

Demographic Dividends and Economic Trajectories: Analyzing the Population Growth and Economic Trajectories of India and China

Akshaj Harihar

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A study on the comparison of demographic dividends and economic trajectories of India and China is important for multiple reasons. Firstly, India and China constitute over a third of the world's population so understanding their population growth and its trends would mean this research could be used to help understand resource management and labor markets. Secondly, both economies are wildly different as India follows a mixed economy with a strong service sector while China has a state-driven model so understanding the policies employed by both countries e.g. China's One Child Policy could help us further understand the reasons to the economic trends of both countries. Finally, understanding this research can play key roles in the research of geopolitical stability as both countries play a critical role in Asia's geopolitical landscape and understanding their demographic and economic trajectories aids in assessing their stability and international relations. Employing data from the Penn World Tables and the United Nations population database, the paper compares the demographic and economic outlooks of both countries, focusing on India's potential demographic dividend versus China's demographic challenges, such as an aging population.

Introduction

Between 1995 and 2010, Gross Domestic Product (GDP) and GDP per capita in India expanded at average annual rates of 8.8% and 8.0% respectively surpassing China in the last decade. The central government's goal to quadruple GDP by 2025 from its 2000 level, necessitating an annual growth rate of 7.2%, appears attainable. The initiation of economic reforms in India in the early 1990s marked a significant pivot towards a more market-oriented economy, mirroring changes seen in China. Discussions concerning the economic growth of India have one major factor which is the idea of a demographic dividend. However this is from 1995-2010, from 2010 to 2020 China's GDP has outpaced India's as the average annual GDP growth for China was 9.1% and India's was 6.3%.

In the context of sustained economic growth spanning several decades, India has notably surpassed China in terms of GDP growth rates recently. This development prompts an analysis of the extent to which India's demographic advantage, marked by a younger population, could provide a continuous competitive edge in its economic progression. Despite India achieving an impressive average annual GDP growth rate of around 6% over the past decade, the Indian government has revised its growth ambition to 8%. This adjustment reflects a certain dissatisfaction with the growth achieved in the first decade post-economic reforms. Achieving high and durable GDP growth rates remains a critical policy goal for both countries. In China, the challenge of declining fertility rates leading to an aging population is seen as a significant hurdle for future GDP growth. According to

United Nations projections, the percentage of China's population over the age of 60 is expected to rise from 10% in 2000 to 20% by 2025, reaching 31% by 2050. Simultaneously, the share of the population within the working-age group, defined consistently here as ages 15-59, is anticipated to shrink from 65% in 2000 to 62% by 2025, and further decline to 53% by 2050. By 2020, the expansion of the working-age population is projected to become negative, which could negatively influence GDP growth.

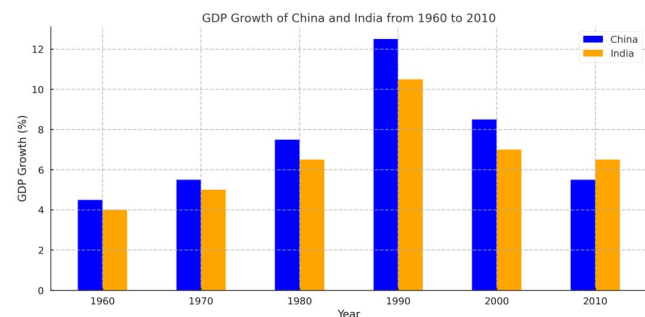


Fig. 1 Real GDP growth rate (%), 2017 US Dollars PPP
Source: Penn World Table

Contrarily, India commenced the millennium with a notably younger demographic profile than China, with its aged population constituting merely 7.5% of the total in 2000, anticipated to grow to 12% by 2025 and 21% by 2050. The fraction of India's population within the working-age range is projected to increase

