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How global demographics shape real estate investment opportunities

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What factors will drive real estate investment opportunities going forward, and where will those opportunities emerge? From a macro perspective, we believe the most influential factors will be ones that alter the structure of whole economies – factors like disruptive technologies, climate change, regulatory shifts, and arguably the most determinative of all: demographics.

You may know the old quote, "Demography is destiny,"¹ and as far as any one factor goes toward setting the destiny of real estate demand, demographics goes a long way. Demographics reflect embedded longer-term drivers that are "destiny" in that they can be seen coming from a distance but are typically difficult to change. For that reason, this paper kicks off a longer series that explores the effects of demographics on real estate demand. And we will start with how changes in **global demographics** can shape real estate investment opportunities.

Whole books are written about global demographics. How can one short paper fully cover this topic? It can't, and it won't. Instead, we'll identify some *drivers* across global demographics that we believe are likely to stimulate real estate investment opportunities, and we'll identify the types of investment *opportunities* that we expect for global real estate based on those drivers.

Let's summarize those drivers and opportunities:

Drivers of real estate investment opportunity arising from global demographic trends:

- 1. Population versus wealth: Real estate opportunities arise from the combination of economic growth² and population growth³.
- **2. Growth versus change:** Slow global population growth in large economies means that many opportunities will be driven by shifting trends within those economies.
- **3. Migration:** Net migration⁴ usually reflects seeking of opportunities and stability.
- 4. Aging: Real estate needs will likely shift as dependency intensifies.
- 5. Income: Wage and labor cost escalation has eroded China's former status as the world's leading low-cost manufacturer, which is contributing to global supply chain diversification⁵.

Opportunities for real estate investment expected to emerge from these drivers:

- 1. Wealth and migration together multiply opportunities: Places with higher wealth tend to foster positive migration, which in turn drives more diverse investment opportunities.
- 2. Seniors are driving property demand in higher income economies: Swelling senior population means surging demand for senior housing, medical office, and life science.
- **3. One roof, multiple generations:** Rising dependency, weakening affordability and immigration could spur multigenerational housing in wealthier countries.
- **4.** Live-work solutions: Rising dependency of seniors requires workers to double as caregivers, reinforcing the need for work flexibility and hybrid work environments. These needs will likely reinforce the trend toward urbanization as work opportunities concentrate within cities.
- 5. Housing market to experience less growth, more churn: Expect home sales in advanced economies to be affected by competing trends slower population growth rates will moderate the pace of home sales, whereas wealth transference from older seniors to younger generations may spur home sales and related purchasing.
- **6. New math means new configuration of global supply chains:** China's labor cost escalation and population reduction is compelling a gradual yet imperative diversification of production activity to other countries.

The balance of this paper provides more background on the drivers. A grasp of the drivers is essential for imagining how these factors work together to spur real estate investment opportunities.

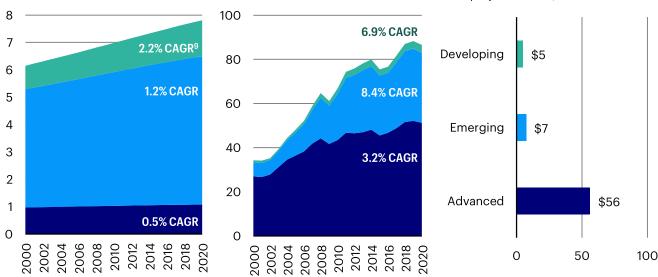
Drivers

Population vs. wealth: The study of population and the components of population change (i.e., births, deaths, and net migration) should ideally inform geopolitical and humanitarian decisions. But determining the possible investment implications of changing population trends must be coupled with an understanding of the wealth dynamics underpinning that population. This necessity is evident in viewing the mismatched growth trends between population and gross domestic product (GDP)⁶ across three categories of economic development progress defined by the International Monetary Fund (IMF): Advanced, Emerging, and Developing (see Figure 1).⁷

- From 2000 to 2020, Advanced Economies accounted for less than 7% of the world's population growth while driving 46% of the world's nominal GDP growth⁶.
- During the same period, Emerging Economies, the next level of economic development progress, accounted for 66% of the world's population growth and nearly 49% of GDP growth.
- Developing Economies during this period accounted for 27% of the world's population growth but only 5% of GDP growth.

