria, ASEAN and India, it's the opposite and comes from young dependants.

In China, the dependency ratio is substantially lower.<sup>25</sup> This also suggests that the prospects for discretionary consumption and savings will be better for a family in China than in India and the Philippines. Also, since 1990, the dependency rate has fallen for most economies but not for Japan, Russia, US and Europe.

<sup>25</sup> In India, the average worker (or better said, those of working age) supports 0.5 other people (excluding themselves). Breaking these into age-specific dependants into those below 15 years and those above 64 years – a typical working Indian supports 0.40 children and 0.09 elderly people. This ratio of elderly dependency has actually increased from 0.05 in the 1960s as India's mortality rate has fallen and life expectancy has increased. Compared with other countries, Indonesia's numbers are comparable with the working age individual supporting 0.40 children and 0.08 elderly people. In China, it is 0.2 children and 0.15 elderly people. In fact, India has one of the highest young age dependency ratios in Asia after the Philippines.

**Chart 42. Dependency ratios are high in Nigeria and Japan (2019)**


Note: China = mainland China  
 Source: World Bank, HSBC

**Chart 43. Ratios have risen for Japan, Russia, US and Europe since 1990**


Note: China = mainland China  
 Source: World Bank, HSBC

A key issue with the charts above is that it calculates dependency assuming the working age population to be wage earners. As we have seen before, in many ageing societies, people aged above 65 continue to work.

### An example

To put this in practice, consider two households where people receive the same salary, say 100 dollars. One is a typical Chinese family of three persons. The other an Indian family with 5 persons. The Indian family has 100 dollars to divide over the 5 people in the households, so on average each of them spends 20 dollars.

In China, the women will also work, so actual household income is higher, say, 120 dollars. And as there are three, this means each of them can spend 40 dollars. The scope for discretionary spending in the Chinese household is much higher than the Indian one, even at the same income levels.

**“ The scope for discretionary spending in the Chinese household is much higher than the Indian one, even at the same income levels.**

## The next chapter

Smaller households with fewer children will transform consumer markets. To understand how this all comes together, we now look at a special case: the rise of empty-nesters across the planet. And we examine in particular China, where it is the most prominent trend.

# Chinese ‘empty-nesters’

- ◆ Ageing, a high proportion of female labour participation, and small households are key trends in China
- ◆ This leads to the rise of Chinese ‘empty-nesters,’ also known as the ‘dual income, no kids’ (DINKs) phenomenon
- ◆ This is one of the largest and fastest-rising consumer markets globally

## Chinese ‘empty-nesters’

A few countries are seeing a rapid rise in what can be called empty-nesters: children have left the household leaving one, or sometimes two, wage earners with a comfortable financial position. This is especially the case in China. Elsewhere, such as Nigeria and Indonesia, the group of people in this age bracket will rise as well, but nowhere is it as big as in China, and there are three reasons for this:

1. Chinese households are smaller than elsewhere across the region, the result of the one-child policy in 1979-2016.
2. Female labour participation rates have been high, which means that there are many dual-income households.
3. An ageing working population has given rise to an affluent middle-aged segment of society.

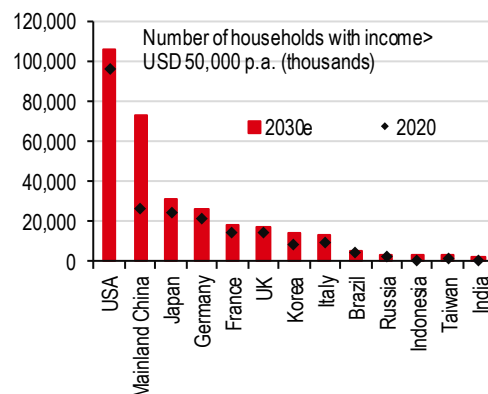
All this lifts the number of Chinese ‘empty-nesters’ or DINKs – “dual income, no kids” – in China. Some demographers believe that this is the largest, fastest-growing consumer market globally.