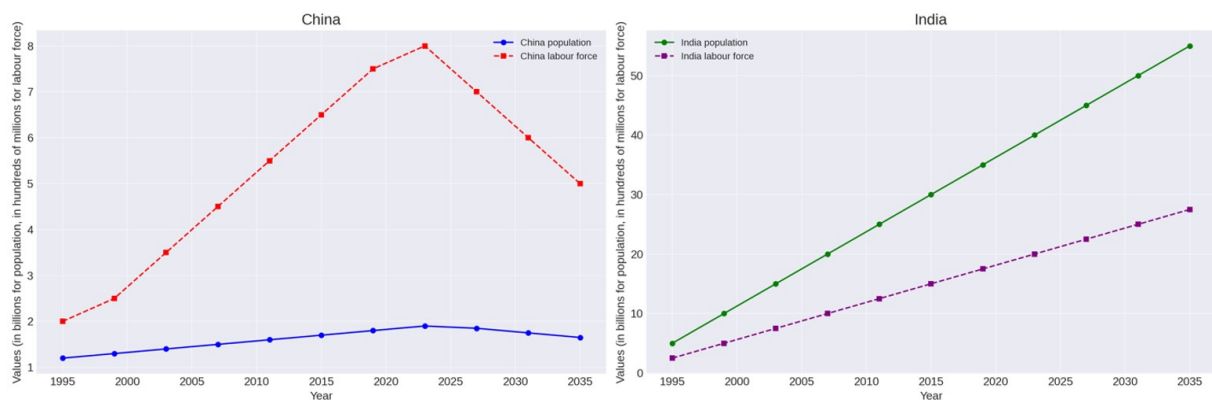


Fig. 2 Left panel: China’s labour force (in hundreds of millions) and population (in billions) from 1995 to 2035 (forecasts start in 2021). Labour force is defined as [COMPLETE]. Source: United Nations, World Population Prospects (2022 revision). Estimates of Past Population Data ranged from 1995-2020. Forecasts start from 2021 till 2035.

from 58% in 2000 to a zenith of 64% in 2035. India’s relatively youthful demographic and elevated fertility rate implies that its demographic dividend could persist for at least another two decades, in marked divergence from China’s scenario. The demographic shift towards reduced population growth and the ensuing aging in China have been significantly influenced by the One Child Policy. Nevertheless, it is essential to acknowledge that fertility rates would have diminished regardless, influenced by urbanization, the enhancement of female education, elevated labor force participation rates, and the increased life expectancy of newborns, as observed in China’s Asian neighbors.

Although the decline in fertility rates in India has not been as precipitous as in China, there has been a steady reduction since the 1970s. The divergent age compositions of the world’s two most populous nations have necessitated distinct population policy responses. The research paper will be structured as follows. Section 2 provides a theoretical analysis of the demographic transition as a whole as well as the consequences of economic growth in light of the Solow Model.

Section 3 analyzes the data. Section 4 analyzes growth decomposition. Section 5 uses UN forecasts to forecast the impact of different population growth trajectories in China and India on the growth of GDP per capita and Section 6 is a conclusion.

Literature Review

According to Mason and Lee (2005)¹, there are two types of demographic dividends. The First Demographic Dividend arises from the temporary shift in the age structure of a population during the demographic transition. As fertility rates decline, the proportion of children in the population decreases, while the proportion of working-age adults increases. This larger working-age population can lead to increased labor supply, higher savings

rates, and potentially faster economic growth. However, this dividend is temporary and eventually fades as the population continues to age and the proportion of working-age adults declines. The Second Demographic Dividend is a more long-term consequence of population aging and is less well-established than the first. It is hypothesized that as a population ages, individuals may have a stronger incentive to save for retirement, leading to increased national savings and investment. This increased capital accumulation can then lead to higher economic growth in the long run. However, this dividend depends on several factors, including public pension systems, individual saving behavior, and investment opportunities.

According to Bloom, Canning, and Sevilla (2003), the demographic dividend refers to the potential for economic growth that results from changes in the age composition of a population, particularly when the proportion of the population that is working-age is higher than that of the non-working-age group. India is poised to benefit greatly from this potential bonanza, as it has one of the youngest populations globally. But in order to fully utilize this demographic advantage, deliberate policy execution is needed; it is not self-actualizing.