Real estate opportunities arise from economic growth and population growth Advanced Emerging Developing Total population Gross domestic product Gro 2000-2020, # in billions 2000-2020, USD in trillions 202 8 100 100

Gross domestic product per capita⁸ 2023 projection, US\$ in thousands



CAGR: Compound annual growth rate

Figure 1: Population versus wealth

Sources: Invesco Real Estate, utilizing data from Oxford Economics as of January 2024. There is no guarantee the projections provided will come to pass. Forward-looking statements are not guarantees of future results. They involve risks, uncertainties and assumptions, there can be no assurance that actual results will not differ materially from expectations.

While GDP is not a complete measure of wealth, it does provide useful context for identifying differences across economies. Expect real estate investment opportunities to be more plentiful and diverse in Advanced Economies which tend to have larger economies and higher per capita output.

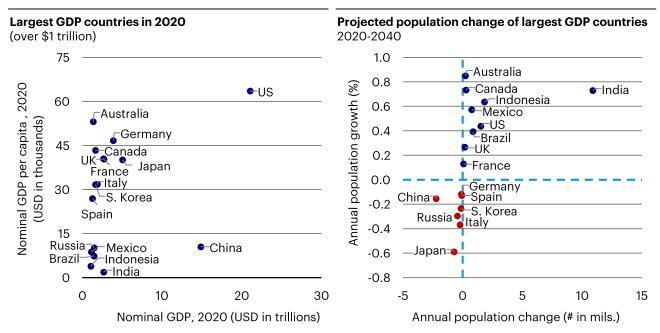
We also expect Emerging Economies to present real estate investment opportunities, but not all Emerging Economies are alike. An understanding of governance quality and trade relationships with Advanced Economies is a place to start for discerning differences in real estate investment opportunity potential among Emerging Economies. Furthermore, wealth creation of Emerging Economies lags substantially behind that of Advanced Economies, as seen in the sharp differences in respective GDP per capita. Therefore, Emerging Economies need to be evaluated for the propensity to experience a scaling of GDP growth per capita.



Growth vs. change: Most of the world's largest economies have experienced slow to declining population growth over the past two decades¹⁰, and those trends are likely to persist (see Figure 2). Yet, as already suggested, the abundance or lack of population growth alone cannot identify the breadth or variety of real estate investment opportunities.

Figure 2: Growth versus change

Population growth in most large economies will be low; look to shifts within



Sources: Invesco Real Estate, using data from the International Monetary Fund's World Economic Outlook, October 2023. Countries shown are estimated to have had 2020 GDP levels at or above \$1 trillion. There is no guarantee the projections provided will come to pass. Forward-looking statements are not guarantees of future results. They involve risks, uncertainties and assumptions, there can be no assurance that actual results will not differ materially from expectations.

- Some large economies with high GDP per capita (e.g., UK, France, Germany, Spain, Japan) should expect the generation of wealth-driven real estate investment opportunities, even where population lacks dynamic growth.
- Other large economies with lower GDP per capita (e.g., Mexico, Indonesia, Brazil) could experience attractive economic growth going forward depending on the strength of their trade relationships with more dominant economies.
- China and India present some unique circumstances:
 - China's economy is large and growing, yet its population loss could reach or exceed 50 million people over the next 20 years.¹⁰ Much of China's real estate investment opportunities are expected to arise from change within its own economy as the nation adjusts to a smaller population.
- India's sizable economy consists of the lowest GDP per capita among the world's largest economies. Massive population growth is anticipated to hold potential for creating real estate investment opportunities, but advancements in economic development will need to occur to realize that potential.
- The greatest amount and diversity of real estate investment opportunities will likely be found in larger economies with higher GDP per capita and comparatively higher levels of population growth compared to other large economies (save for India). This combination of market size, wealth, and growth, particularly growth driven by migration, are catalysts for internal economic shifts that tend to create real estate opportunities. These economies include the United States, Australia, and Canada.