**Some demographers believe that this is the largest, fastest-growing consumer market globally.**

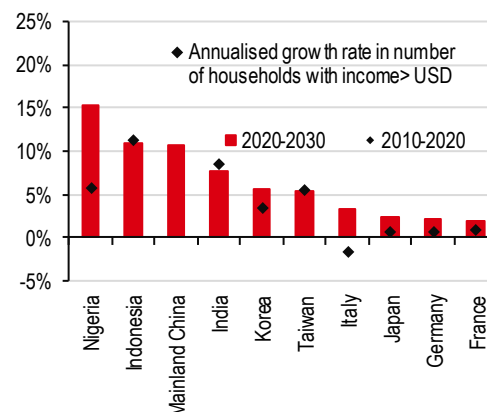
To put some numbers to this, the number of Chinese households earning more than USD50,000 per year is expected to be over 73m by 2030e (source: Global Demographics), growing by a CAGR of 10.6%. This is compared to expected growth of just 0.9% in the US. Given the high proportion of one to two-person households, this is the segment which is expected to drive luxury spending globally.

**Chart 44. Chinese households earning more than USD50,000 p.a. to be over 73m by 2030e...**



Source: Global Demographics, HSBC

**Chart 45. ...growing by a CAGR of 10.6% in the next 10 years**



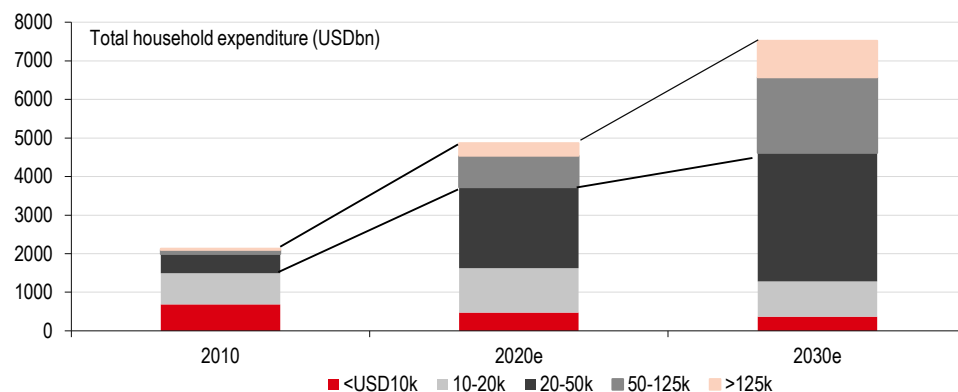
Source: Global Demographics, HSBC

Global Demographics also estimates that 44% of the adult population in urban China are 40-60 years old and account for 53% of urban consumer spending. This segment of consumers have children in their late teens or older and who have typically moved out, turning the three-member household into a two-member household, known as working-age 'empty-nesters'. This 'empty-nester' cohort is likely to form 46% of the adult urban population by 2028e and be responsible for 55% of total spending.

**“ This ‘empty-nester’ cohort is likely to form 46% of the adult urban population by 2028e and be responsible for 55% of total spending.**

Chart 46 represent total annual expenditure of all households that belong to each income category. It shows that it is the higher income level groups (with annual income of more than USD50,000) that are likely to be the key driver of overall consumer spending in China over the coming decade. This group's influence as a consumer market should grow in the coming years.

**Chart 46. China's consumer spending is increasing, especially in high income households**

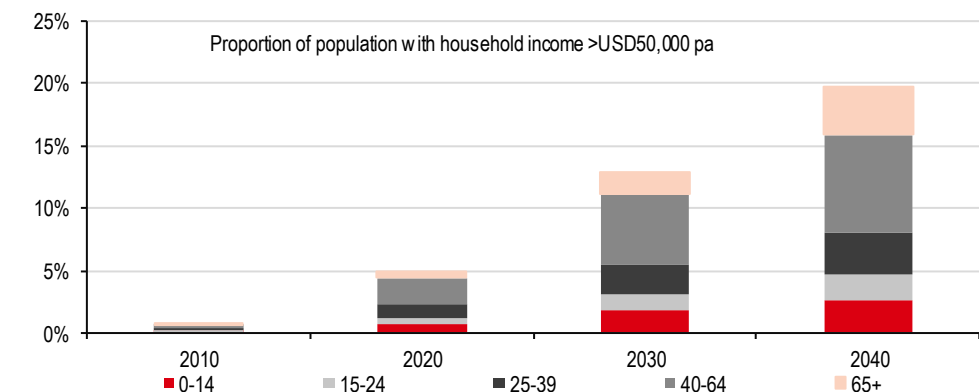


Note: The bars represent total annual expenditure of all households that belong to each annual income category.  
Source: Global Demographics estimates, HSBC

As per the same source, c20% of the Chinese population should have household income of more than USD50,000 by 2040, compared to just 5% in 2020. 8% of the Chinese population have household income over USD50,000 and belong to the 40-64 age group.