An empirical analysis of the Indian states by Aiyar and Mody (2011)² reveals the contribution of the demographic dividend. The idea of a demographic dividend has gained prominence in discussions of how economic growth depends on a healthy job market and a population that is capable of meeting demand. They emphasize the need for legislative action to ensure the promise of the demographic dividend, especially in the areas of healthcare and education. This point of view is essential for comprehending the differences between China and India, as China’s economic boom has been partly ascribed to its use of strong educational systems and technical breakthroughs to take advantage of the demographic dividend (Cai, 2012)³.

While often neglected, the rural workforce constitutes a vital backbone of the Indian economy. However, challenges like limited access to technology, education, and financial services hinder their productivity and income potential. Investing in rural infrastructure, digital literacy programs, and skill development in agriculture and allied industries can empower rural communities, stimulate rural economies, and bridge the urban-rural divide.

While India recently surpassed China in GDP growth rates, questions linger about the sustainability of this advantage. In this context, my research question delves deeper into the complexities surrounding India's demographic dividend, characterized by its young population. To what extent can this unique age profile guarantee a sustained comparative advantage in its future economic trajectory? This research pushes the analysis further by focusing on per capita income, policy implications, and the global context.

Tyers and Bain (2006)⁴, for example, rightly highlighted the impact of population growth on labor force and GDP. However, this research takes a more nuanced approach. Instead of simply looking at raw numbers, in this paper we will dissect the age structure and dependency ratios, recognizing that not all population growth is created equal. A young population might boost the workforce, but a high dependency ratio can strain resources. This deeper analysis unveils the true complexities of the demographic dividend.

Furthermore, focusing solely on GDP growth paints an incomplete picture. While they acknowledge this, this research explicitly prioritizes per capita income. By focusing on per capita income, we assess the true impact of the demographic dividend on the well-being of Indian citizens. Beyond internal dynamics, my question acknowledges the global context. Understanding these external forces is crucial for devising sustainable strategies to leverage the demographic dividend. This research doesn't stop at identifying challenges. It delves into the policy implications of harnessing the demographic dividend. How can India effectively utilize its young workforce through strategic investments in education, skill development, and job creation? Can policies influencing fertility rates be strategically used to balance per capita income gains with overall GDP growth? By exploring these questions, finally, this research goes beyond India's unique case. It compares its experience to the Chinese demographic transition, drawing lessons to inform effective policymaking. This research aims to provide an understanding of India's potential advantage and contribute to its journey toward sustained economic prosperity by focusing on India's demographic dividend. This will be done by using the demographic and economic data from India and China to perform a growth decomposition exercise to estimate the contributions of population growth for these two countries and assume different scenarios to assess the implications of the different paths of population growth in two countries.

Theoretical Analysis

To understand the dynamics between population growth and economic outcomes, it's essential to delve into the Solow-Swan model's implications and how they manifest in real-world scenarios.

The Solow growth model focuses on the accumulation of capital and labor as drivers of economic growth. The model suggests that in the long run, an economy reaches a steady state where output per capita and capital per capita grow at a constant rate determined by technological progress. The reason why the Solow Model is suitable for theoretical analysis is because it emphasizes the framework for long term economic growth by emphasizing the role of capital accumulation, labor and population growth and technological progress. The Solow Model helps provide adequate insight into steady-state levels of output per worker and the convergence hypothesis. It also helps evaluate different government policies on economic growth. It can help facilitate comparisons of total factor productivity and help analyze investment patterns, demographic impacts and policies towards technology and innovation.

Faster population growth is traditionally associated with heightened GDP growth due to an expanding labor force. However, this expansion often leads to lower per capita income growth, a consequence of diminishing returns to capital and a reduced capital-to-worker ratio. Real-world population dynamics introduce complexities beyond the model's basic assumptions. Changes in age distribution, influenced by varying fertility rates, significantly impact labor force participation rates and dependency ratios. In developing countries, a decline in fertility can reduce the total old age dependency ratio and increase the working-age population proportion, potentially enhancing income per capita by lowering dependency burdens. The "demographic dividend" signifies a strong correlation between reduced population growth and increased per capita income, contingent upon the implementation of favorable economic policies. These policies should target enhancing labor market flexibility and addressing issues related to education and childcare provisions, among other considerations.

