The Effects of Population Growth on Economic Performances in China and India

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Economic performance and population growth are expressly linked and China and India are the two most populated nations in the world. While a large population might translate to having a large labour force, several key economic factors have contributed to how the Chinese and Indian populations have grown and what differing effects that growth has had on their developing economies. This essay aims to highlight some of the very important differences in the population growth rates of these two Asian states and how it might explain the variation between their economic development and performance. This essay will not only touch upon the pure economic data, but also find a place for political, cultural, and sociological links between the following: per capita income, fertility rates, technological advancement, education, population control policy, and government intervention.

Population growth can have several effects on the economic expansion and performance of a country. China, with 1.32 billion people, and India, with 1.1 billion people, together are home to almost two and a half billion people on a planet with almost six and a half billion inhabitants. Though they each enjoy the same factor endowment, namely a large labour force, several key economic factors have contributed to how the Chinese and Indian populations have grown and what differing effects that growth has had on their developing economies. This article will concentrate on some of the important differences in the population growth of these two Asian states and how they might explain the variation between their economic development and performance. While a brief article will not entail all economic measures and factors linking population and economic performance, this article will touch upon links between the following: per capita income, fertility rates, technological advancement, education, population control policy, and government intervention.

Much of the original foundation for studying the economic effects of population growth stem from the writings of Thomas R. Malthus (1766-1834). The Malthusian model highlights two main ideas. “The first is the existence of some factor of production, such as land, which is in fixed supply, implying decreasing returns to scale for all other factors. The second is a positive effect of the standard of living on the growth rate of...”

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population. Third, Economic growth rates in China, according to the Asian Development Bank’s Country Economic Review (CER) done in 2002, have featured in the 7-8% per annum range, which has led to an unprecedented rise in the standard of living for millions of Chinese. Indira’s CER published a steady rise to around 6% annual growth for 2001. While this outstanding growth has brought enormous benefit to citizens of both countries, India and China have fallen into the “Malthusian Population Trap.” When population is low the standard of living is higher but, “When population size is large, the standard of living will be low, and population will be reduced by either the ‘preventive check’ (intentional reduction of fertility) or by the ‘positive check’ (malnutrition, disease, and famine).”

The “preventative” check of which Malthus spoke, the intentional reduction of fertility, is commonly seen as one of the keys to subsiding population growth for the future. There are several economic factors that are linked to fertility rates, such as technological advancement and increased levels of education. In developing countries children are often seen as an economic asset, a tool to help increase agricultural production and also to ensure that a caregiver exists when parents get older. “Demand or need for large numbers of children is driven down by improvements in living standards and child survival and by the modernization of economies.” The movement away from agricultural production and into more modern industries in the manufacturing and services sectors negates the necessity to have large numbers of children. In examining the employment construct of the Chinese versus the Indian work force, one will notice that the Chinese economy is the more modern of the two. Using 2003 estimates, 49.1% of Chinese were employed in the primary sector, with 21.6% working in the secondary and 29.3% in the tertiary sectors. Comparably, in India the primary sector is responsible for 60% of employment, with the secondary and tertiary sectors accounting for 12% and 28% of employment, respectively. The large agricultural presence in the Indian economy partially explains why higher fertility rates pervade the population, due to needing children to help with family agricultural plots.

6 The Malthusian Population Trap refers to the tendency for population to grow at a geometric rate while food production increases at an arithmetic rate. There are decreasing returns to scale on the fixed-capital (land) as population grows.
7 Galor, Oded and David N. Weil, op. cit., p. 807.
Though India and China have almost similarly sized populations, it is the technological progress of the Chinese that has allowed them to better sustain the population growth of the last few decades and increase their per capita income. Without this important technological progress a rise in the standard of living becomes very difficult and sustaining high population growth becomes more challenging:

“During this Post-Malthusian Regime, the Malthusian mechanism linking higher income to higher population growth continued to function, but the effect of higher population on diluting resources per capita, and thus lowering income per capita, was counteracted by technological progress, which allowed income to keep rising.”