Empty-nesters consume differently. They have already acquired a house and a car. While COVID-19 has temporarily disrupted consumption, in normal times they are in the market for experiences and healthcare, which can include yoga-lessons or other sports-related items, travel and if they go out, they tend to like the good life and visit better restaurants. The key is that they can trade up.

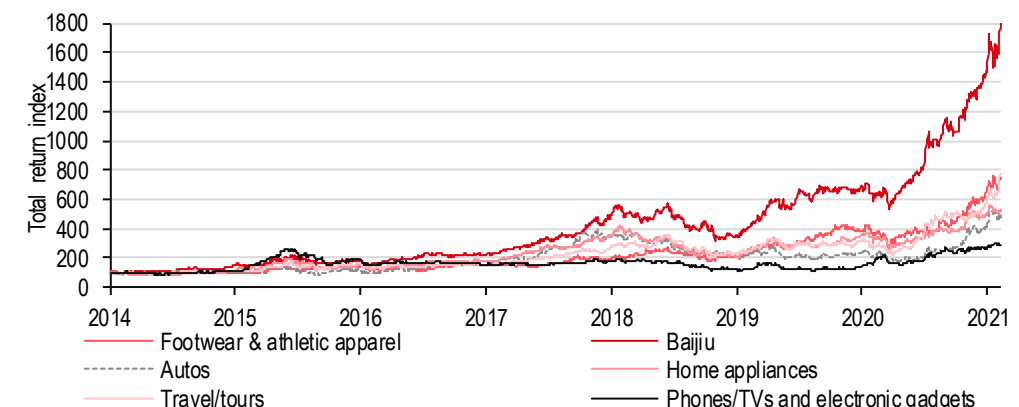
**Chart 47. c20% of Chinese population will have household income of more than USD50,000 by 2040**



Source: Global Demographics estimates, HSBC  
 Income in 2019 USD values

Some of these changes in consumer trends are already reflected in the stock markets, although the actual unfolding of this demographic shift will take years to come. Chart 48 below illustrates that this empty-nester phenomenon can explain some of the divergence we have seen in the consumer sectors in the past two years. Sectors that benefit from a shift in consumption by these empty-nesters have significantly outperformed the sectors that they shy away from (such as autos).

**Chart 48. China consumer sector performance: more Baiju and footwear, less autos**



Note: Shades of red indicate sectors that benefit from empty nester preferences, while shades of black represent sectors empty nesters shy away from. The indices are an equal-weighted portfolio of four stocks representing the industry. If the stock was not listed during the sample period, then the index comprises the remaining constituents. Baiju: Kweichow Moutai, Wuliangye Yibin, Jiangsu Yanghe and Luzhou Laojiao. Footwear & athletic apparel: Anta Sports, Li Ning, Xtep Int'l and 361 Degrees. Home appliances: Midea Group, Gree Electric Appliances, Haier Smart Home and Hangzhou Robam. Travel/tours: Ctrip, China International Travel Services (CITS), Huazhu Group, China Tours (CYTS). Autos: Saic Motor, Geely, BYD, GAC. Phones/TVs and electronic gadgets: Xiaomi, TCL Electronics, Qingdao Hisense, Konka Group.

Total return index includes capital gains as well as any cash distributions, such as dividends or interest

Source: Refinitiv Datastream, HSBC

# Policy decisions

- ◆ Demographic challenges create huge policy dilemmas for governments...
- ◆ ...both in terms of how to raise revenues...
- ◆ ...and how best to spend the public finances

## Challenges for all

This report has thrown up a number of key challenges for policymakers as a result of the enormous demographic changes that are currently being seen across the world. For some, with young, fast-growing populations, the question is how best to spend public funds – is it on education? Healthcare? Infrastructure? For others, with ageing populations, policy decisions are even tougher – how can we generate substantial enough revenues?