It's not just about the number of laborers but also the tenure of their careers and retirement ages that play big roles. Improvements in health and longevity will result in rising natural retirement ages (increased aged labor force participation) but declining average saving rates, the latter occurring because longer working lives reduce the need to save for retirement in each successive age cohort. However, this may not be observed in practice, particularly if policy regimes prevent or discourage later retirement, in which case increased longevity will require higher average saving rates to finance a longer retirement period. Consider China, for example, where current retirement ages of 60 for men and 55 for women were set at a time when life expectancy was only 50 years, compared with over 70 years

now. As longevity continues to rise, later retirement ages would be a simple way of expanding the proportion of workers and thereby reducing the burden placed on the fiscal system of a rapidly aging population.

Demographic changes also affect economies through both supply and demand. On the demand side, lower fertility shifts consumption patterns towards those prevalent among adults and the elderly, possibly increasing the average saving rate as the working-age population proportion rises. This increase in savings, if accompanied by corresponding investment increases, can further amplify the demographic dividend. The intricate balance between fertility, labor force growth, and economic policies plays a crucial role in determining the overall impact of demographic changes on economic growth. For instance, Policy interventions in various countries have shown a significant impact on demographic trends and their economic outcomes. While policies like China's One Child Policy dramatically reduced fertility rates, the global landscape illustrates a broader spectrum of strategies and their consequences. Urbanization, education, particularly female education, and economic factors play critical roles in shaping demographic behaviors across nations. In contrast to China's historical approach, which relied on coercive measures and legal sanctions to control population growth, current global trends favor more supportive and incentive-based policies to manage demographic changes.

The effectiveness of family planning programs in developing countries has often hinged on a range of methods, from persuasion to more direct interventions. However, the trend is shifting towards policies that encourage fertility through positive incentives rather than coercion. Governments are increasingly looking towards fiscal measures, such as tax incentives, family allowances, and support for working parents, including day-care services and flexible work hours, to address demographic challenges. These approaches aim to balance population control with economic and social sustainability, reflecting a move away from heavy-handed tactics towards policies that support families and integrate women more fully into the workforce. This shift underscores a complex interplay between government policy, demographic dynamics, and economic development. As nations navigate their unique demographic challenges, the focus is on creating supportive environments that encourage sustainable population growth rates while promoting economic stability and gender equality.

Addressing the challenges and opportunities presented by demographic changes requires a comprehensive understanding of the interdependencies among fertility rates, labor force participation, saving behaviors, and policy frameworks. As economies like China and India evolve, their experiences offer valuable insights into the multifaceted relationship between demographic trends and economic development.

Data

In the research exploring the relationship between population growth and economic development in India and China, two primary data sources were utilized: the Penn World Table (PWT) for economic variables and the United Nations World Population Prospects for demographic data. The methodological approach to data collection and analysis is outlined below, emphasizing the structure, types of data extracted, and their application in the study.

United Nations World Population Prospects

The United Nations World Population Prospects provides comprehensive demographic data for countries worldwide, including age distribution, fertility rates, mortality rates, and population projections. For this research, the data were segmented by age, ranging from newborn to 100+ years, and were available in different variants reflecting varying assumptions about future demographic trends. The medium variant was specifically chosen for this study due to its balanced approach to predicting future demographic changes based on current trends. This dataset enabled the estimation of the labor force and the average retirement age in both India and China by approximating the working-age population. This approximation involved defining a specific age range considered economically active and capable of employment, thus contributing to the labor force.

Penn World Table

The Penn World Table offers a comprehensive set of national account data, including measures of economic production and income for countries globally. Key columns extracted from the PWT for this research included:

1. **Real GDP:** Represents GDP converted to international dollars using purchasing power parity (PPP) rates.
2. **Share of Labour Compensation in GDP:** Compares the share represented by labor income in gross current prices for specific countries.
3. **Price Level of Output-based Real GDP per Capita:** Shows the price level of output-based real gross domestic product per capita relative to the US in 2017.
4. **Expenditure-Side Real GDP:** Compares expenditure-based real GDP in millions of 2017 U.S. dollars at chained purchasing power parity (PPP) rates.
5. **Number of Persons Engaged:** Includes data on persons aged 15 years and above who performed work during the reference week.

