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How India Can Use Its Numbers

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Editors' Note

India's demography drives its political economy to a great extent: readers will already be familiar with the unprecedented increase in India's internet penetration and presence in recent years, a phenomenon driven by cheap data prices as much as the country's enormous population. In this chapter, Shruti Rajagopalan argues that this dynamic could potentially underpin many other aspects of the economy as well, and that it makes good strategic sense to invest in developing it irrespective of the global scenario. Indeed, India's population might afford it an unprecedented opportunity to lead the world in network goods, as well as increasing consumer surplus and unlocking other benefits for its citizens. In a world fighting a pandemic, where social distancing is the norm, a recession seems inevitable, and supply chains are increasingly vulnerable to lockdowns, integrating India's markets and unlocking economies of scale may prove to be the next big step in its growth story.



Introduction

While no one can predict the next world order or India's place within it, one area where policymakers can make bets with relative certainty is India's population. India's population currently stands at 1.36 billion, and forms about 17.7% of the world's population. It is the second largest nation in numbers, and is poised to be the largest in a few years. Aside from natural disasters or nuclear wars, etc., India is unlikely to lose its place as the world's most populous nation.

While discussing India's place in the new world order, it is pertinent to discuss areas where India's large population will be a distinct advantage. I have identified three policy areas where a large population helps exploit other gains, provided we treat the entire populace as one single market, without regulatory bifurcations.

The first policy area is based on division of labour being limited by the extent of the market. The larger the size of the markets, the greater the division of labour, and therefore specialisation and productivity. India has the opportunity to create the single largest domestic market in the world. Currently, the opportunity is unrealised as the Indian market is fragmented due to poor internal tax and tariff regimes, enforcement, and a crippling lack of infrastructure. But a single market the size of India, can unleash gains from trade and productivity, and therefore economic growth, never experienced before.

Second, India's population gives it a unique advantage in goods, infrastructure, and services that require economies of scale. India's urban density of population, its current migration pattern from rural to urban areas, and its increasing number of cities, make it ideal for exploiting economies of scale, particularly for provisioning public goods and healthcare. Public transport and mass transit services, public infrastructure, etc. are fiscally possible and sensible in India's great metropolitan areas, but also in smaller cities due to the density of population.

Third, the new information economy is largely built on network effects. Social media, e-commerce, entertainment, etc., are network goods, and network goods famously compete for the market, not within the market. India is pegged to be the largest market for most network goods globally over the next few decades, and India is in a position to drive content uniquely to its advantage.

What should Indian policy makers pursue in the new world order? The answer is simple — economic growth. Since the 1991 reforms, a higher rate of GDP growth sustained over the years has lifted over 170 million Indians out of poverty.¹ Sustained economic growth has given India greater importance on the global stage and made the lives of hundreds of millions of Indians better. In this sense, no matter what the global order, the policy imperative for Indian policymakers, is to pursue policies that boost India's economic growth rate. Open trade and globalisation increase growth and productivity over the long run. However, trade relations are highly sensitive to the New World Order. For this reason, the only policies discussed here are those pertaining to the domestic market, relying on India's large population.

Smith, not Malthus

For decades, Indian policymakers, elites, and citizens have been lamenting India's population, or as they refer to it, overpopulation. Policymakers worked under the belief that, as Malthus argued,² resources are limited and too many people accessing those resources automatically implies severe shortages and famines. But the real problem for our socialist policymakers was that planning and micromanaging Indians' lives under the dirigiste mindset, could not allocate resources efficiently, and Indians experienced enormous shortages. Citizens on the other hand, trying to access the scarce public goods and services, imagine that more people in the system is a negative or at best a zero-sum game, and every bit of access received by

others is denied to them. For the Indian citizen, the metaphor for their life is standing in queue. And so, they blame the most obvious problem they can see — other people standing in line in front of them.

Policymakers, one after the other, berated Indians for existing, lamenting the “overpopulation” and created the worst of all planning programs — family planning. It had many unintended consequences, gender selection and female foeticide, and the forced sterilisation programs, on one end of the spectrum. On the more benign end, it resulted in a call not to increase supply of public goods and services, but to reduce demand by reducing population growth. The market normally responds to increased demand with an increase in prices, incentivising suppliers to increase supply and meet the demand. But government services hardly work the same way as competitive markets. Most Indian public goods and services have not kept up with the rise in population, and in many areas overregulated markets have been prevented from adjusting to the increased demand. The shortage in basic services like water, sewage systems, roads, public transport, etc., turns citizens on one another, and increases the demands for population control.

