Emerging market demographics – Implications for growth and the rise of the global middle class

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Contents

Author

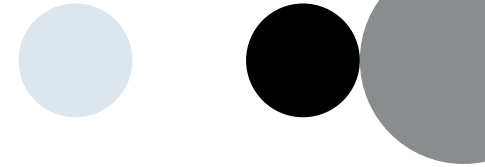**Robert Gilhooly**

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Introduction and executive summary

Demographic change influences economies and societies through a myriad of channels. Population size is a key determinant of a country's economic weight in the global economy, bringing with it political gravity alongside the size of its workforce. Population growth in 'young' countries can create growing pains – driving demand for new infrastructure and an expanding environmental footprint – while shifting population composition can put strain on the sustainability of social welfare models and public debt when countries reach 'old age'.

Both population growth and aging will characterise the world economy going forward. The global population is projected to rise by a quarter by 2050 and break 10 billion before 2060, with emerging markets accounting for all this rise. This increase in the total global population masks an even more dramatic change in demographic profiles within countries, with many developed and major emerging markets set to age rapidly.

This paper is the first of three 'in-focus' research papers which examine the nature and consequences of long-term demographic change in the major emerging and developing countries and regions.

We begin by outlining the key cross-country demographic trends, before considering how they are likely to influence the building blocks of long-run growth: labour, capital and productivity. Boxes provide additional detail on the rise of the global middle classes and demand for infrastructure, consistent with our long-run growth projections.

Our most important takeaways are that:

- Most of the emerging world faces **a slowdown in the growth of 'working-age' populations** over the next 30 years, with only Africa left to benefit from a 'demographic dividend'.

- Although this will weigh on most countries' potential growth, **the negative effects are mitigated by rising labour force participation among older workers.** Increasing educational attainment should also partially offset slower growth in the number of workers. Only advanced Asia and Eastern Europe are likely to see a negative contribution from both.

- More generally, **weaker capital deepening and total factor productivity growth account for a larger share of the deceleration in most countries' potential growth** than demographics.

- That said, **politicians, households and firms will react to and also shape the impact from changing demographics – implying there could be a feedback loop between demographics and growth.** Our demographic risk gauge considers this feedback risk and shows that it could negatively impact two-thirds of major emerging markets (EMs).

- Whether a country is well placed to benefit or suffer from its demographics can potentially be judged across several dimensions, specifically via effects on growth and risks. **Africa stands out as having the most upside, while Developing Asia (ex. China) tends to rank fairly highly too.** That said, institutions matter.

- In terms of the absolute size of their economies, **China and India will increasingly dominate the EM landscape in 2050,** while Indonesia and Nigeria move most notably up the ranks, breaking in to the top five largest EMs. Only China is likely to catch up with the US economy in absolute terms, eclipsing the US around 2033.

- The size of the Chinese and Indian financial and consumer markets will also rise notably. Equity market capitalisation in both China and India could more than triple. While **the rise of middle classes in EMs will also become a dominant force shaping global trends.** By 2040, China's consumer market may have overtaken the US and by 2050 it could be 20% bigger.

# Demographic trends in emerging markets will shape the world

The United Nations central case projection is for the global population to rise by almost 2 billion, to 9.7 billion by 2050, potentially hitting 10.9 billion by the end of the century. Population changes in emerging and developing markets account for the rise, with developed markets (DMs) expected to be little changed on a net basis. Of course, these aggregate figures mask huge divergences within EM and DM: Africa accounts for most of the population increase in EM – with Nigeria alone expected to see its population swell by more than 500 million. Meanwhile, China's population could fall by 375 million. Europe's projected 120 population decline may be offset by increases in the US, and other small DM economies, though this is heavily dependent on immigration assumptions.

Population trends are of course uncertain and become increasingly uncertain as we project further into the future. At a global level, alternative assumptions about how fertility patterns will evolve is the most important factor driving alternative population profiles. Variation in mortality plays a much smaller role, while migration trends can be important for individual countries.

The United Nations population division is the standard 'go-to' source for population projections and provides three core projections, dependent on different fertility assumptions (central, high and low), which also incorporate assumptions about migration. But how likely are these scenarios?

For emerging markets, a key question is how fertility will evolve alongside economic development. A recent study sponsored by the Bill & Melinda Gates Foundation and published in The Lancet provides an alternative take on the outlook. Assuming that total fertility rates decline alongside economic development (aided by improvements in education and access to contraception) the outlook for the global population in 2100 could be radically different (see Chart 1), with smaller estimates of population in sub-Saharan Africa (0.7 billion lower) and Asia (1.1 billion lower) explaining the majority of the difference between the UN and Lancet central cases.

Chart 1: Differing assumptions about fertility can have a marked impact on population projections

Global population in 2100, billions
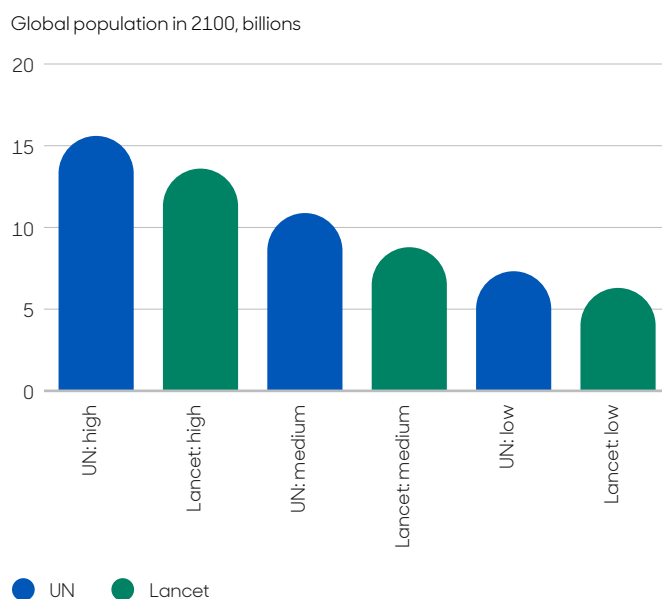
● UN   ● Lancet

Source: abrdn; United Nations, Population Division (2019); Lancet 2020, high and low scenarios show 'needs unmet' and fertility outcomes estimated to be consistent with the UN's sustainability and development goals (SDGs) respectively. As the authors note, it is unlikely that SDG's will be met, however.

Combining the implications from this study with a tendency for fertility to surprise on the downside, we think that the distribution of population dynamics has a modest bias towards low-to-medium fertility outcomes, putting more onus on within country demographic shifts.

Migration trends could of course surprise: beyond migration undertaken in search of better economic opportunities, large displacement events can occur due to violent conflicts or marked political instability. The growing risk of extreme climate-related events add an additional layer of uncertainty to long-term migration projections. These risks are beyond the scope of this paper, and as such we stick to the UN projections, which assume that the trend of migration from developing to developed countries will continue.

Working-age populations have already passed their peak in Europe and China

The expected changes to the composition of populations are no less striking than the total figures. Even assuming that fertility evolves in line with the UN's central case, the world faces a marked slowdown in the growth of the working-age population, commonly defined as ages 15–64. Correspondingly, dependency ratios are set to rise.

Europe's and China's working-age population is already shrinking while the contribution from the rest of Asia and Latin America (LatAm) is expected to fade close to zero over the next 30 years before turning negative – only Africa is really moving the dial positively on the global working-age population beyond 2050 (see Chart 2).

Chart 2 – The growth of the working-age population is expected to continue to slow

Change in the working-age population (15–64, millions)

- Africa
- Rest of Asia
- Europe
- Latin America and the Caribbean
- North America
- Oceania
- China
- India
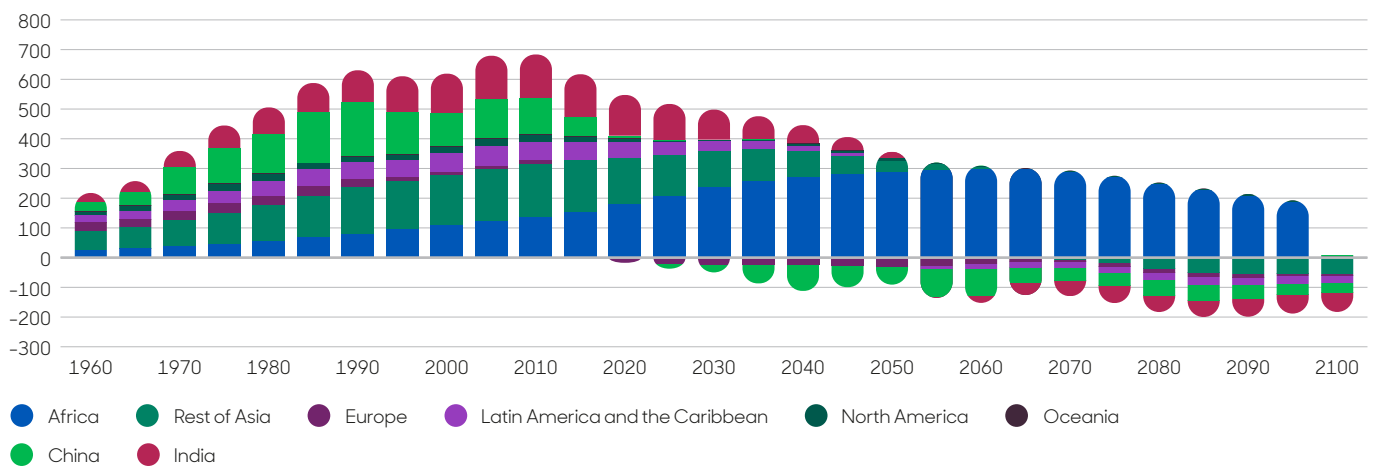
Source: abrdn, UN. March 2021.