According to Galor and Weil, now that the Chinese have moved into a majority manufacturing and services based economy they will be able to continue to increase per capita income. If the Indian government can create and manage a transition to an economy based on manufacturing, services, and technological advancement, then incomes will rise as a result and fertility rates will fall. Due to population control policies in China, which will be discussed later in this article, the Chinese labour force will reach a peak and then begin to shrink causing a slowdown in Chinese economic growth. Barlow argues that the kind of economic growth seen in China is not sustainable because of this lagged fertility rate. The “one-child” policy implemented in China since 1978 has contributed to a low current fertility rate, while before the policy was implemented the fertility rate was 5.75, which has contributed to high lagged fertility. Barlow explains that low current fertility will eventually translate into low lagged fertility which, in turn, will mean a slowdown in economic expansion. “If current fertility is low, lagged fertility will eventually reach a low level and an important source of economic expansion—namely, rapid growth of the labor force—will disappear.”

Since India’s rate of population growth has remained higher than that of China, the Indian labour force will eventually outnumber the Chinese possibly keeping wages lower in India and thus making it a more attractive host for industry. This is promising for India as it may indicate a transition to a more manufacturing and services oriented economy in the near future.

Education level is also shown to have a positive correlation with gross domestic product (GDP). With regard to China and India however, within the sphere of education, it is the gender gap in education that has hurt economic growth in the latter. As technological progress can keep per capita income on the rise, maintaining a high

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11 Galor, Oded and David N. Weil, op. cit., p. 808.
12 Robin Barlow has conceived this notion of lagged fertility and operationalises it as such: (1) in the short run, an increase in fertility tends to have negative effects on per capita income growth; (2) in the long run, its (partial) effects tend to be positive; (3) because current fertility is highly correlated with past fertility, current population growth rates capture both the short-run negative and the long-run positive effects; (4) hence in a two variable correlation, current population growth appears to have a zero impact on current per capita income growth, even when it really has a negative short-run effect.
commitment to education, especially for women, can have a similar effect. “South Asia is the region where, apart from Sub-Saharan Africa, girls’ education lags most severely behind boys”. Gender differences in primary level enrolment range from 15 to 50 percentage points.” East Asia (which includes China) “has the fastest economic growth rate and highest education level of any third world region” and can be partially attributed to more equal enrolment in school among males and females. “The education gender gap is relatively low and women comprise larger share of labour force than in any other third world region...” which is a testament to the importance of gender equality in education.

Education also ties into fertility rates, per capita income, and technological advancement, which underlines the truly interconnected nature of these social factors. “Not surprisingly, certain indicators of advanced development are consistently correlated with low rates of fertility: high rates of literacy, high per capita consumption of energy, high rates of urbanization, low rates of infant mortality, high per capita income.” This acknowledgement of the intricate relationship between these factors underlines the necessity for any governmental policy or action to be taken in a multi-pronged approach. “No one intervention can be expected to affect fertility in a simple downward direction: the relation between each variable and fertility is complex, as are the relations among these variables and their joint effect on fertility.” Higher education levels for women mean that there is a larger pool of skilled labour which will push for greater industrial development. If the Indian government invested as heavily as the Chinese in primary and secondary education, then it would be foreseeable that more rapid industrial transition and economic development would occur. As Birdsall argues, an increase in education level translates into an increase in per capita income which has a negative correlation with fertility rates. “Any success in increasing incomes of the poorest groups is likely to have fertility-reducing benefits; this includes increasing availability of services in health and education to those groups.” That is to say that any increase in education for a woman leads to a corresponding decrease in her fertility rate.

Higher education levels for women also lead to the delay of marriage, which would then, presumably, lead to a decrease in fertility as well. Education is meant to be more than just enrolment levels in primary, secondary, and higher educational institutions. Education also refers to family planning resources which has a direct and obvious effect on fertility rates. Population growth can be curbed by strategic investments by the state in family planning services and education. In fact, some economists have argued that it is one of the most significant investments for a developing country. In referring to the work of Stephen Enke, Birdsall talks about his estimated value of “prevented birth” and the return on investment in family planning services. “He

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16 Ibid, p. 9.
17 Ibid, p. 10.
19 Ibid, p. 91.
20 Ibid, p. 91.
used his estimate to compare the return from traditional development spending to the return from spending on family planning that was 100 to 500 times more effective than spending on other development projects.  