Variables used:

- *rgdpo*: Real GDP at constant national prices (output-side)
- *rgdpe*: Real GDP at constant national prices (expenditure-side)
- *cgdpo*: Current price GDP (output-side)
- *cgdpe*: Current price GDP (expenditure-side)
- *rgdpna*: Real GDP at constant national prices per capita
- *rgdpe_pc*: Real GDP per capita (expenditure-side, constant prices)
- *cgdpo_pc*: Nominal GDP per capita (output-side)
- *cn*: Capital stock at constant national prices
- *ci*: Gross capital formation (investment) at constant prices
- *ck*: Capital stock at current PPPs

Growth Decomposition

To further understand the growth of India and China based on their demographic dividends, we must employ two equations that relate the GDP and GDP per capita growth rates to the growth rates of the inputs to production. The following equations are derived directly from the Cobb-Douglas production function used in the Solow model.

$$G_t^Y = G_t^A + \alpha G_t^K + (1 - \alpha) G_t^L$$

The growth rate of output equals the growth rate of technology term plus a weighted average of capital growth and labor growth, where weight is determined by the capital share parameter alpha.

$$G_t^Y - G_t^L = G_t^A + \alpha (G_t^K - G_t^L)$$

This is a re-statement of our earlier decomposition of output growth, but in per-capita terms.

The graph, Growth Accounting of India from 1971-2019, above offers several notable insights into India's economic expansion. Initially, workforce contributions were a significant factor in the nation's economic rise during the 1970s and 80s. Subsequently, the influence of capital investments began to intensify in the late 90s and continued into the 2000s. For instance, capital investments were a dominant force in propelling growth from 2005 to 2010, coinciding with a marked decrease in the influence of labor. Furthermore, leading up to the recent downturn, Total Factor Productivity (TFP) growth, along with capital, has played a crucial role in bolstering the economy. The surge in capital and TFP may be linked to the liberalizing economic

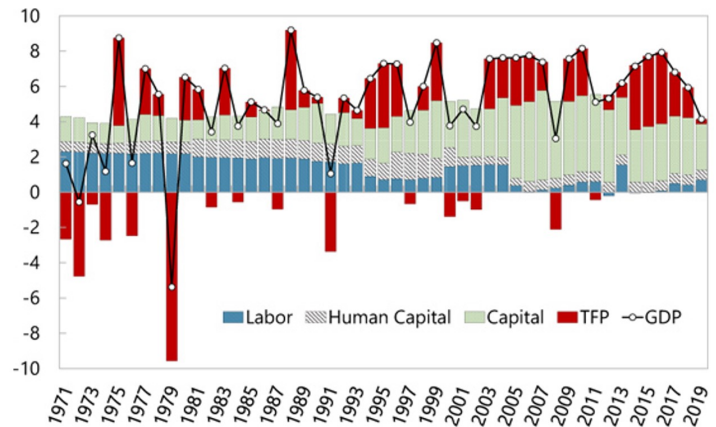


Fig. 3 Growth Accounting of India
Source:IMF Working Papers 2023

reforms of 1991, such as trade liberalization, internal deregulation, and privatization, following the pro-business policies of the 1980s. The latter uptick in TFP is possibly related to increased foreign direct investment (Ghosh and Parab, 2021)⁵ and the swift expansion of the services sector, as indicated by the Indian KLEMS database. Nevertheless, even with the brisk expansion post-reform, employment generation remained somewhat constrained, and workforce participation saw a downtrend, particularly among women (Dasgupta and Kar, 2018)⁶.

In view of the historical contributions to growth, we next turn our attention to the evolution of the growth rates of each production factor in the same timeframe (Figure 2). The growth rate of capital investment steadily climbed to its zenith just before the global financial crisis. While the labor growth rate has seen a downturn over the last two decades, the growth in human capital has been comparatively consistent. In the period leading up to the pandemic, the deceleration in GDP growth was primarily due to a slowdown in both capital and TFP growth rates.