Migration: Much has been made so far about the limitations of population growth as a sole indicator of real estate investment opportunity potential. But one component of population change provides quite a bit of useful information about opportunity potential, and that component is net migration. Unlike natural components of population change (i.e., births and deaths), net migration represents people choosing to leave one country and move to another (as well as movement within a country). And most people who migrate are in search of better living conditions and economic opportunities. When millions of migration decisions are aggregated to the country level, it provides a useful indicator of how people are voting with their feet (see Figure 3).

Figure 3: Migration

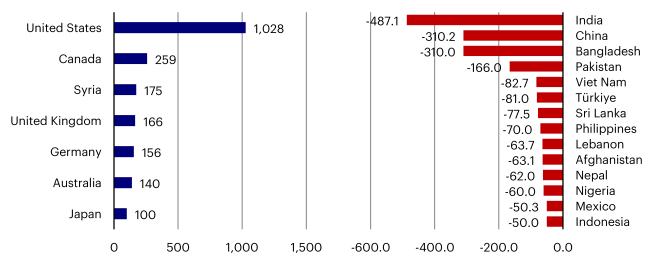
Net migration usually reflects seeking of opportunities and stability

Top countries for projected net migration

Median annual projection, 2020 to 2040 (# in thousands) Represents 2/3's of positive net migration globally

Bottom countries for projected net migration

Median annual projection, 2020 to 2040 (# in thousands) Represents 2/3's of negative net migration globally



Sources: Invesco Real Estate, using data from the United Nations' World Population Prospects 2022, median projection scenario. Not included on the list above is the United Nation's population growth outlook for Syria of 175,000 people from 2020 to 2040. This outlook assumes a return of Syrians to their home country after a violence-driven mass outmigration during part of the prior decade. This outlook carries a high level of uncertainty. There is no guarantee the projections provided will come to pass. Forward-looking statements are not guarantees of future results. They involve risks, uncertainties and assumptions, there can be no assurance that actual results will not differ materially from expectations.

Positive net migration for the next two decades is expected to be led by the United States (6% of 2020 population), followed by several other advanced economies including Canada (14%), the United Kingdom (5%), Germany (4%), Australia (11%), and Japan (<2%). Positive net migration combined with economic size and wealth per capita form a higher potential for real estate investment opportunities in these countries. Several smaller advanced economies are projected by the United Nations to experience high net migration over the next two decades as a percent of 2020 population including Norway (10%), Singapore (9%), Denmark (7%), and Finland, Hong Kong, and Belgium (each 5%).

Negative net migration for the next two decades is expected to be led by India, which ironically is also expected to experience some of the strongest overall population growth globally, owed largely to the nation's high birth rate. To be a leader in population growth and a leader in outmigration sends a cautious signal with respect to real estate investment opportunities.

China, Bangladesh, and Pakistan also top the list of negative net migration countries projected over the next two decades. China's predicament of declining overall population combined with outmigration are preconditions for potentially substantial social and economic change over the next two decades in one of the world's largest economies. While disruption of this sort can lead to real estate investment opportunities, risks tend to be elevated and sometimes take the form of some locations consolidating population and wealth at the expense of other locations.

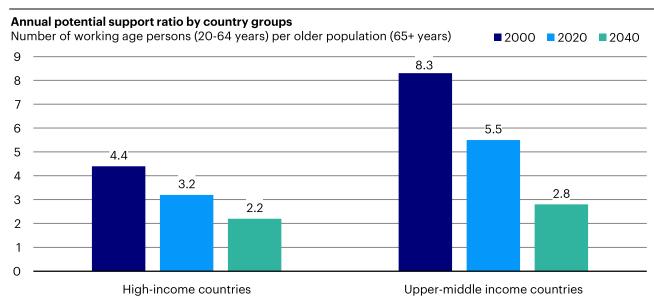


Aging: Global population on average is growing older. And unlike other demographic trends, the aging trend pervades most countries regardless of economic size, wealth levels, or other factors. Material growth of seniors population in advanced economies and associated medical needs are boosting property demand for senior housing, medical office, and life science buildings.