Demographic dividends are drawing to a close for most EMs

As well as affecting the total size of the economy via the number of people and workers, a shifting demographic profile has the potential to influence economies in other ways, for example via investment, interest rates and inflation.

The 'demographic dividend' captures these effects by considering how population aging impacts an economy in its stages of economic development (Szreter, 1993).

In the first stage, fertility and mortality rates are both high. In the second stage, mortality falls, but fertility remains high, generating a large population boost and a higher dependency ratio. Next, the number of births begins to fall, and as the number of children falls relative to the number of workers the dependency ratio falls. This helps to generate a 'dividend' as fewer dependents helps per worker and per capita output to rise.

The life-cycle hypothesis helps to explain why the demographic dividend goes beyond a boost from just having relatively more workers in the economy. Prime-age workers save more than they consume, so a greater number of workers implies more saving, while fewer dependents also suggests that savings per worker could rise. At the whole-economy level this pushes up on aggregate savings, pushing down on interest rates and facilitates stronger capital accumulation as investment is spurred in machinery and buildings. Moreover, fewer children is typically associated with better educational provision and attainment, helping to underpin long-run growth via human capital. And finally, younger populations – aided by a tailwind from these factors – tend to be less resistant to structural reforms.

Of course, capturing a demographic dividend is not guaranteed. Institutional strength and depth are a key component driving development and weak governance can act as a brake on growth, perhaps wasting any dividend. Cultural norms can sometimes offset potential gains if, for example, female labour force participation does not rise alongside falling dependency ratios. While at the extreme it could even backfire: Cincotta (2010) notes that in countries with very young populations an "arc of instability" can form, which more than doubles the chance of conflict. Chart 3 illustrates that identifying a boost to GDP growth is far from clear cut.

Chart 3 – It is difficult to identify demographic dividends using simple metrics

Average growth in per capita income 5 years before start of demographic dividend (%)
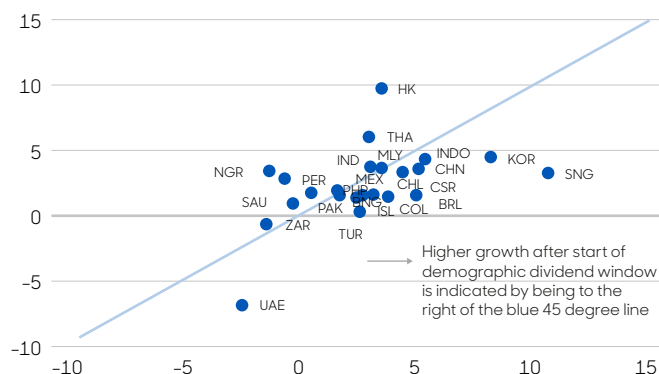
Avg growth in per capita income 5 years after start of demographic dividend

Source: abrdn, UN, Haver. June 2021.

Chart 4 provides an indication of the time frames over which major EMs[1] have had a boost from favourable population dynamics.

As the chart shows, most major EMs have now exhausted their demographic dividends and face rising dependency ratios.

Outside of the major EMs, frontier markets, particularly those in Africa, still have an opportunity to reap the demographic dividend, although few are likely to grow sufficiently to become major EMs in the next 30 years. Ethiopia, Kenya and Angola stand the best chance, helped by strong population growth and already moderately high levels of GDP relative to other African countries.

Chart 4 – Only Nigeria and Pakistan may continue to reap 'Demographic Dividends'[*]
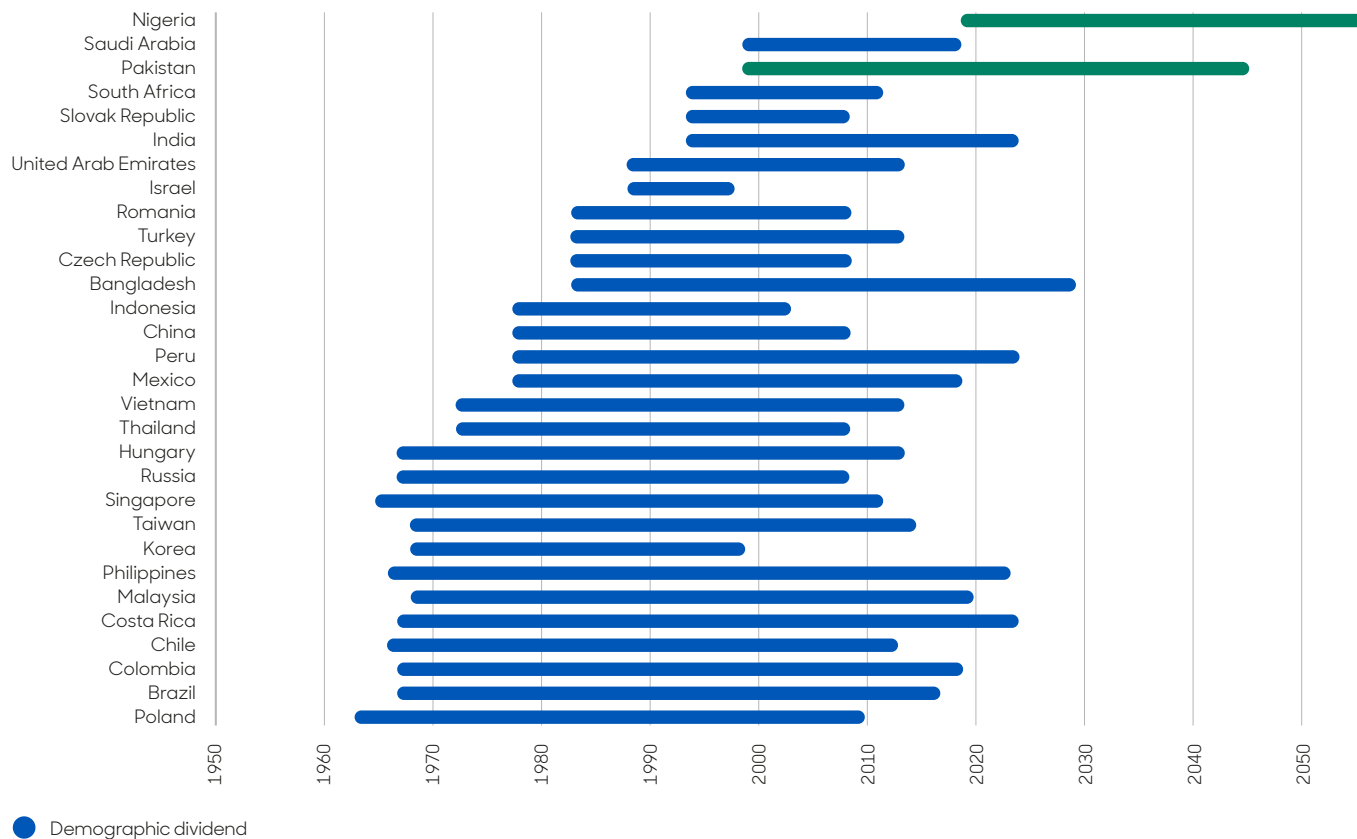
● Demographic dividend

Source: abrdn, UN. March 2021.

[2] Note: demographic dividend time period starts when dependency ratio falls and ends when it rises.
In this paper we focus on EMs with 2019 nominal GDP above $100bn.

# Workers matter more than the number of working-age people

Considering overall population trends and the dependency ratio provides a sense of the broad thrust of EM demographics; however, a more nuanced examination reveals important caveats. While 15–64 is commonly used to define the working-age population in academic literature, it is not necessarily an appropriate metric anymore, as it fails to take account of shifting labour force participation by different cohorts over time.

UN population projections suggest that the global working-age population will fall steadily, unwinding two-thirds of the rise between 1970 and 2020 (see Chart 5, top panel). However, labour force participation has fallen notably for ages 15–19 and has risen for those aged 60–70, so the standard definition may no longer be appropriate. In contrast to the picture of a clearly shrinking share of the labour force under the standard definition, the proportion of the world accounted for by those aged 20–69 is likely to remain fairly stable (see Chart 5, bottom panel).

This example is intended to be illustrative of the issue at hand: what matters most as a driver of economic growth is how the number of actively engaged workers in the labour force evolves, rather than whether one definition of working-age population is better than another. Hence, in this paper we focus on how the number of workers in each major emerging market may change and correspondingly how the dependency ratio relative to workers may develop.

Similar to DMs, employment rates of younger age groups in major EMs have fallen, as higher education has become the norm (pushing down participation) and unemployment has risen (reducing engagement). At the same time, rising life expectancy has contributed to an extension of working lives, boosting employment in older age groups (Chart 6, top panel).