The graph, Growth Accounting of China from 1980 to 2030, tells us that China has experienced a gradual slowdown in its GDP growth since 2010, although it has remained relatively high at around 6%. Factors contributing to this slowdown include challenges in sustaining rapid growth rates, such as technological advancements, changes in labor dynamics, and the overall efficiency of factors of production. The sustainability of China's economic growth at rates between 6-7% has been a subject of research, with some suggesting that returning to double-digit growth rates may be challenging in the long term. Comparatively, India has also seen significant economic growth over the past few years, albeit at a slightly lower pace than China. Both countries have unique economic development experiences and areas for improvement. The competition between China and India is often viewed as mutually complementary rather than a zero-sum

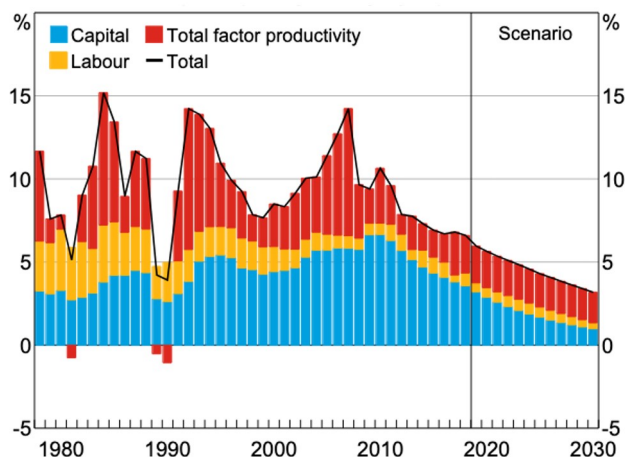


Fig. 4 Growth accounting of China from 1980-2030
Source: Reserve Bank of Australia

game, with potential for win-win cooperation. In terms of future prospects, China aims to rebalance its growth towards consumption and services while upgrading its industrial structure. India, on the other hand, seeks to accelerate economic growth through better governance. Both countries face institutional and political economy obstacles in achieving their growth objectives

While China's GDP growth has slowed gradually but remains relatively high, India's growth trajectory presents a different set of challenges and opportunities. Understanding the dynamics of these two major economies provides valuable insights into the evolving landscape of economic development in the 21st century.

To isolate the effects of demographic factors from other economic policies and global economic conditions in the growth decomposition analysis:

1. Data was gathered from the aforementioned reliable sources.
2. We used the Cobb-Douglas production function where Y is GDP, A is TFP, K is capital, L is labor and alpha is 0.3 to 0.4 in most economies.

$$Y = A \cdot K^\alpha \cdot L^{(1-\alpha)}$$

3. We isolate the demographic factors based on labor contribution, capital contribution and TFP contribution.

Forecasts

Methodology for GDP conversions:

1. gather GDP data from the Penn World Table and then convert this data into USD, adjust it for inflation using a CPI.
2. Calculate GDP per capital by dividing it by population figures from the UN database.
3. Analyze population growth data from the UN population division and labor force participation rates from the International Labor Organization

How unforeseen circumstances like the pandemic impacted the results derived from the data? To account for unforeseen circumstances like a pandemic in the growth decomposition analysis of India and China, several methodological adjustments were made. First, data sources were updated with real-time information from reliable institutions such as the Penn World Table and United Nations Population Database to capture the most current economic conditions. The data was then segmented into pre-pandemic, pandemic, and post-pandemic periods to distinctly analyze the impact on economic growth components in both countries. For labor market adjustments, labor force participation rates were modified to reflect decreases due to illness, lockdowns, and other pandemic-related factors, while productivity shifts were considered to account for remote work changes and altered work hours.

In terms of capital adjustments, investment fluctuations and changes in capital utilization rates due to economic uncertainty and supply chain disruptions were taken into account. The impact of emergency government policies, such as stimulus packages and financial support programs in India and China, on capital formation and business investments was also included. For Total Factor Productivity (TFP), short-term fluctuations due to immediate operational challenges and long-term impacts from accelerated technological adoption were considered for both nations.