But growth of seniors population is not the only aging trend to impact real estate demand. Reduced birth rates and longer life expectancies are driving the aging trend. And among many high-income and uppermiddle income countries¹¹, birth rates have dropped below replacement rates over recent decades. This has caused the ratio of working age population (say, 20 to 64 years old) relative to the senior population (65 years and older) to shrink (see Figure 4). Known as the Potential Support Ratio, this measurement of senior dependency on adults in their working years is expected to fall below 3.0 in the next two decades, compared to much higher ratios at the start of this century. Said differently, senior dependency upon the working age population will intensify, and this could drive some significant real estate demand shifts, including greater demand for multigenerational housing (spurred also by immigration) and affirmation of flex work trends and hybrid office practices.

Figure 4: Aging

Real estate needs will likely shift as dependency intensifies

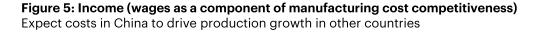


Sources: Invesco Real Estate, using data from the United Nations' World Population Prospects 2022, median projection scenario. There is no guarantee the projections provided will come to pass. Forward-looking statements are not guarantees of future results. They involve risks, uncertainties and assumptions, there can be no assurance that actual results will not differ materially from expectations.

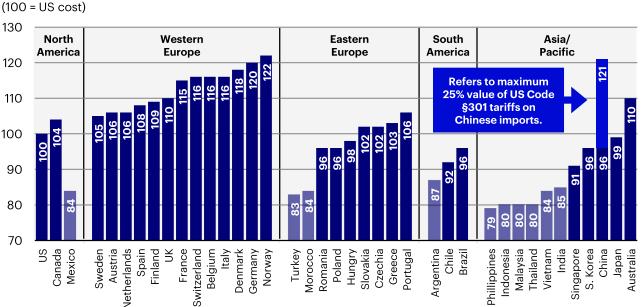


Income: Country-level personal income can be viewed from at least two perspectives. The first is as a proxy for consumer purchasing power¹², which tends to align closely on a comparative basis to gross domestic product. The second is as a component of business costs, particularly production costs.

Competitive advantage remains a driving principle in the evolution of supply chains and centers of production, and over several decades the advantage of low labor costs, rapid population growth, accelerated infrastructure development, and access to natural resources has accrued to the benefit of China. But that equation is changing with respect to labor supply (see the previously mentioned point about China's declining population going forward) and labor costs. Unlike conditions as recently as a decade ago, China's current combined manufacturing and distribution costs of labor, logistics, and energy are substantially higher than other prominent production markets in East Asia and Mexico. And when tariffs on technology-oriented products are considered, China's combined costs have soared above that of most other countries worldwide (see Figure 5). Clearly, China is no longer the world's low-cost provider for manufacturing, and this shift will likely lead to supply-chain related opportunities for real estate investment in competing countries.



BCG Global Manufacturing Competitive Cost Index, 2022



Sources: Invesco Real Estate, using data from Boston Consulting Group as of November 2023. BCG Global Manufacturing Cost Competitiveness Index, which benchmarks costs in 38 leading export manufacturing nations against those of the US, reflects the cost of manufacturing a product and bringing it from the factory to its end market. The Index accounts for productivity-adjusted labor costs and energy prices, as well as transportation costs to the US, machinery depreciation, and tariffs. US=100; other countries are above or below 100 compared to the US. Lighter blue bars highlight costs under 90



compared to the US.

Conclusions

While each driver is impactful in isolation, it's the interaction of these drivers that produces a fuller range of potential real estate investment opportunities (see Figure 6). This range takes on unique characteristics as the consideration of demographics narrows from the global level to the country level, and down to the local or trade area level. Future papers in this series will look more deeply into demographic trends within regional and local geographies to see how they spur the potential for real estate investment opportunities.