21 Lowering fertility rates is not the only benefit of educating women obviously. More education means a more productive labourer which has a direct effect on economic growth. Baden and Green note that the higher rates of economic and technological growth in East Asian countries are “in part a result of their relatively high levels of education and growing pool of post-primary educated workers.”  

22 The higher education levels attained by women in China versus the very low levels attained by women in India may account for a very large opportunity cost.

One might be able to argue that the “one-child” policy in China has had more than just the intended effect of lowering fertility rates. In fact, combined with increasing per capita incomes due to rapid urbanisation in the last few decades, this policy has helped to build an even more educated future workforce. Through investments in education, health, and commodities associated with higher standards of living, Chinese parents are now ensuring that the next generation of the work force is highly skilled in an increasingly technologically savvy economy. “The advent of modern schooling raises the cost of childbearing and removes children from productive activities. It becomes possible for parents to invest in their offspring and to substitute quality for quantity.” 

23 The complexity and interconnectedness of all these variables on population growth and economic development draw attention to the mammoth task facing governments in many developing countries. This task necessitates a government that is in a position to make substantial and lasting reforms, policies, and sacrifices to ensure a healthy symbiosis between population structure and economic growth and performance.

China has been mostly successful due to the strong political position of the Chinese Communist Party (CCP) in its government. In contrast, the government in India is in an often weak position when it comes to compelling meaningful and reform in the economic sphere. India has indeed embarked on a population control policy of its own. Family planning programmes have existed in India since 1951, making it one of the first countries to make efforts in this direction. However, there has been very inconsistent monitoring of those programmes which has resulted in widespread noncompliance. 

24 The population control policy of China has already been mentioned as a key factor in slowing population growth however, other factors have contributed to the high level of Chinese economic performance in the face of an increasing population.

The huge success of the Special Economic Zones (SEZs) established in China has been attributable to a couple different factors. The centralisation of the Chinese economy allowed the government to set up these SEZs where they saw fit, dictating domestic

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22 Baden, Sally and Cathy Green, op. cit., p. 10.
23 Cleland, John, op. cit., p. 21.
migration and population patterns for decades to come. As a result, urbanisation has been concentrated in a small number of economically strategic locations. The fragmentation in the Indian system, attributable to its democratic governmental structure, has not allowed for such precise coordination and has thus led to slower urbanisation and a lesser skilled work force. Larger urban areas permit greater industrial concentration which "generates a higher level of employment than what can be achieved with industries spread out in separate urban areas. Higher levels of Urbanisation mean a large overall labor market and a large service sector interacting with manufacturing." Mitra’s point emphasises where China currently is in terms of economic growth and where India should aspire to be, via a more concise and coordinated approach to an industrial transition. Mitra also highlights that "average productivity increases with the size of the labor market, as average match between the skill characteristics of workers and the job requirements of firms improves with an increase in the size of the labor market." This is yet another more attainable condition for China than for India.

The developmental state model has been pursued by China and India with varying success. The goals of difficult policies aimed at implementing and/or monitoring, like population control, are more achievable with the presence of an authoritarian regime. While it deserves much credit for maintaining the world’s largest democracy, the Indian government is slow and unresponsive when the issues of population growth and economic performance require nimbleness and decisiveness. First possible steps in alleviating the stress of population growth on economic performance might rest with empowering women through education which would, in effect, reduce fertility rates which, in turn, would raise per capita incomes, thus allowing for greater education investments in children, precipitating urbanisation as a more skilled workforce searches for employment that spurs technological advancement. While there is still much that can be written on the effects of population growth on economic performance, especially in such rapidly developing (and growing) countries like China and India, this article has aimed to highlight certain key factors of population and economic growth and has attempted to illustrate the causal links between: per capita income, fertility and lagged fertility rates, technological advancement, education and family planning services (or population control policies in the case of China), and the aspects the government is able to affect.

26 Ibid., p. 97-8.
27 While authoritarian regime has a negative connotation, it is used here simply to describe the Chinese government as a one party system.
Bibliography