Policy and institutional adjustments included the effects of new economic policies, regulatory changes, and financial support measures implemented to mitigate the pandemic's impact, as well as the role of institutional responses in maintaining economic stability. Analytical adjustments involved conducting scenario analysis to project different recovery paths (e.g., V-shaped, U-shaped, L-shaped recoveries) and performing sensitivity analysis to understand the robustness of results under various assumptions about the pandemic's duration and severity in both countries.

The interpretation of results included a contextual analysis to understand the growth decomposition results in light of the pandemic's extraordinary conditions. Caution was emphasized in drawing conclusions, acknowledging the unprecedented nature of the pandemic and the inherent uncertainties. By making these adjustments, the analysis aimed to isolate and understand the pandemic's impact on the traditional drivers of economic

growth in India and China, allowing for a more accurate and nuanced interpretation of the results.

The demographic trajectories of India and China present contrasting pictures that have significant implications for their future power and economic dynamics. India is projected to surpass China as the world's most populous country, with its population expected to reach 1.7 billion by 2064, while China's population is on a declining trend, potentially dropping below 1 billion by the end of the century. These demographic shifts are driven by factors such as fertility rates, aging populations, and policy interventions that have shaped the growth patterns of these two nations. India's demographic landscape is characterized by a youthful population, with more than 40% of its people under the age of 25, contributing to a median age of 28 compared to 38 in the United States and 39 in China. In contrast, China has a rapidly aging population, with adults aged 65 and older comprising 14% of the population, a figure that is expected to increase over time. The fertility rate in India, although higher than China's and the U.S., has been declining steadily, reflecting a broader trend of decreasing fertility rates across all major religious groups in the country. These demographic dynamics have implications for economic growth, labor force participation, and social welfare systems in both countries. From a geopolitical perspective, the demographic transition in China poses challenges to its future power projection, as a declining working-age population will need to support a growing elderly population, impacting resources, jobs, and social services.

In contrast, India's growing workforce presents opportunities for economic expansion, but it also brings challenges in terms of infrastructure, education, and healthcare requirements for a large and youthful population. The demographic trends in both countries underscore the importance of policy responses to address issues related to aging populations, workforce dynamics, and sustainable development.

At its core, the notion that faster population growth can lead to higher overall GDP growth but lower growth in income per person is supported by the classic Solow growth model. This model incorporates diminishing returns to factors of production but simplistically assumes constant labor participation rates across a timeless population. Consequently, rapid population growth results in a larger labor force, leading to equilibrium states characterized by less capital per worker and thus, lower income per capita. However, real-world demographic shifts include changes in age distributions, affecting average labor force participation rates and dependency ratios. In developing nations with many dependent children, decreasing fertility not only slows population growth but also lowers the total dependency ratio, enhancing the proportion of working-age individuals. This decrease in dependency enhances per capita income, reinforcing the Solow-Swan model's findings, creating a "demographic dividend" as discussed by Bloom and Canning (2005a). However, this increase in per capita income relies heavily on a

variety of economic policies that influence labor market flexibility, including those related to education, childcare, pensions, and immigration.

Demographic changes also influence the economy's demand side. Reduced fertility elevates the population's average age, altering consumption patterns to better reflect the preferences of adults and the elderly. Notably, an increased proportion of working-age individuals typically leads to higher savings rates among households, particularly in developing countries experiencing fertility declines. This rise in savings rates, if accompanied by increased investment, further strengthens the demographic dividend, as noted by Higgins (1998). The demographic transition's impact on savings and investment is significantly affected by a country's capital flow openness. For economies like China and India moving towards more open capital accounts, the aging effect on saving rates may lessen, as these economies' growth becomes more influenced by their comparative performance rather than domestic saving behaviors.

Yet, considering fertility, longevity, labor force participation, and saving rates together introduces complexities. For instance, improvements in health and longevity could lead to higher natural retirement ages and decreased average saving rates, as longer careers lessen the urgency to save for retirement. However, this might not manifest if policies discourage late retirement. For countries like China, adjusting retirement ages could mitigate the fiscal challenges of an aging population. The effect of pension systems on retirement decisions and savings introduces additional complexity, as different policy responses to pension pressures can have vastly different outcomes.