## Getting more taxpayers

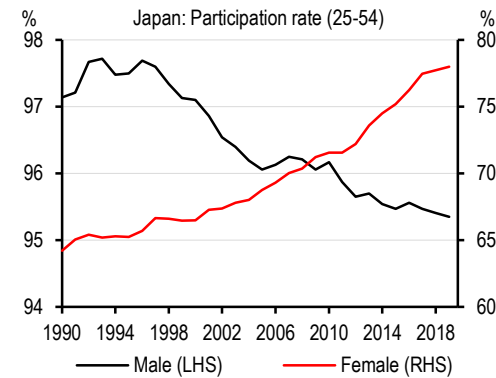
For many governments across the world, shrinking populations, or more pressingly shrinking working-age populations relative to the number of dependents, will put more pressure on public finances. There are a number of policy options that could be explored, and these are likely to be more commonplace in the coming years.

### 1. Improve productivity/make the most of the current population

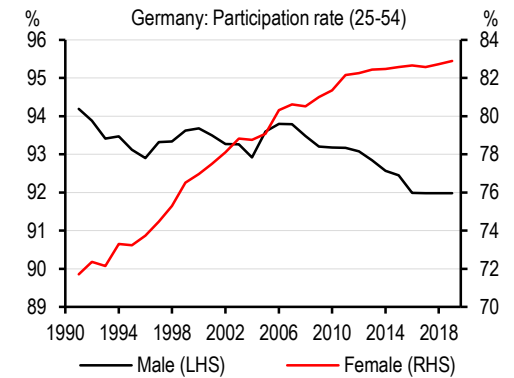
Given that demographic changes are extremely hard to push through in a short space of time, some countries are focusing on improving the output from the population they have.

- **Female participation:** In Japan, a push to increase female participation has been key in driving up the effective working-age population. This isn't as strong a tool for many countries where the female participation rate is already much higher, but across the world we are seeing the share of the female population that are working rising steadily.



**Chart 49. Japanese women are being encouraged into the labour force...**


Source: ILO

**Chart 50. ...and there's a clear divide between genders in Germany**


Source: ILO

- **Productivity:** Simply put, this is making the most out of what you have. However, productivity growth has been limited across the developed world pre-pandemic, not helped by more jobs being created in roles where productivity growth is harder to come by or harder to measure, such as within the service sector. To see a noticeable jump in productivity we would have to see a big pick-up in investment spending, or further investment in automation.
- **Robots:** One way to boost productivity is to raise the degree of automation in the economy. This has been the South Korean model of the past few years. The country has more robots per worker than any other country in the world by some distance, helping to hold up potential growth despite a collapse in the working-age population, with the number of potential workers now shrinking by roughly 1% per year.

## 2. Domestic options: Raise the size of the worker population

- **Higher fertility rates:** Doing so is easier said than done, with only a handful of countries seeing a higher number of children per woman today than 20 years ago or so. Policies to raise the fertility rate such as better maternity pay or leave, free childcare or better education will require significant investment that policymakers may be unwilling to pursue given that the impact may take 20 years to be seen.
- **Raise retirement ages:** The faster solution to solving demographic challenges is to raise the retirement age. However, this is not a policy option that many governments seem keen to pursue given how unpopular it is. As retirement ages in many parts of the world are still 65 and life expectancy has moved on some way since they were put in place many years ago, we believe this will have to change in the coming years as governments are faced with the challenges of ageing populations.

## 3. Overseas options

- **Migration:** This may seem like the hardest 'solution' to demographic challenges in terms of the political environment. Many countries in the developed world rely entirely on migration for population growth due to their fertility rates and death rates, so any changes to migration policy can have a major impact on aggregate population growth rates in the short term. While many countries aim for skilled migration, or have a points-based system like Australia, there is ample academic evidence that migration more broadly can lead to significant benefits in terms of growth rates. Migrants are typically young and of working age and so can help to balance an ageing population pyramid and maintain potential growth rates.