Chart 5 – The share of workers in the global population is likely to be more stable than traditional metrics of 'working age' would imply

% of global population aged 15-64

% of global population aged 20-69

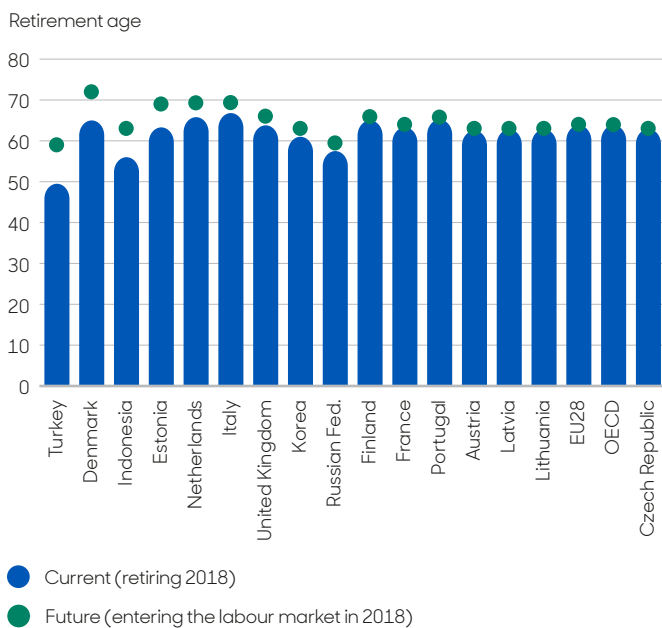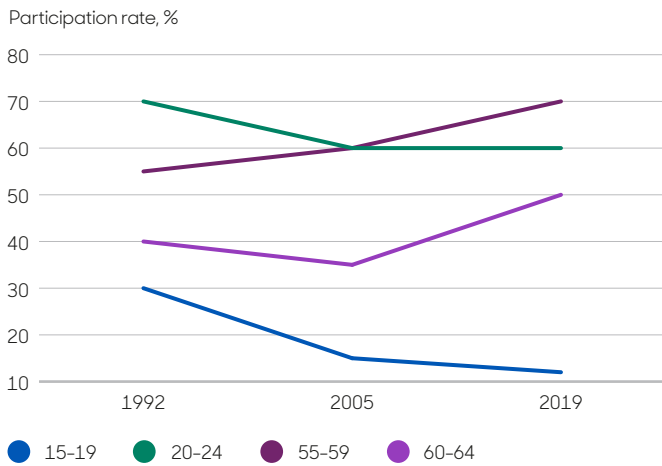● Lower 95   ● Median   ● Upper 95
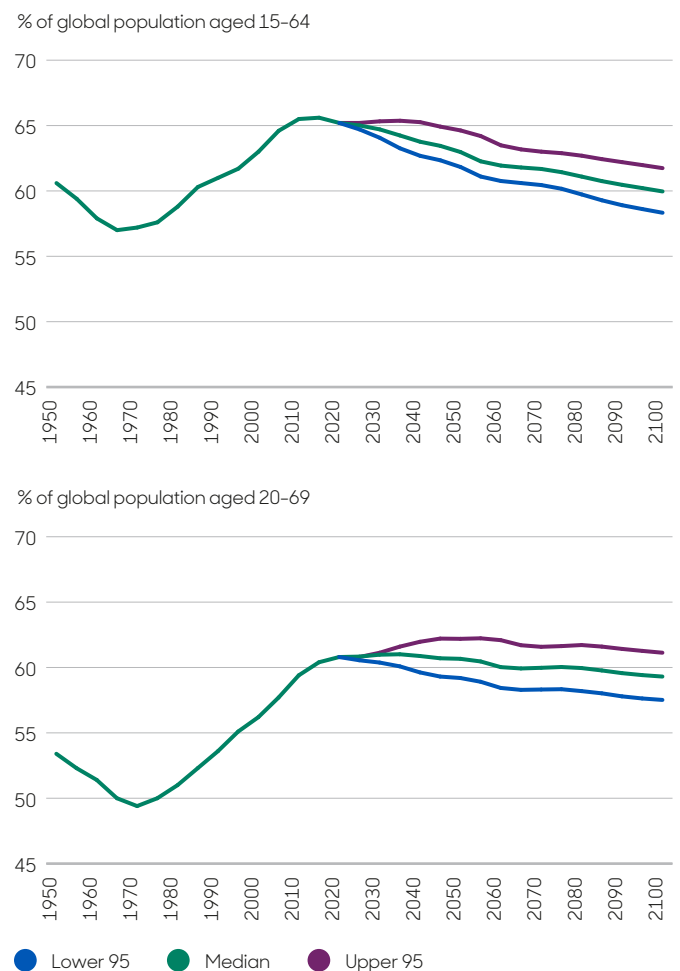
Source: abrdn, UN, March 2021.

We assume that this trend of rising participation among older age groups across EMs will continue over the next 10 years, in part as government policy has sought to raise retirement ages, motivated by the fiscal burdens of prolonged retirement (Chart 6, bottom panel).

Overall, this has made the distribution of workers older, which changes the dependency ratio profiles when calculated in per-worker space (i.e. ratio of workers to non-workers, rather than those aged 16–65 versus the rest).

Chart 7 shows that the change in the dependency ratio going forward when considered relative to workers is more favourable across the board. And framed in this way, dependency ratios will continue to fall in India over the next 30 years, rather than move adversely, while dependency ratios in emerging Asia and LatAm are little changed. Dependency ratios in advanced Asia, China, Europe and the Middle East remain unfavourable, but are rising by less.

Chart 6 – Changing patterns of labour force engagement has made the working-age population older and this trend looks set to continue, in part, as governments raise retirement ages

Participation rate, %

● 15–19   ● 20–24   ● 55–59   ● 60–64

Retirement age

● Current (retiring 2018)

● Future (entering the labour market in 2018)

Source: abrdn, UN, OECD. March 2021.

Chart 7 – Changes in dependency profiles are also not as extreme when considered versus workers

● % Change dependency ratios, 2020–2050: standard (16–65)

● % Change dependency ratios, 2020–2050: worker
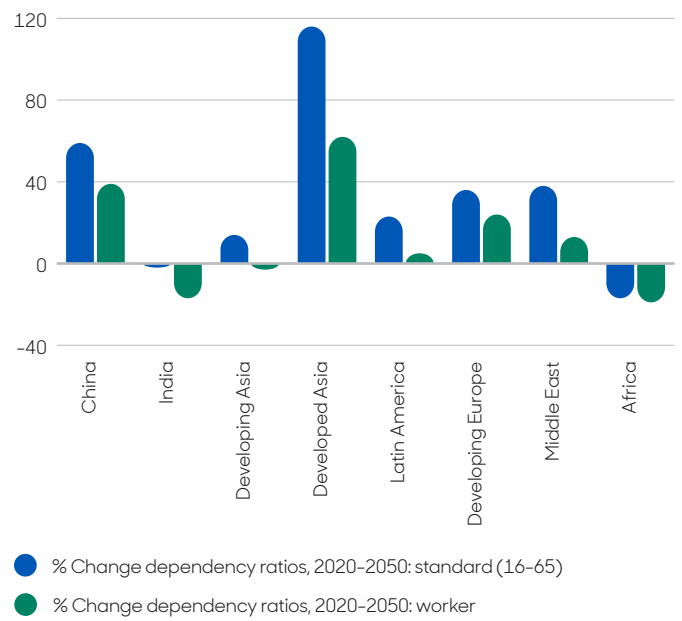
Source: abrdn, UN. March 2021.

Demographics are not destiny

Demographics will directly impact emerging market growth via employment trends, both in quantity and quality. We can account for both trends in employment and improving human capital via long-run growth projections derived from a 'production function', as well as considering the impact of alternative fertility and dependency scenarios. To complete the building blocks of long-run growth we must consider how productivity and capital deepening (physical and intangible) may evolve alongside the labour force. Figure 1 provides a stylised example, showing how demographics can interact, while Appendix 1 provides details underpinning the production function approach and the data used.

The long-run projections show that demographics will have a meaningful impact on emerging markets, but the impact in absolute and relative terms varies notably across regions and countries. It does not always conform to intuition either; for example, China's rapid aging and population decline (driven by the one-child policy which began in 1979) is sometimes touted by commentators as a major concern, but we find that it has only a modest influence – despite the striking swings in both total population and the numbers in the working-age brackets.

Figure 1 – The building blocks of long-run EM growth
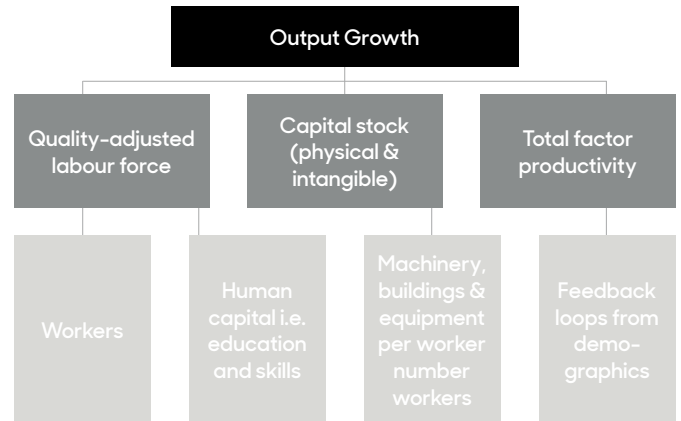
Source: abrdn. November 2021.

Across major EMs the boost from previously rising labour forces is fading fast. Over the next 30 years almost all EMs see a falling contribution from labour, with many countries facing a drag on potential growth as the number of workers falls. Developed Asia, China, Thailand, and most of Eastern Europe face demographic headwinds, while the positive contribution in LatAm fades close to zero. Only Developing Asia (ex. China and Thailand), the Middle East and Africa maintain material positive gains from the labour force (see Chart 8).