But the truth is that India's strength is in its numbers

A population of 1.37 billion people in one nation and one market creates opportunities that cannot be artificially mimicked. And the more prosperous this large group of people, the larger the size of the market. One of Adam Smith's crucial insights in the *Wealth of Nations* was that the division of labour is limited by the extent of the market.³ A greater division of labour, and therefore greater specialisation, can lead to productivity gains that are quite unique. Further, specialisation is the source of innovation in an economy.

Also, the greater the economic growth, the larger the size of the market. The extent of the market is not simply a question of headcount,

but one of purchasing power. One thousand poor people in a village will see less division of labour than a hundred rich people in a similar village. Some of these benefits have already been witnessed since liberalisation. Richer states like Tamil Nadu witness far greater specialisation than poor but populous states like Uttar Pradesh. The size of the market is a function of the purchasing power of the people in the market, and poorer markets are more limited. So, the focus on connecting all Indians to a large domestic market is crucial to their prosperity.

With a larger market, specialisation is possible in almost every conceivable area of the economy, which leads to more innovation. Larger and more specialised markets are more likely to have more individuals involved in knowledge generation. Nobel Laureate Paul Romer has developed a theory of endogenous economic growth.⁴ He argues that the development of new ideas in an economy is tied to the number of people working on generating knowledge, or research and development, etc. While new ideas may generate gains within an economy, crucially, these new ideas make everyone else producing regular goods and services more productive i.e. increase the total factor productivity in all areas. One obvious aspect of endogenous growth theory is that an increase in population, leading to an increase in the number of people working in the knowledge sector, will in turn increase economic growth. But in the case of India, it is not enough to simply have more people; India also needs a more skilled/educated labour force which can actualise these gains.

Single Domestic Market

Adam Smith begins his treatise *The Wealth of Nations* with the insight that the division of labour increases productivity. His pin factory produces 48,000 pins per day when 10 labourers divide the various tasks involved in making pins. Smith says an individual can make 4,800 pins a day when he

works with other others, dividing the tasks, but could scarcely make 20 pins a day by doing all the tasks himself. This 240x increase in productivity is a result of the division of labour, and even greater gains are in store long terms from the specialisation that will result from the division of labour.

This division of labour in an economy cannot be planned or designed by the human mind but is in fact the gradual consequence of another human propensity — “the propensity to truck, barter, and exchange one thing for another.”⁵ Therefore, the division of labour is an emergent property of the institution of market exchange. After all, specialising in one-tenth of the tasks required in pin-making requires that one can trade the pins or the revenues from the sales of pins for other goods. One cannot use the pins for all other needs in the absence of trade. In markets where there is little to no exchange, there will be no division of labour. As there is greater exchange in society, individuals are incentivised to participate in division of labour.

Smith moves on to his discussion that the division of labour is not witnessed to the same extent everywhere. He ponders that one rarely finds porters in English villages, whereas there is no town, even a poor one, without the need for a porter. It's a job typical of a big city. The village level activity does not allow an individual to only dedicate himself to the job of a porter, as he would not be able to sustain it through exchange with individuals performing other specialised jobs. Smith observes that in Scottish villages, there is little division of labour as “every farmer must be butcher, baker, and brewer for his own family.”⁶

Therefore, the division of labour is limited by the extent of the market. The size or extent of the market is determined by two factors, the first is population and the second is prosperity. While population has been growing since the birth of the Indian republic, it is only since liberalisation in 1991 that Indian economic growth rate has increased, and poverty has rapidly decreased.

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For India to turn into a global player, it needs to first unite its domestic market into one single barrier-free market.

To illustrate the point of the single domestic market, consider a well-known and popular snack, south Indian banana chips — and their availability in Mumbai and New York City. Alappuzha (Alleppey) in Kerala has a few hundred types of bananas and many small entrepreneurs who make excellent banana chips. However, it is difficult to get these excellent banana chips in Mumbai, even though it is only 1,500 kilometres from Alappuzha. If at all available in Mumbai, it is usually at a specialty store selling special south Indian brands and products, and not easily available like other kinds of chips. It is, in fact, easier to find high quality and more authentic banana chips from Kerala in New York than in Mumbai - because India is not a single domestic market. Due to all the barriers to transport goods between states, and the cost of the transportation with the extremely poor infrastructure, the cost of the same packet of banana chips would increase from say Rs. 50 in Kerala to Rs. 150 in Mumbai. At the price of Rs. 150, there are very few people in Mumbai who would buy the chips, and therefore too small a market for vendors to routinely stock authentic Kerala chips, instead of some local alternative. At this price point, most people would rather eat locally made chips, or even make banana chips at home, at a fraction of the price. On the other hand, while the cost of transporting these chips to New York City is also high, there are two factors that make them available in New York City.