- **Tourism:** Tourism is an alternative way to bring in additional consumers for an economy. Whilst the pandemic has taken away that option for many countries temporarily and exposed the risks of being reliant on overseas flow of people, tourism could be an avenue to offset the shrinking of populations in some parts of the world – notably Thailand, where more than 13% of GDP is tied to the sector.
- **Offshoring:** The final option is to make products using labour overseas with the profits coming back to domestic producers, and which can mean higher-skilled jobs in a country. Within manufacturing, engineers, marketing and finance divisions could be run out of a shrinking-population developed market while all production is done overseas within that company (such as Apple with factories in China). This has been key to minimising the demographic drag for many countries over the past few decades: making the most of better global demographics. However, this approach could be under threat if trade tensions amplify and moving products across borders becomes more difficult due to the rise in protectionist policies. If that is the case, the 'option' of offshoring may become less attractive or less effective in supporting growth for countries with rapidly-ageing populations.

## Those with fast-growing populations

For many parts of the world, working-age populations continue to grow and demographic changes will contribute positively towards growth if it can be harnessed. However, this creates quite different policy dilemmas.

### 1. Can enough jobs be generated?

For many emerging market economies, populations are growing extremely quickly. As we have outlined in this report, India's working-age population is expected to grow by more than 840,000 per month – meaning many more jobs are needed. That may be difficult if many roles in manufacturing become more vulnerable to the threat of automation and so new industries may need to be supported to help generate enough jobs.

### 2. Should spending be concentrated on education?

Given the risks to jobs, improving the education rates of the population may help to broaden the types of jobs that are available. While the return on investment will vary by country – given the differing start points in terms of educational quality and the size of the school-age population, education spending is likely to have to increase in much of the world, as we outlined in the education chapter of this report.

### 3. Or healthcare?

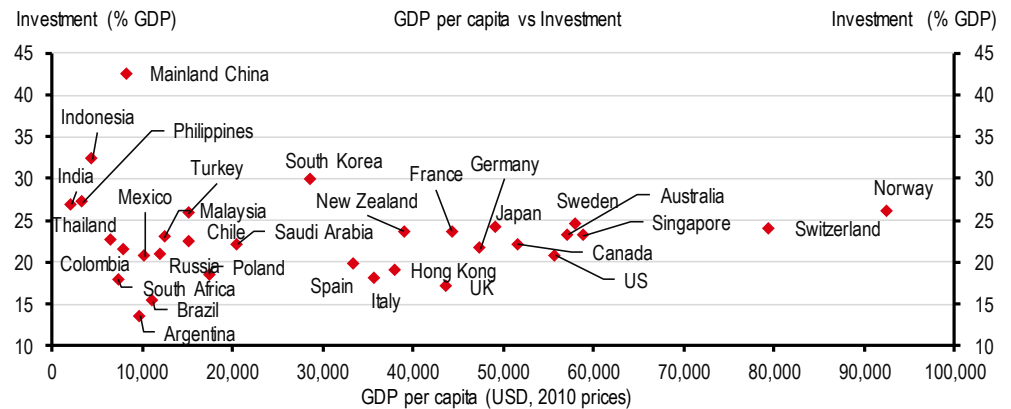
Even in countries with very young population, the size of the older population is rising quickly. This will likely put pressure on existing health systems that have relatively low capacity. Spending in this space will have to increase as we have outlined in the healthcare chapter.

### 4. Or infrastructure?

Many countries would benefit from improving the provision of infrastructure to enable growth. This could be digital infrastructure – to allow more people to be connected to the Internet and to have access to education and healthcare information via this channel – or physical infrastructure to improve roads, rails and availability of utilities. This investment will be key to lifting growth in much of the world and to allowing young populations to become a key support for growth, rather than a challenge.

In these economies, there will have to be more investment. But for many – particularly in Latin America, Russia and South Africa, that will mean lifting investment considerably. Those economies where investment is already a larger share of GDP, such as Indonesia, India and the Philippines, may be best placed to make the most of their demographic potential, while those where investment is much weaker risk seeing young populations turning into a burden rather than a benefit.

**Chart 51. Many emerging market economies have a very low level of investment as a share of GDP**



Source: World Bank, HSBC. Note: Data for 2019.

# Disclosure appendix

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