Chart 8 – The boost from labour force growth in EMs is fading fast in most countries
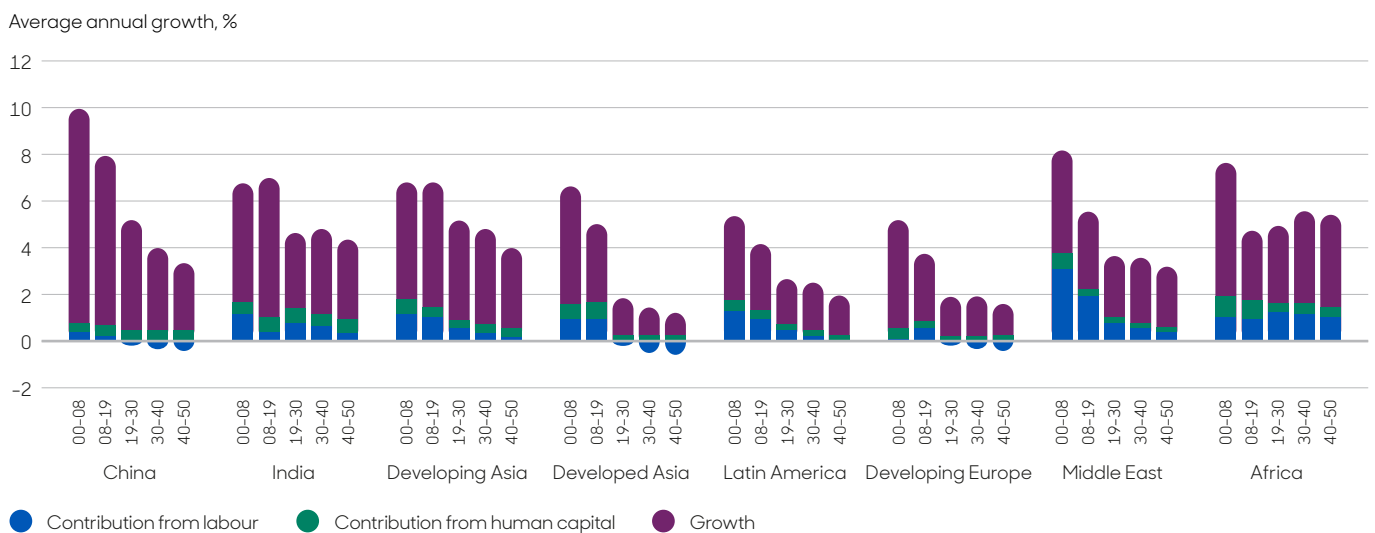
Average annual growth, %

Source: abrdn Research Institute, Haver, UN, Penn World Tables, OECD, Oxford Economics. November 2021.

Human capital still has room to grow, particularly in lower-income countries, and for many this is likely to offset the drag from having fewer workers (or from the slowing growth rate in the workforce). Human capital can be deepened as years of formal education rise (and while secondary education has made impressive progress, a gap remains between EM and DM), but it also reflects life-long education and technical skills which are harder to measure. We follow the Penn World Tables which estimates human capital using both rising years of schooling and returns to education.

Only Developed Asia and Eastern Europe are likely to see a negative contribution from labour and human capital combined, reflecting a combination of more adverse demographic outlooks and less scope for educational catch up. China could offset fewer workers with better-educated ones. Africa, and to a lesser extent India, should still benefit both from more workers and more capable workers.

Demographics is important, but it is clearly not destiny. Chart 8 also shows that quality-adjusted labour input (workers plus human capital) rarely explains more than a third of potential growth. For some fast-growing economies such as China or India, demographic shifts are relatively unimportant. In contrast, given low potential growth rates, this is much more important as a share of total growth for slow-growing EMs, for example Korea, or for regions which have had poor productivity performances, such as those in LatAm.

The remaining contribution to potential growth is explained by total factor productivity (TFP) and capital deepening, which are clearly also key determinants of growth. TFP is not directly observable, and is calculated as a residual within the production functions. As such, it is often referred to as a "measure of our ignorance", albeit still a useful one, when combined with knowledge of country's business cycles.

Mismeasurements in labour and capital inputs can bias TFP, and this bias is a bigger issue in EM than DM, given less complete data from national accounts and other sources. As an example, understating the contribution from workers (for example, if hours worked are rising with activity) can lead TFP to appear stronger than it really is, so it is important to use trend measures which adjust for potential biases introduced by cyclical positions.

Assessing how fast EMs could grow depends crucially on judgements for trend TFP and – as with any unobservable variable – this is particularly uncertain. Our projections typically allow for some recovery in TFP compared with the weakness seen in the post-Global Financial Crisis (GFC) period, but remain well short of rates achieved before 2009. We cross-check productivity assumptions relative to stages of development (with more developed EMs having slower productivity growth and vice versa) and also build in some long-term damage from the Covid-shock (typically around -3 to -5%).

Capital deepening is at least somewhat more observable than TFP, since investment data is available for major EMs in their national accounts. However, judgements must still be made on how investment changes the capital stock over time (i.e. the depreciation rate of existing buildings), plant & machinery versus the flow of new investment. Emerging markets have considerable investment and infrastructure needs (see Box 1), but one must also ensure that investment-to-GDP ratios evolve in a plausible manner given stages of development.

Box 1 – Building the future

Infrastructure needs in emerging markets reflect a combination of development needs. Demographics is one component of this; countries with rapidly growing populations need more transport, building and public service infrastructure, for example. But capital stock per worker is well below levels in developed markets; hence, even emerging markets with unfavourable demographics may still have considerable infrastructure needs to lay solid foundations for future growth.

Consistent with our long-run growth projections, we can break down the expected rise in countries' capital stocks (K) into of which (o/w): (i) capital per worker (K/L), and (ii) changes in the number of workers (L). Even for countries where labour forces are expected to fall over the next 30 years, we expect that growth will necessitate a large rise across all types of capital (buildings, plant & machinery, vehicles, software and ICT) on a per-worker basis that will easily offset any drag from having fewer workers (Chart A).

### Chart A – Capital stocks will rise the most in EM Asia
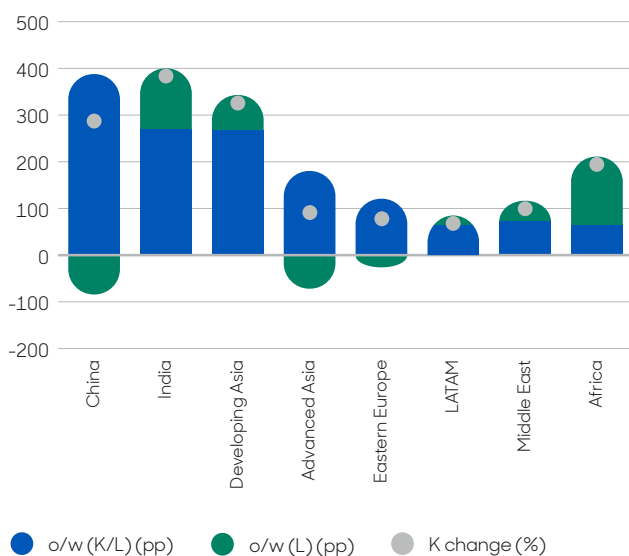
Source: abrdn, Haver, UN, Penn World Tables, OECD, Oxford Economics. June 2021.

Urbanisation rates provide another metric by which to judge how much infrastructure demand there may be. Chart B shows that less-developed countries typically still have relatively low urbanisation rates; as countries urbanise this should correspondingly drive considerable construction activity.

Chart B – Urbanisation provides a tailwind

Urbanisation (%) vs GDP per capita
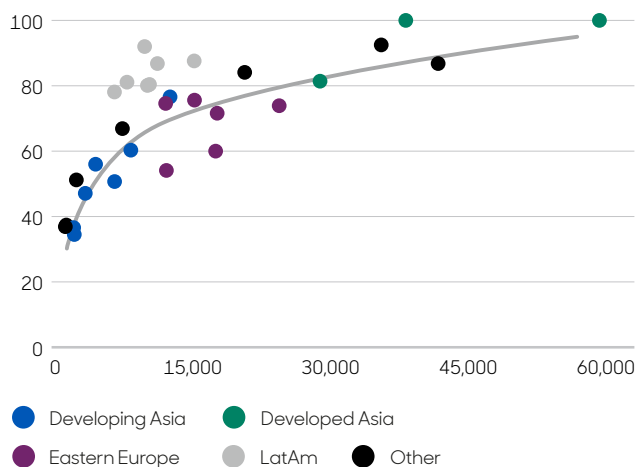
Source: abrdn, Haver, World Bank. March 2021.

There are of course risks which could reduce demand for certain types of infrastructure, and risks are not uniform across countries.

Chart B shows that Developing Asia has considerable scope to urbanise, while some of Eastern Europe is less urbanised given its stage of development than would be expected. LatAm, on the other hand, already has high urbanisation rates – similar to many developed countries – and this could potentially weigh on investment needs.

Capital per worker remains low in China, but there is a risk that China's investment-led growth model has front-run infrastructure demand; hence, when combined with a falling population it could be that hard infrastructure needs (roads, rail, housing) have less scope to expand. Whole-economy leverage also adds another unfavourable dimension.

That said, China – similar to other EMs – has a higher rate of depreciation than developed markets; hence, upgrades and maintenance needs will still need to be met, which suggests a substantial flow of investment. Indeed, our calculations suggest that major EM's capital stock could rise by $20 trillion in real terms by 2050 (2015 dollars, net). Clearly the investment flow required to achieve this net rise is of an order of magnitude higher.