First, the average banana chips lover in New York City is many times richer relative to Mumbai, and willing to pay much more for good quality Kerala banana chips. Second, the South Asian diaspora in New York City, might be even more willing than the average banana chips lover, to acquire a small taste of home — and this group is sizable and growing. The cost of transportation is higher, but the larger and more prosperous market, as well as fewer barriers, makes it possible to get these goods in the United States.

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Should they be able to sell to a single Indian market, Alappuzha chips makers could have a market 10–20 times larger than their current domestic market. They would employ more people to make chips, make more people happy by selling them chips, and housewives everywhere in India would be thrilled to be released from the tyranny of making chips at home. It is not just a problem of my favourite kind of banana chips, but for all goods across India. Most goods cannot reach willing customers. First, India needs to become one single market and remove all internal trade barriers. India, though it has freedom of movement of individuals, has enormous restrictions on movement of goods and capital, and is a highly fractionalised domestic market.

The second issue is the increase in the cost of transporting these goods due to internal barriers and infrastructure problems within India, which costs Indians massively in terms of access to markets. Yet, India cannot tap into any of these gains until it becomes a single market with a connective tissue provided by the infrastructure.

India needs urgent reform in three different policy areas to create a single internal market.

This is how it can be done

First, India needs to remove all internal interstate tariffs and tax differentials for all goods. The ostensible goal of the Goods and Services Tax (GST) was to create a single market and remove barriers and checkpoints within India's borders, but the multiple classification system has perpetuated the same old system under a new name and failed to convert Indian states into one single larger market. This is markedly different from both China and the United States when it comes to domestic trade policy. One single domestic market will increase the size of the market, increase specialisation and therefore productivity, and thereby prosperity.

The GST was a good start in that direction, but with its 5 different tax rates and a complicated tax classification system, and continuance of checkpoints at many state borders, it has not helped form a single domestic market. India needs a single non-zero GST rate, across all goods and services, to reduce the regulatory burden for pan India movement of goods and services. This would automatically make all checkpoints redundant and therefore smoothen internal trade.

A second part of integrating India into a single domestic market is improving the roadways, railways, and waterways infrastructure for smooth transportation of goods and services. This investment in infrastructure will more than pay for itself. According to the *Handbook of Statistics on Indian Economy 2016–17*, since the 1991 reforms, central government revenue has increased 25 times and state government revenues have increased 28 times in nominal terms, and about 4 times in real terms. Openness to trade, and the consequent economic growth, led to an increase in government revenue. And this revenue, used to build more accessible public goods and infrastructure, can have a twofold effect. The first effect is that better infrastructure will boost all other areas of the economy. Second, in a country like India with an acute jobs crisis and agrarian crisis, where people are migrating from villages looking for jobs in cities, construction of infrastructure can productively absorb a large portion of the labour supply.

Third, India should start treating its citizens like an asset instead of a liability. All governments view Indians as potential costs — to feed, educate, provide healthcare to and so on. Their only asset value is during elections when large numbers turn out to vote. But Indian governments at the state and federal level need to get out of this paternalistic mindset, and instead recognise policies and areas that harness India's human capital. Despite being the second most populous country in the world, India's labour participation and labour productivity is relatively low. The main

reason for this is labour laws which restrict Indians from participating in the formal economy, leaving them trapped in the informal economy — which cannot scale up and must remain in the shadows. Indian manufacturing shows a long-term trend of capital substitution for labour, a bizarre trend in a labour rich country, caused by contrived scarcity of labour due to labour regulation. A complete re-haul of Indian labour laws is required.

Therefore, integrating India into a single large domestic market will boost economic growth for multiple reasons. These arguments also hold true for international trade; I believe India should be more open to international trade and open itself up unilaterally. However, international trade is highly sensitive to the global economic order, and the arguments in favour of a strong single domestic market will hold no matter how the rest of the global order looks in the future.

Economies of Scale

A second benefit, unique to a high-population nation like India, is that there are possibilities to exploit economies of scale for virtually all goods and services. Economies of scale are the advantages of large-scale production that reduce average cost as quantity increases. Virtually all goods and services benefit from economies of scale to bring down per unit costs where there is a large market. But there are some goods that *need* economies of scale. These are typically goods that have high fixed costs and low marginal costs.