Figure 6: Summary of Global demographics and real estate investing

Drivers and opportunities

| | | Opportunities | | | | | |
|---------|-------------------------|---|---|--|--|--|---|
| | | Wealth + migration = more and diverse opportunities | Needs of seniors will shape property demand | Multi- generation housing demand to grow | Live/work: Hybrid work reinforced; urbanization to persist | Housing demand: Less growth, more churn | China production to shift to East Asia and Mexico |
| Drivers | Population vs Wealth | \bigcirc | | | \bigcirc | \bigcirc | \bigcirc |
| | Growth vs Change | \bigcirc | | | \bigcirc | \bigcirc | \bigcirc |
| | Migration | | | \bigcirc | \bigcirc | | |
| | Aging | | \bigcirc | | \bigcirc | \bigcirc | |
| | Income/ wages | | | \bigcirc | | | \bigcirc |

Source: Invesco Real Estate as of February 2024. Forward-looking statements are not guarantees of future results. They involve risks, uncertainties and assumptions, there can be no assurance that actual results will not differ materially from expectations.



Investment risks

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations) and investors may not get back the full amount invested. Property and land can be difficult to sell, so investors may not be able to sell such investments when they want to. The value of property is generally a matter of an independent valuer's opinion and may not be realised. Generally, real estate assets are illiquid in nature. Although certain kinds of investments are expected to generate current income, the return of capital and the realization of gains, if any, from an investment will often occur upon the partial or complete disposition of such investment.

Investing in real estate typically involves a moderate to high degree of risk. The possibility of partial or total loss of capital will exist.

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Defined Terms and Notes

- 1. Philosopher Auguste Comte (1798–1857) is often credited with coining "Demography is destiny."
- 2. Economic growth is an increase in aggregate production in an economy, which is generally manifested in a rise in national income.
- 3. Population growth is an increase in the number of people in a population or group.
- 4. Net migration represents people choosing to leave one country and move to another, as well as movement within a country. See page 4 for more information.
- 5. Global supply chain diversification refers to developing flexibility and redundancy of the global supply chain in order to minimize risk and increase agility, by increasing number of suppliers and/or expanding and reimaging manufacturing and distribution networks.
- 6. Growth domestic product (GDP) is a monetary measure of the market value of all the final goods and services produced in a specific time period by a country. Nominal GDP growth is growth without adjustment for inflation.
- 7. The IMF classifies economies as Advanced, Emerging, and Developed based on such factors as high per capita income, exports of diversified goods and services, and greater integration into the global financial system. The following list of countries corresponds to the International Monetary Fund's (IMF) designations of Advanced, Emerging, and Developing economies. Advanced Economies: Andorra, Australia, Austria, Belgium, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong SAR, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Macao SAR, Malta, The Netherlands, New Zealand, Norway, Portugal, Puerto Rico, San Marino, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan Province of China, United Kingdom, United States. Emerging Economies: Argentina, Brazil, Chile, China, Colombia, Egypt, Hungary, India, Indonesia, Iran, Malaysia, Mexico, the Philippines, Poland, Russia, Saudi Arabia, South Africa, Thailand, Turkey, and the United Arab Emirates. Developing Economies: All other countries. www.imf.org/external/pubs/ft/fandd/2021/06/the-future-of-emerging-markets-duttagupta-and-pazarbasioglu.htm
- 8. Gross domestic product (GDP) per capita GDP per capita is calculated by dividing the GDP of a nation by its population to determine how prosperous countries are based on their economic growth.
- 9. Compound annual growth rate (CAGR) is the mean annual growth rate over a specified period of time longer than one year, in this case the mean annual growth over 20 years from 2000-2020.
- 10. Aging is the Real Population Bomb published in June 2023 by IMF. www.imf.org/en/Publications/fandd/issues/Series/Analytical-Series/aging-is-the-real-population-bomb-bloom-zucker
- 11. The classification of countries and areas by income level is based on gross national income (GNI) per capita as reported by the World Bank (2022). These income groups are not available for all countries and areas. Further information is available at: datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.
- 12. Consumer purchasing power refers to how much one can buy with a specific amount of money. As prices rise, one dollar can buy less. As prices drop, one dollar can buy more.

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