A future paper will investigate the infrastructure needs of EMs in more detail

Demographics could create feedback loops, impacting productivity

There is a risk that this framework fails to capture the indirect endogenous links between demographics and growth. An aging population could weigh on growth through several channels which could amplify the direct effects of having fewer workers. Fiscal policy could become more austere as resources are diverted to rising healthcare costs and dissaving in the old age segment of the population could push interest rates higher, for example.

Studies have shown a hump-shaped relationship for individuals between age and productivity with productivity typically peaking around age 50; hence, this could indicate that an aging workforce may be associated with weaker productivity growth, avoiding the need to disentangle the multitude of channels. But even here, the micro-to-macro relationship is not clear cut. This dynamic could spur firms to invest more in productivity-enhancing technology, which could raise the output of the whole work force. Indeed, Acemoglu & Restrepo (2017) reveal a positive relationship between the use of industrial robots and the ratio of the working-age population above age 50 across almost 50 countries. This may be one reason why it is difficult to discern a clear negative relation between ageing societies and per-capita GDP growth.

A recent study by the Bertelsmann Institute (Kaniovski & Uri, 2019), suggests that overall, the negative effects from aging dominate the positive indirect effects from capital deepening on productivity for developed economies. While this study is focused on developed economies, the dynamics which this research considers are highly relevant in an EM context. We utilise some of the estimates derived from this work, adjust them and apply them in an emerging economy setting to create a gauge of risk from demographics to TFP (and hence growth).

In the demographic risk gauge, rising dependency ratios weigh on TFP (and vice versa), which would compound over time on GDP projections. High- and low-fertility population projections are associated with different paths for dependency ratios; hence, the risk gauge considers how an endogenous mechanism could impact TFP across both high- and low-population scenarios.

This suggests downside risks to GDP growth are most pronounced in Developed Asia, China, Thailand and UAE, while Eastern Europe and most countries in LatAm face modest risks (see Chart 9).

Of course, policy still matters. Demographics may be a bigger challenge for policymakers in Developed Asia, but these countries also have stronger institutions, hence, may be better placed to deal with demographic pressures. Considered in this way, potential endogenous feedback loops are only making the job of policymakers easier in India, Philippines, Pakistan, Nigeria and South Africa. Only time will tell if they are able to capitalise on this more favourable backdrop.

Chart 9 – Potential feedback loops from demographics to total factor productivity growth

Average impact on annual TFP growth, percentage points

Legend: ● High ● Low ● Difference
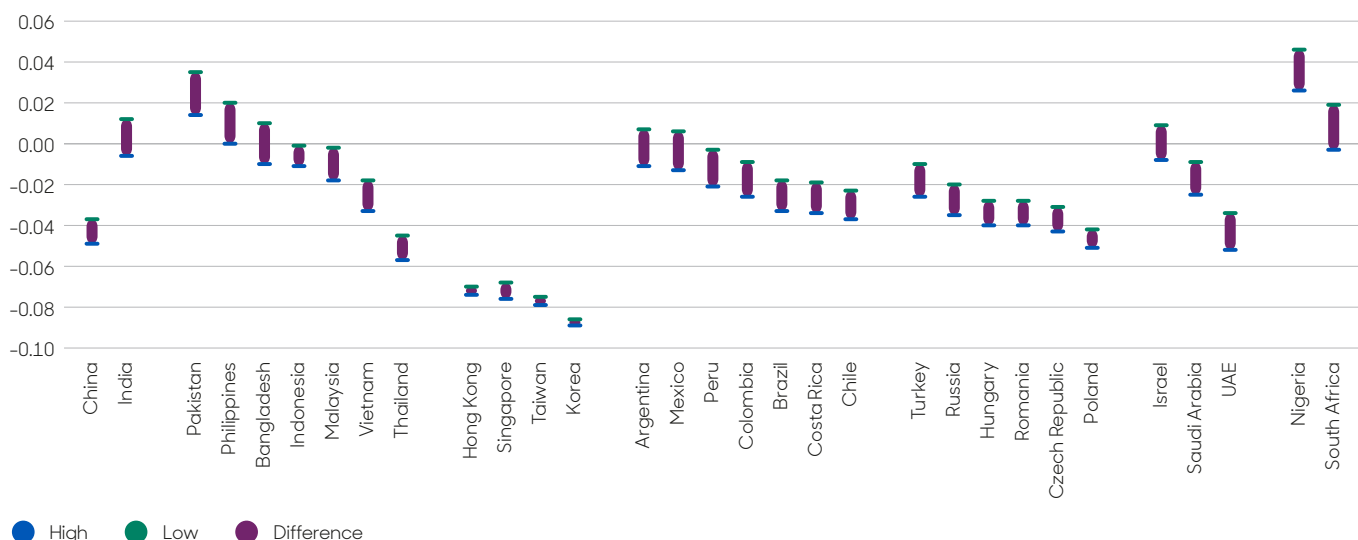
Source: abrdn Research Institute. November 2021.

Which EMs have the most- and least-favourable demographic backdrops?

Whether a country is well placed to benefit or suffer from its demographics can potentially be judged across several dimensions. As outlined above, the number of workers and their education are key determinants of long-run growth, while alternative fertility scenarios and potential feedback loops pose a spectrum of risks.

Table 1 provides a forward-looking assessment, ranking countries across three different dimensions:

- The contribution of labour (including human capital) to GDP growth.
- The 'bias' from alternative fertility scenarios, i.e., if the increase in a country's GDP in the high-fertility scenario exceeds the drop in its low-fertility scenario, it has a positive bias.
- The demographic risk gauge, showing the potential feedback from changing dependency ratios on TFP growth.

Table 1 – Africa stands out with the most favourable demographic backdrop across key dimensions

Country	Overall rank	Contribution to potential growth from quality-adjusted labour	% bias: high fertility + low fertility	Endogenous feedback impact	abrdn Research Institute Governance score
Nigeria	1	2.00	1.5%	0.04	65
South Africa	2	1.05	1.1%	0.01	50
Israel	3	0.91	1.4%	0.00	34
Pakistan	4	1.48	0.0%	0.02	117
Malaysia	5	0.89	1.9%	−0.01	74
Bangladesh	5	0.91	1.0%	0.00	118
Saudi Arabia	7	0.63	0.1%	−0.02	129
India	8	1.11	−1.2%	0.00	85
Philippines	9	1.00	−2.2%	0.01	87
Argentina	10	0.56	−1.0%	0.00	42
Mexico	11	0.57	−1.0%	0.00	82
Vietnam	11	0.49	−0.1%	−0.03	102
Costa Rica	13	0.38	−0.3%	−0.03	16
Indonesia	14	0.72	−3.3%	−0.01	56
Colombia	14	0.36	−0.8%	−0.02	75
Thailand	16	0.02	0.7%	−0.05	122
Peru	16	0.54	−1.9%	−0.01	67
Brazil	18	0.25	−0.9%	−0.03	72
Turkey	19	0.39	−1.4%	−0.02	127
Hungary	19	−0.24	0.3%	−0.03	79
United Arab Emirates	21	−0.07	−0.2%	−0.04	N/A
Poland	22	−0.31	0.5%	−0.05	35
Taiwan	23	−0.29	0.7%	−0.08	N/A
Hong Kong	23	−0.11	0.0%	−0.07	N/A
Chile	23	0.24	−1.0%	−0.03	25
Czech Republic	26	−0.14	−0.4%	−0.04	37
China	27	0.16	−0.9%	−0.04	130
Russia	27	−0.13	−0.9%	−0.03	109
Romania	29	−0.31	−0.4%	−0.03	55
Korea	30	−0.42	0.4%	−0.09	14
Singapore	30	−0.09	−0.4%	−0.07	58

Source: abrdn, November 2021.

A fourth item, the abrdn Research Institute governance score, is also shown, but is not included in the calculation. It provides another characteristic to gauge risks: those countries with better governance may be more likely to capture demographic dividends, or are less likely to be impacted by adverse trends.

Table 1 shows that African countries have the most favourable demographic characteristics. Developing Asia (ex. China) tends to rank fairly highly too, while some LatAm economies (Mexico, Argentina) rank fairly well since they have more favourable dependency profiles, thereby negating the risk of a negative feedback loop. Eastern Europe and Developed Asia generally score poorly.

Higher-income economies (unsurprisingly) typically have better governance scores, which could mitigate the risks from policy errors. And considering the other end of the ranking, some low-income EMs, such as Pakistan and Bangladesh, could be at risk of failing to capture their positive demographic outlook.

The governance score captures numerous 'G' characteristics within 'ESG' and for China the low ranking overall reflects very low scores for free elections and freedom of expression. As such we judge that it does not reflect Chinese institutional strength to deal with the demographic challenge; hence, would caution against using it to inform the balance of risks for China. A similar critique applies for some other EMs also; hence, why we do not directly consider the governance score when constructing the overall ranking. For more details on the abrdn Governance index please **see this paper**.

Which economies are likely to grow the most?

In absolute terms, we think that China and India will dominate the EM landscape in 2050 (see Table 2). Indonesia and Nigeria move most notably up the ranks, breaking in to the top five largest EMs. Vietnam and Pakistan are likely to be the biggest gainers amongst the smaller EMs (we expect they will rise from the bottom third to around the middle of the EM rankings) while the Philippines may also record an impressive rise, moving nine places up the ranks. In contrast, Developed Asia (ex. Taiwan), Eastern European and LatAm economies fare poorly, with only modest increases in the size of their economies projected over the next 30 years. The oil-dependent economies of Russia, Colombia and Saudi Arabia also all fall notably in the rankings.