A classic example is pharmaceuticals. Let's say the cost of developing a new drug is 1 billion rupees. Once the drug has been developed, the cost of replication is extremely low, maybe 100 rupees per pill. So, the first pill costs 1 billion rupees, while the second pill onward costs only a hundred rupees each. Assuming the cost of developing a new drug is the same for a rare disease or a common one, it is far more likely that pharmaceutical companies will develop the drug for the common disease, simply because

they can recover its costs spread across a large number of customers. The larger the market for the new drug, the more likely it is to exist. This is not only true for new drugs but also hearing aids, and prosthetics, and wheelchairs etc., where new technologies can be developed, because the size of the Indian market is so large. Further, the Indian market has multiple income and wealth levels providing for experimentation from expensive to low-cost medical equipment.

Another extremely pertinent example is urban infrastructure. Mass public transit systems have very high fixed costs. The fixed capital investment required to lay the tracks before a single journey can be made is immense. But mass transit systems are meant for the common man, and using them cannot be prohibitively expensive. The only sensible way of ensuring a reasonably priced mass transit infrastructure is to leverage high density of population, since it would need very high footfalls to cover costs.

Similarly, sewage systems are extremely costly to develop, with very large benefits in public health and long-term labour productivity. These systems are feasible only with economies of scale, and most Indian cities and towns provide the kind of scale required for sewage systems to be built and recover investment.

According to the 2011 census, India has over 50 cities with a million people. The number today is likely to be higher than that, because of the population growth since the last census, and migration trends towards urban areas. This makes mass transit, and other capital-intensive infrastructure, possible. This also helps increase the size of the domestic market through higher connectivity, providing incremental gains. By 2050, two-thirds of the global population will live in urban areas, and Indian urban growth will lead this statistic.⁷ So, these infrastructure projects need to catch up to present needs and deliver on the future needs of a growing population.

The positive side of this trend towards urbanisation is that urban areas tend to be far more productive and raise high revenues, and the higher

productivity achieved in urban areas will also make it feasible to pay for these projects. Unlike other parts of the world, Indian mass transit systems, like the Delhi metro, raise sufficient revenue to cover operating expenses relatively early.⁸ Like any mass transit system, the recovery of high capital costs takes time. But as the greater Delhi region (NCR) becomes larger each year, the increased revenue from increased productivity will go a long way towards making these projects feasible and maybe even profitable.

This important insight of economies of scale has already been recognised by the private sector. For instance, the Gurgaon Metro is the first mass transit system that is completely financed privately, and it gains enormously from being fully connected to the Delhi Metro. Another contemporary example of this is the Reliance JIO's 4G network, where the firm has taken on an enormously capital-intensive cost to provide 4G network across the country, hoping that the scale of the market will be large enough to recover costs and make profits in the future.

Following Smith's insight, as India develops these infrastructure systems, there is a potential to specialise in mass transit technology and sewage development and construction and even provide these specialised services to other parts of the world.

Network Goods and Effects

While a large market creates many gains like increase in productivity, specialisation, and economies of scale, there are particular goods, like network goods, which are suited only to large numbers of consumers. A network good is a good whose value to one consumer increases the more that *other* consumers use the good. Network goods seem to be dominated by larger markets, because the larger the network, the more any single consumer values the good. Classic network goods are telephones, email, or social media platforms like Facebook and WhatsApp. The value of the good or service is derived by the network of users of that service. A telephone line

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is of little use if no one else that the customer wants to call has a telephone connection. Similarly, there is little point in joining Facebook if no one else one knows or is interested in following is also on Facebook. By sheer headcount, India is the largest single market for these network goods.

India is already the largest market for network goods like Facebook and WhatsApp. This has implications on the content and direction taken by these firms. Their policies and content will be designed in the future to uniquely suit the Indian user. This is already visible as Netflix and Amazon compete for Indian customers. These are subscription services, without advertisements, and therefore the number of eyeballs watching their shows drives their profitability and therefore their content. In 2018 its broadband subscribers reached 512 million.⁹ The market for subscription content is exploding. Netflix, currently with half a million subscribers hopes to have 100 million subscribers in India in the coming decades, which is still a fraction of the total potential market. The infrastructure required for this kind of streaming service is already getting built in India, and Netflix hopes to capitalise on the existing infrastructure by creating content specific to the Indian market like *Sacred Games*. Amazon has already commissioned or bought shows across different Indian vernacular languages and developed content specific to the Indian viewer. As India grows richer, it will drive the content in the entertainment market.