Moreover, the relationship between labor force growth, capital returns, and foreign investment adds another layer of complexity. Attracting foreign investment boosts GDP growth, but the impact on per capita income growth depends on real wage trends. Faster labor force growth may slow real wage growth while attracting foreign investment. This, in turn, affects migration patterns and can influence the terms of trade, potentially dampening per capita income growth.

Fertility rates are critical to demographic changes, especially in China and India, where they significantly drive population dynamics, as Padmadas et al. (2005) argue. The debate over fertility rates, particularly in China, involves considerations of the One Child Policy's effectiveness and its implications for aging and gender balance. Despite the controversy, the possibility of adjusting fertility rates through policies, including a potential "two-child policy," remains a topic of discussion. However, the effectiveness of such policies, likely to be shaped by fiscal incentives and supportive measures for working mothers, remains uncertain, as history shows that previous reductions in fertility rates have often relied on more coercive methods.

In both India and China, there is a peak in both Series 1 and Series 2, after which both series decline.

For India, the peak for Series 1 is around the mid-30s mark

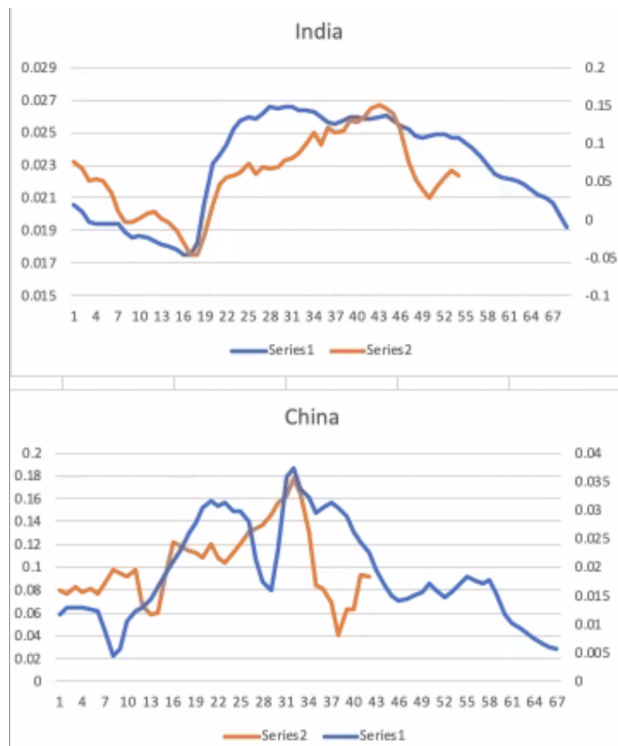


Fig. 5 Population Trajectories
Source:UN Database

on the x-axis, whereas Series 2 peaks slightly later. For China, the peak for both series appears around the 30-40 range on the x-axis, with Series 1 peaking earlier and sharper than Series 2.

The peak in Series 1 for China is much sharper and higher than for India, indicating a steeper increase to a higher value followed by a decline

Conclusion

China's impending labor force contraction and India's expanding workforce relative to its population present contrasting economic scenarios. In a neoclassical model, these changes suggest lower GDP and higher per capita income growth in China, with the reverse expected in India. However, the interplay of factors like population structure, dependency ratios, real wage trends affecting skilled emigration, and capital flows complicates this straightforward analysis

A proposed relaxation of China's One Child Policy aims to counter the negative effects of an aging population on GDP growth. Simulations indicate that a 2-child policy could boost GDP and reduce the proportion of the aged population but might lead to a reduction in per capita income by 2030 due to changes in dependency ratios and skilled emigration

India, on its path to becoming the world's most populous

country by 2030, continues to focus on fertility decline in its population policy. Faster fertility decline may result in lower GDP growth but substantial gains in per capita income. Lower fertility rates impact GDP negatively but increase per capita income, with India benefiting more per unit change in fertility due to its higher youth dependency

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