Table 2 – China and India's share of EM GDP could rise 10 percentage points to over 60%; Asia is well placed

Country	GDP $tn, 2019	GDP per capita (2019)	Country	GDP $tn, 2050	GDP per capita (2050)	Rank
China	12.5	9,100	China	42.5	30,300	1
India	2.8	2,100	India	11.7	7,100	2
Brazil	1.8	8,600	Indonesia	3.3	10,000	3
Korea	1.6	32,400	Brazil	2.9	12,500	4
Russia	1.3	8,900	Nigeria	2.3	5,700	5
Mexico	1.3	9,700	Korea	2.2	46,700	6
Indonesia	1.0	3,900	Mexico	2.2	13,900	7
Turkey	0.9	10,900	Philippines	1.8	12,100	8
Colombia	0.7	14,700	Turkeys	1.7	17,700	9
Saudi Arabia	0.7	19,800	Russia	1.7	12,600	10
Argentina	0.6	12,900	Colombia	1.3	23,900	11
Taiwan	0.6	24,400	Saudi Arabia	1.2	27,000	12
Poland	0.6	15,100	Thailand	1.2	17,900	13
Nigeria	0.5	2,600	Vietnam	1.2	10,700	14
Thailand	0.5	6,900	Malaysia	1.1	27,700	15
United Arab Emirates	0.4	40,000	Taiwan	1.1	47,700	16
Philippines	0.4	3,600	Pakistan	1.1	3,200	17
Malaysia	0.3	11,200	Argentina	1.0	18,500	18
Israel	0.3	41,200	Bangladesh	0.9	4,900	19
Singapore	0.3	58,800	Poland	0.9	27,900	20
Hong Kong	0.3	42,800	United Arab Emirates	0.8	54,400	21
South Africa	0.3	5,600	Israel	0.8	60,100	22
Pakistan	0.3	1,500	South Africa	0.7	9,500	23
Vietnam	0.3	3,300	Peru	0.5	12,100	24
Chile	0.3	13,600	Singapore	0.5	72,700	25
Bangladesh	0.3	1,600	Hong Kong	0.4	55,100	26
Peru	0.2	6,700	Chile	0.4	21,000	27
Romania	0.2	11,300	Czech Republic	0.4	37,400	28
Czech Republic	0.2	20,200	Romania	0.4	21,900	29
Hungary	0.1	15,300	Hungary	0.2	24,400	30
Costa Rica	0.1	12,600	Costa Rica	0.1	20,800	31

Source: abrdn, November 2021.

Only China is likely to catch up with the US economy in absolute terms, potentially eclipsing the US between 2030 and 2035. Of course, this is not guaranteed; China has well-documented vulnerabilities (Dieppe, 2018 and Gilhooly, 2018). But even by 2050, Chinese per-capita income is likely to remain well below that of the US. In theory, this gap in average living standards makes it easier for China to continue to grow at fairly robust rates, although for China, and other EMs, convergence is conditional on a range of factors such as institutional strength and the rule of law.

Should the Chinese and Indian economies expand as we project, the size of their financial and consumer markets will also rise notably. As a simple thought experiment, holding market capitalisation to GDP fixed, equity market capitalisation could expand from $8.5 trillion now to almost $30 trillion in China by 2050, and go from $2.2 trillion to over $9 trillion in India – financial deepening could, of course, push these figures higher. And the rise of middle classes in emerging markets will also become a dominant force shaping global trends. Chinese consumers are expected to be increasingly important as China gradually pivots away from its investment-intensive growth model. Indeed, by 2040, its consumer market may be approaching the size of the US market and by 2050 it could be 20% bigger, see Box 2 for more details.

Box 2 – The global middle class: onwards and upwards

Periods of consistently high growth among previously low-income countries have helped reduce poverty rates and propel a huge number of people into the "middle class". While the threshold to be categorised as middle class varies widely across emerging markets – as it is a relative definition – there is no denying that the median income in most countries has increased substantially (Chart C). Growth among the top decile of income earners has been even more remarkable, widening inequality within countries.

Chart C – Rise in median income

USD
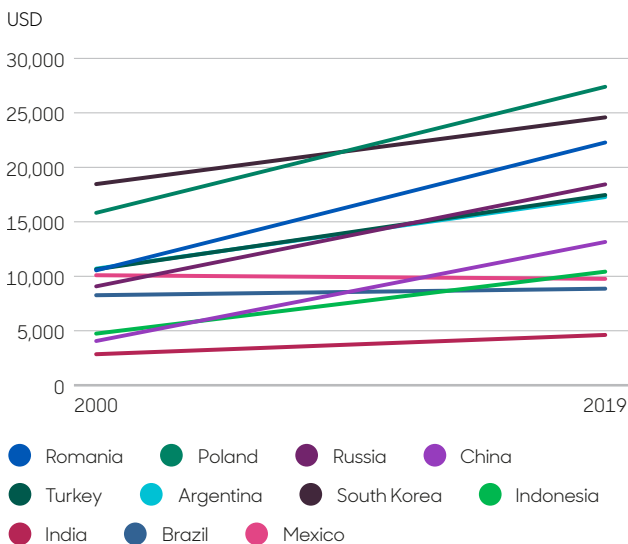
Source: Haver. March 2021.

The criteria to define the middle class can be based on social or cultural values, educational attainments or income thresholds. Kharas (OECD,2010) uses a daily expenditure threshold range of USD10–USD100. According to this criterion, 3 billion people were classified as middle class in 2015 and a majority of the global population is expected to be middle class by 2030 (Chart D).

With the rise in income levels associated with a growing middle class, the size of the consumer market is expected to undergo exceptional growth. Using our long term growth projections we can estimate the size of consumption in major emerging markets and see how they stack up against the US.

Chart D – Asia set to drive the emergence of a global middle class

Size of the middle class by region (millions)
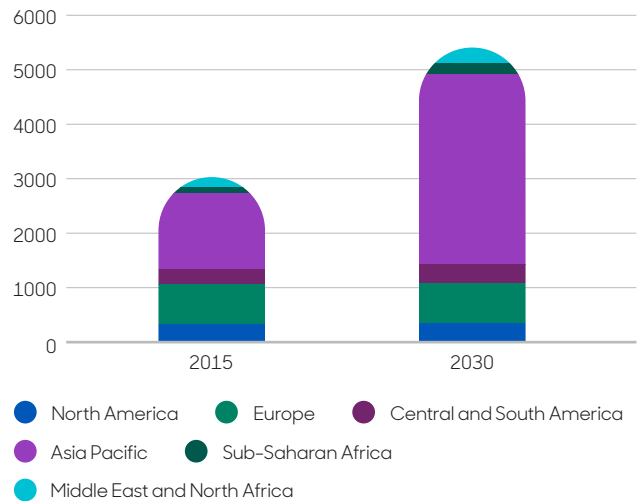
Source: Kharas (OECD, 2010).

Not only is spending power set to rise across developing countries, but consumer preferences are expected to change as well.

Chinese consumers already play an important part in global consumer demand and are expected to gain further clout as China gradually pivots away from its investment-intensive model to one that is more consumption led. By 2042, the Chinese market may have overtaken the US and by 2050 it could be 20% bigger than its US counterpart. EM ex. China and India may also be about as large as the US market by 2050 (Chart E).

Chart E – China set to overtake US as the largest consumer market

Size of consumer market ($ trillion)
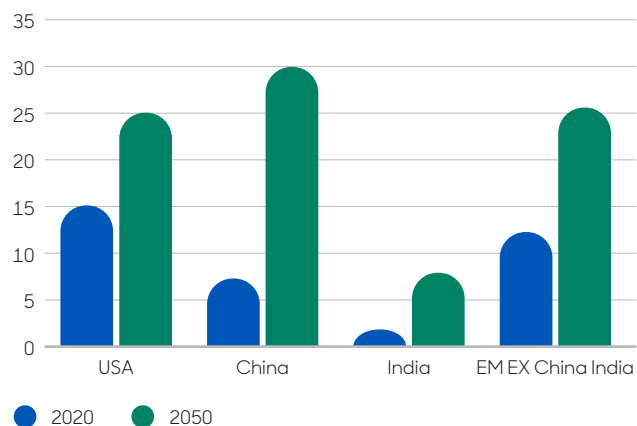
Source: abrdn, Haver. June 2021.

Chart F shows the distribution of consumption by different product categories in lower-middle, upper-middle and high-income category countries.

As income levels rise in lower income countries, one can expect the composition of consumption to converge towards that of high/middle-income countries. This means the share of expenditure on essentials, such as food and clothing, should fall, while the share of expenditure on housing, healthcare, transport and personal care should rise.

Chart F – Consumer profiles vary as countries develop and incomes rise

%
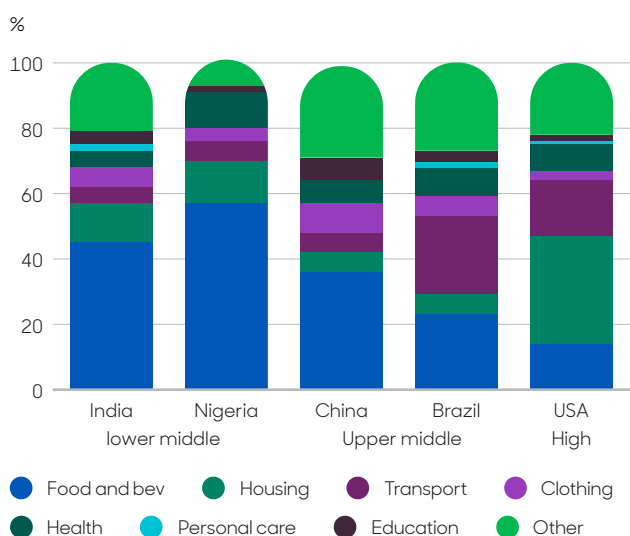
Source: abrdn, Haver, U.S. Bureau of Labor Statistics, OECD. June 2021.