In terms of driving the content, though not a network good, India is the leader in cricket viewing by a significant margin. More Indians view cricket than the next ten cricket playing/watching countries put together. And so, the Indian market and the Indian cricket board has enormous clout in the ICC, in terms of scheduling matches, the time of day a match is played, the bilateral agreements on broadcasting and advertising, etc. India playing a single tour in Australia, or England (historically the leading cricket playing nations), helps those countries recover their costs almost for a season or more. Many cricketing countries cannot survive without

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Indian viewership, and the number of eyeballs watching cricket is difficult to increase quickly in other countries. Consequently, India now attracts the best players for its IPL, as well as the best coaches, commentators, trainers, etc. The size of the market is enormous. This will soon be true for other sports and one can see the sports leagues from Mixed Martial Arts, NBA, soccer, etc. courting Indian audiences.

Network goods will see this effect in a far more pronounced fashion. Whether it is e-commerce giants like Amazon or streaming services like Netflix, these networks will develop only if they cater to the Indian customer, and consequently Indians can drive the direction of the technology and content. Just as the US is the largest exporter of movie entertainment, one day potentially India could be a larger exporter of streaming entertainment.

There is another category of network goods, that primarily cater to the Indian market and have potential for job creation in the Indian market. These jobs, unlike the manufacturing boom, are predominantly in the service sector. One obvious example is car services like Uber which employ local drivers. Delivery services like Amazon, which employ local labour for warehouse services, packaging, and delivery, are one example. Another is food delivery services like Swiggy and Zomato. The nature of this network good is to connect food providers with consumers through a delivery service. The nature of the service is such that both the food preparation and the delivery are necessarily local, and extremely labour-intensive. These kinds of network goods are becoming extremely popular and India is currently both the fastest-growing as well as the largest potential market.

Labour Law Reform

One crucial argument that is implicit in all the three areas discussed above is reforming labour laws. There are about 44 central labour laws, with a few dozen state amendments, that are often inconsistent. Hiring and firing workers, essential to the functioning of a dynamic economy, is made

impossible by laws such as the Industrial Disputes Act, 1947, which requires any firm with more than 100 employees to get government permission before firing workers or shutting the firm. The Contract Labour Act, 1970, does not allow firms to hire contract labour at will to meet the changing needs of the firm. This is accompanied by a labour inspection system with weak state capacity, which means that the rules are not well enforced, thus fostering a system of pernicious enforcement and corruption. Consequently, firms either substitute labour for capital, or create informal arrangements, making the labour force more vulnerable. India needs to eliminate the provisions discouraging firms from employing workers and, also, streamline labour regulation.

Another crucial aspect to moving into an economy where network goods are becoming increasingly important is to develop standard form contracts, or default contracts, for short-term labour engagements. Without developing sensible labour regulation that is designed to support the services and the network goods economy, India might lose the opportunity to have growth accompanied by job creation.

In the last few years, India has experienced what has been dubbed “jobless growth.” The Periodic Labour Force Survey (PLFS), conducted by the National Sample Survey Office (NSSO), reported the unemployment rate at 6.1% for 2017–18 — the highest in 45 years. The crisis is particularly acute for the youth. According to the leaked report, the unemployment rate for young urban men (aged between 15 and 29) is 18.7%. As unemployment rate reached a 45-year high, the labour participation rate also declined. Another important factor is that this level of employment was accompanied by over 7% growth of GDP per capita. This is another reason to amend labour laws and make it easier to have a range of employer-employee arrangements supporting long-term, short term, and flexible contracts: since in the future, much of the job growth is expected from the services sector and not from the agrarian or manufacturing sector. Contracts that

understand the nature of network goods — which are typically monopolies-increasingly regulated like utility carriers and cater to supporting relations of a single large employer in local markets, are crucial. Without this reform, India's large labour force will no longer remain a dividend, but become an economic and a social liability.

Conclusion

When GDP was growing at 1.5% each year for the first three decades, India was essentially a stagnant economy, where population growth was faster than the growth of the economy or the relevant public goods and services required to service all citizens. When India grew at 8% per annum, suddenly the fortunes of Indians changed, and we witnessed income doubling for many groups within a decade. Therefore, the most important policy imperative is economic growth, irrespective of global circumstances.

To pursue economic growth, irrespective of the circumstances in the world order, I make three separate economic arguments: (1) division of labour is limited by the extent of the market, (2) economies of scale are similarly limited by the scale in question, and (3) network goods provisioning depends on the size of the network. In all these areas, having the largest, single unified market in the world will benefit India immensely. And its strength will come from both its numbers, and the prosperity of its citizens. It's time to rid India of the old Malthusian overpopulation narrative and embrace its greatest asset — its human capital.



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