Additionally, the shifting composition of demographics in emerging markets towards fewer younger people and more people above the age of 25 will serve to amplify some of these changes in consumer preferences.

Unfortunately, we have very little data on how spending patterns vary by age in emerging markets. However, using the US Consumer Expenditure Survey as a guide, we can infer that as people age in EMs, they may also spend less on essentials such as food, transportation and education, and spend more on healthcare and entertainment. Demographic shifts therefore may amplify some of the shifts associated with development: boosting consumption of housing in particular.

Finally, we can get a sense of just how much per-capita spending on different product categories could rise, consistent with our long-term per- capita income projections and data on the consumption composition by stage of development.

Chart G – Spending on food, housing and discretionary items set to rise sharply in China

USD
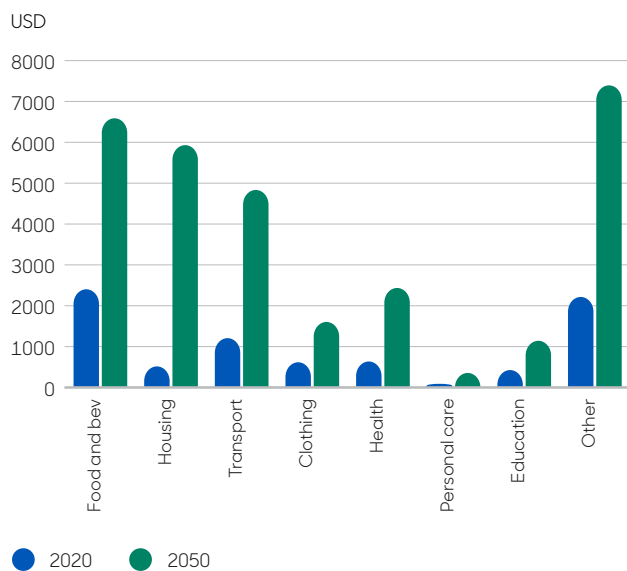
Source: abrdn, Haver. June 2021.

In China's case, per-capita spending on food could rise by $4000 and spending on housing could increase by $5000, as per capita GDP rises between 2020 and 2050 (Chart G).

The global middle class of 2050 will thus be more geographically diverse, with emerging markets accounting for much more of the centre of gravity within global consumption.

Of course, while we pencil in only a relatively modest degree of convergence in our growth projections, there is a risk that even this fails to materialise. Large boom-bust cycles or periods of political uncertainty can significantly weigh on convergence prospects. Which is why stable, pro-reform governments are necessary in EMs to grow and sustain a large middle class.

Our analysis suggests that convergence prospects remain fairly bleak, even assuming some recovery in productivity compared to the post-GFC period: few countries are catching up to the US in per-capita terms. Such a result is broadly in-line with other studies, which often project low degrees of convergence (Dieppe, 2020). Chart 10 shows that we think Developing Asia will converge the most, while a selection of other countries such as: Taiwan, Poland, Czech Republic, and Romania could also perform relatively well.

Chart 10 – The path for convergence towards US living standards appears long and difficult

Per capita income, relative to the United States (%)
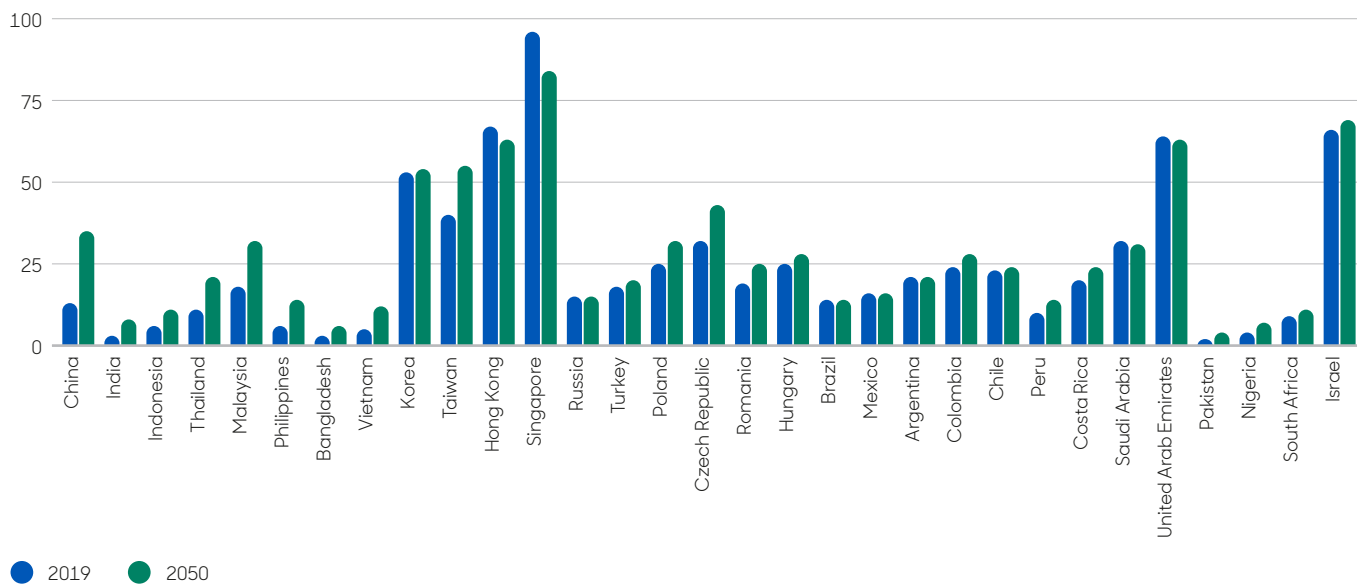
● 2019   ● 2050

Source: abrdn Research Institute, Haver, UN, Penn World Tables, OECD, Oxford Economics. November 2021.

Conclusions

In this paper, we have shown how demographics are set to drive dramatic changes across emerging markets, with shrinking labour forces and rising dependency ratios a common feature as 'demographic dividends' are largely exhausted.

A detailed examination that looks beyond the headlines reveals several important underlying trends, which help to provide a more nuanced understanding of the outlook and risks. In particular, the slowdown in the growth of working-age populations is likely to be offset in many countries by rising labour force participation rates of older workers, while education can help offset fewer workers with better educated ones.

On the whole, risks seem tilted to the downside. First, population trends seem likely to be tilted towards central and low-fertility scenarios. Secondly, the potential for an endogenous feedback loop between aging populations and total factor productivity is negative for two thirds of major EMs.

Our central case is one of cautious optimism. Relatively few EMs are making significant strides in catching up with the US over the next 30 years, but China and India increasingly dominate the EM and global economic landscape. Moreover, the change in the composition of growth is no less striking, with EM middle classes and consumers set to rise notably as a share of global consumption.

All of this suggests that EM demographics are set to impact the investment landscape for decades to come. And this 'in-focus' paper has only outlined one aspect. Demographics is an important driver of equilibrium interest rates, which we consider in the next instalment of EM demographics 'in focus'.
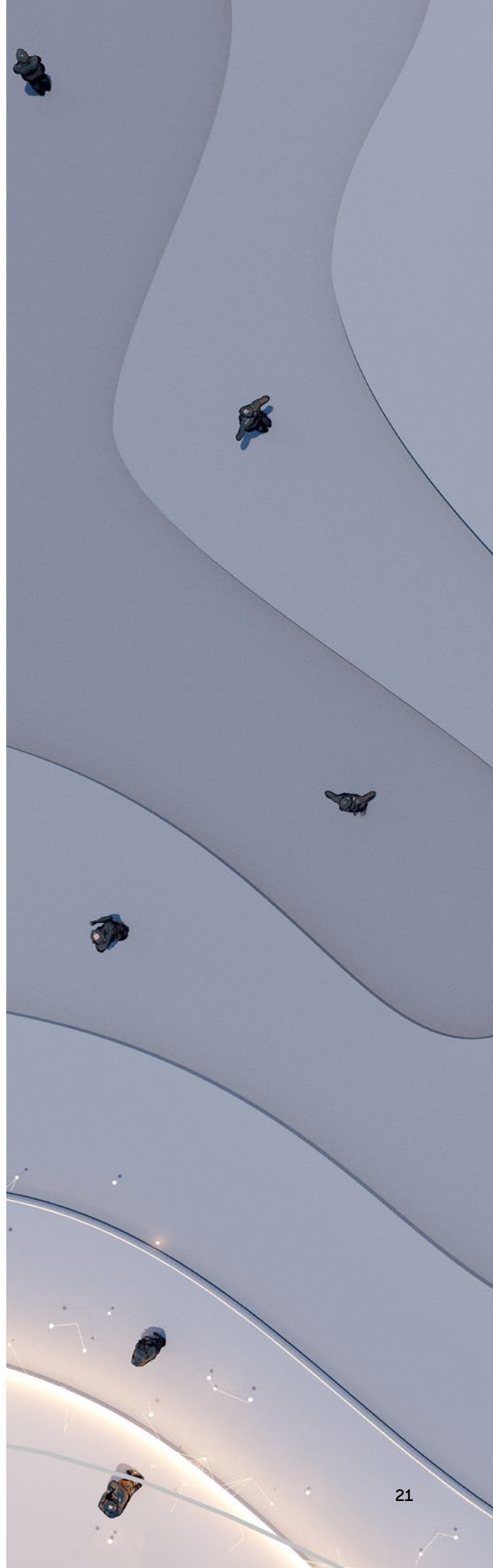
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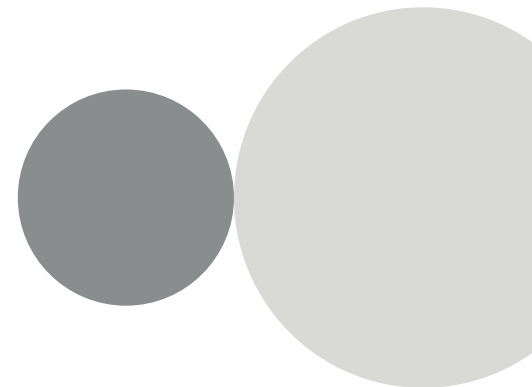Kharas (OECD,2010): "The emerging middle class in developing economies", OECD: **https://www.oecd.org/dev/44457738.pdf**

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Appendix: Decomposing the drivers of growth and creating projections

The process of explaining the drivers of historic GDP growth and then projecting forward the path of growth for the 30 countries in our paper can be divided into two distinct phases. The first involves breaking down GDP growth into the contribution from different factors of production (labour, capital and productivity) and the second involves projecting forward estimates of these factors to get estimates of how economies could evolve out to 2050.

1. Estimating the contribution to GDP from the factors of production

To assign contributions from the factors of production we first calculate Cobb–Douglas production functions:

$$Y_t = A_t * K_t^x * (L_t * h_t)^{(1-x)} \qquad (1)$$

Here, Y_t is real GDP, A_t is total factor productivity (TFP), K_t is the capital stock, L_t is the labour force and h_t is human capital. x represents the capital share of output and correspondingly (1–x) is the labour share.

Variables are put into natural logarithms, such that equation (1) is transformed to:

$$\hat{Y}_t = \hat{A}_t + x \hat{K}_t + (1-x) * \hat{L}_t + (1-x) * \hat{h}_t \qquad (2)$$

In terms of the inputs, Real GDP and estimates of the labour force are readily available for most EMs, and where data is scarce, we utilise Oxford Economics' database to expand our time series.

To ensure we are accounting for both the quality and quantity of labour we use the human capital indices from the Penn World Tables (PWT).

x is also informed by the PWT, typically taking a value of between 0.5 to 0.6, consistent with emerging markets typically having a lower labour share of income than developed markets.

Estimates of the capital stock are available from the PWT, but we choose to calculate these ourselves using the Perpetual Inventory Method (PIM). While we cross-check our figures against those in the PWT, and ensure that the capital stock to GDP ratio does not accelerate excessively (which would be implausible, and moreover could be a sign of impending crisis in the extreme), calculating the capital stock ourselves is necessary for the projections in the second stage.

The capital stock is calculated as the previous period's capital adjusted for depreciation (K_{t-1}) (reflecting wear and tear and the process of equipment becoming obsolete, for example) plus the current period's investment (I_t), in real terms:

$$(K_t) = (1 - \delta)(K_{t-1}) + (I_t) \qquad (3)$$

Finally, since we are unable to observe TFP independently, but have all the other figures, A_t is calculated as the residual from the other inputs.

Now that we have a full suite of inputs, we can consider the likely trend variables (denoted by a *). The trend estimates of the capital stock and of human capital are assumed to equal their actual values, as is standard economic practice. Trend labour force growth and trend TFP are initially calculated as Hodrick–Prescott –filtered estimates, but then refined such that the overall output gap profile conforms to our understanding of the individual EMs economic history and adjusts for the pitfalls of deriving productivity as a residual (inputs can be understated in a boom and overstated in a crisis, for example). Potential growth $\tilde{Y}_t^*$ is therefore:

$$\hat{\tilde{Y}}_t^* = \tilde{A}_t + x \tilde{K}_t^* + (1-x)\tilde{L}_t^* + (1-x) * \tilde{h}_t \qquad (4)$$

2. Creating long-run GDP projections

UN population data provides a fairly robust estimate of how population is likely to evolve. For smaller economies, such as some in Eastern Europe, there is a risk that migration flows result in larger–than–expected changes in overall population, while for larger economies migration flows have less potential to create a surprise.

We can utilise population projections by 5–year age cohorts ($N_{i,t}$) and combine them with estimates of labour force participation ($LFPR_{i,t}$) and unemployment ($U_{i,t}$) from the OECD (also in 5–year groups) to create a measure of trend labour force.[3] This also allows us to consider how participation and engagement trends – such as rising participation of older cohorts, and the combination of falling participation and rising unemployment in younger age cohorts – may affect labour force growth across the UN's central, high- and low–fertility scenarios. For our central case projections, we assume a modest rise in participation rates for older age groups and a decline for younger groups for the next 10 years, beyond which, we

[3] Ideally, we would also consider trends in hours worked, but this is not feasible in EMs due to data limitations. OECD participation and unemployment data does not cover all major EMs, where not available we have used national sources or applied the rates of other countries of close geographical proximity.

hold participation rates fixed. Equation (5) sets out the calculation, with age cohorts typically spanning groups 15-19 to 65-69 (i to n):

$$L_t^* = \sum_i^n [N_{i,t} * LFPR_{i,t} * (1-U_{i,t})] \qquad (5)$$

For human capital, we assume that progress towards developed-market levels follows a concave path: when EMs are less developed, we assume larger gains, while higher income EMs converge more slowly. We cross-check our human-capital projections against their implied stages of development. While this projection may seem simplistic, it does capture the long-term trends which have seen steady gains in human capital, even throughout multiple boom-and-bust economic cycles.

To project the capital stock, we make use of the investment-to-GDP ratio and (again) ensure consistency with the stage of development, and make sure that the capital-stock-to-GDP ratio only rises modestly and that the output gap converges to zero within five years or so. For most EMs the growth path assumes that the investment to GDP ratio gradually falls, consistent with some rebalancing towards consumption as the primary engine of growth – again, the pace of this change is informed by the stage of development, but also considers country-specific factors, for example China's high savings rate. In the early stages, this is an iterative process to ensure consistency, and depends on the overall GDP projection, which must also include taking a view on trend TFP.

TFP is the hardest and potentially most controversial judgement; as a residual it is a "measure of our ignorance". It has also shown wild swings, rising rapidly before the GFC and falling notably post-GFC. Indeed, in some EMs – such as Brazil – TFP has recorded long periods of negative growth as the economy's productive capacity declined.

For most EMs, we average through the boom and bust in TFP, assuming that productivity is unlikely to return to pre-GFC rates but is likely to be somewhat better than seen in the past 10 years. As noted in the main text, our projections are typically only consistent with modest convergence towards US per capita, with the pace of TFP growth also benchmarked against stage of development.
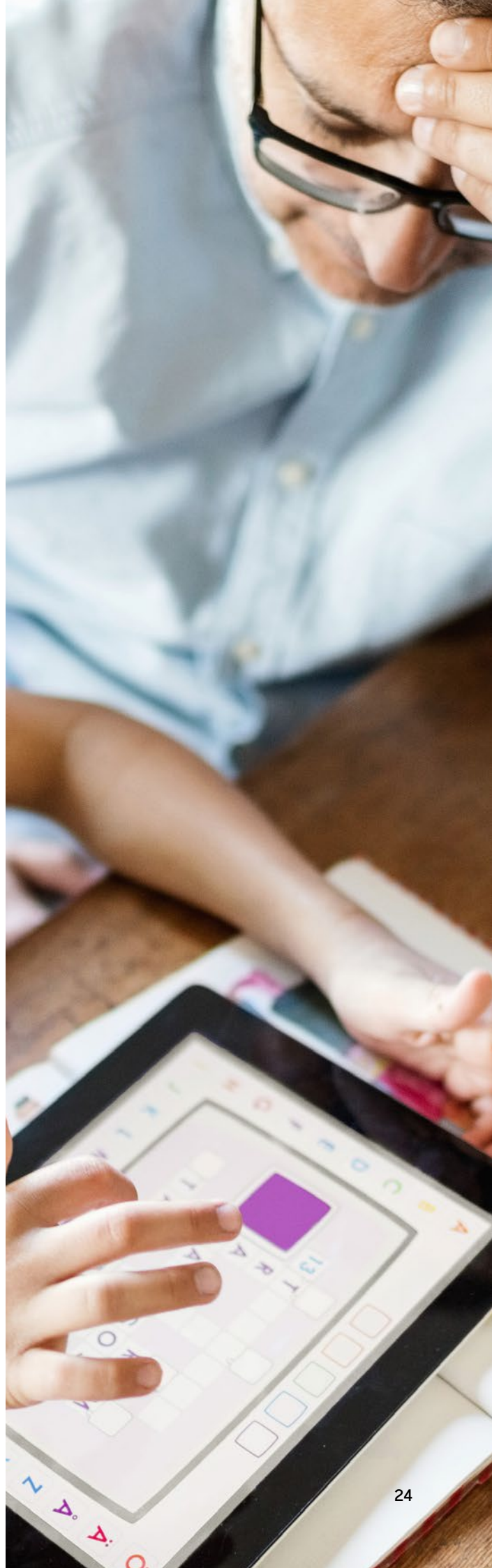
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