

A TRIPOLAR WORLD: INDIA, CHINA AND US



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**Indian Council for
Research on International
Economic Relations**



India Habitat Centre

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Foreword

The fast growth of Japan till the seventies led scholars to predict a '*Pacific Century*.' This talk gradually faded with the bursting of the 'Japanese Bubble,' but was revived with the rise of the Asian Tigers. Some called it the Asia-Pacific century while others predicted an '*Asian century*.' Such talk reached its peak before the Asian crises of 1997-98. In parallel, the world became recognizably unipolar with the collapse of the USSR. Since then talk of multi-polarity has been in the air, joined more recently by sounds of China's challenge to US uni-polarity.

This lecture presents a more radical thesis, that the World will be transformed into a Tripolar one by the middle of this century. It asserts that there is little possibility of the World becoming multi-polar. This view is based on the author's ICRIER Working Papers: "A *Tripolar Century*: USA, China and India", No 160, March 2005; "Economic Performance, Power Potential and Global Governance: Towards a New International Order," No 150, December 2004, and "China's Socialist Market Economy: Lessons of Success", ICRIER Occasional Policy Paper, April 2005.

One must recognize that long term forecasts have a very high degree of uncertainty. These risks do not however disappear if we assume that the future will be like the present (as most people tacitly do). Forecasts are essential for effective planning of National and International security policies. If the author's projections of the global economy approximate reality, they will have profound implications for the USA, India, European Union and Japan and the emergence of a New International order.

Arvind Virmani

Director & Chief Executive,
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Introduction

This presentation is about the economic basis of global power and the ‘power potential’ of nation states (WP 160). Power potential is measured by an index, first presented in a December paper (WP 150). This forms the foundation of relative power of countries and its evolution over the first half of the 21st century.

The correlation between ‘potential’ and ‘actual’ power is not however perfect. The economic basis of power really takes us only as far as the ‘power potential’ is concerned. Actual power depends on many other factors besides the economic. We will not go into details about these non-economic factors. There are very complex models built by people like Ashley Telles etc. to measure actual power.

Our basic approach is that the power potential of a country depends on its economic strength. The two papers use the same basic economic analysis and power potential indices to explore different aspects of international relations. Working Paper 150 discussed the implications of this approach for global governance and UN reforms, in terms of the natural balance of power. Working paper 160 focused on the balance of power between countries, the evolution of these balances till 2050 and the impact on international relations and international security. The focus of this lecture is on the issues raised in the latter paper.

In our formulation of economic strength the size of an economy, correctly measured and its growth play a critical role. The economic drivers of the changing balance of power are two developments: Globalization during the second half of the 20th century and in early 21st century and the phenomenon of ‘catch-up growth’ in Asia. This is the underlying driver of the forecasts for the set of 20 large countries that can be considered as potential global players.

To preview the results, we can think of three quarter centuries, ending in 2000, 2025 and 2050. The mean scenario that we present brings out clearly that the World is Uni-polar at the end of the first quarter, but will become bipolar at the end of the second and Tri polar at the end of the third. This is the fundamentally different conclusion of WP 160 and this lecture from that of scholars and statesman who have discussed and debated multi-polarity or uni-polarity till now.

The world currently gives the illusion of emerging multi-polarity because there are a number of powers today of comparable size or power (China, Japan, Germany, France, UK, Russia and India). Their power is, however, still a fraction of that of that of the USA so the world is clearly unipolar. The common/ implicit assumption of the multi-polar school has been that all/ most of these countries will grow relative to the USA and in co-operation convert the world into a multi-polar one. This presentation shows why this is improbable.

The key outcome will therefore be the emergence of two new powers China and India to make it a Tripolar World by the middle of the 21st century. Recalling Keynes' words that in the long run we are all dead, most practical men may prefer to focus on the medium term (till 2025). That is the bipolar challenge of China to US power, first in Asia and then perhaps on a wider canvas. Even in the medium term we show that India's role in the World economy and its Global power will become the third highest. India's relations with the USA and China will therefore play a critical role in Asian security and Global peace.

For a lot of people, talk about bi-polarity and 'balance of power' raises the specter of 'cold war' 'containment' and military alliances. In our view the 21st century is going to be different from the 19th and 20th centuries because of (a) the much higher degree (width and depth) of economic globalization and economic interdependence and (b) the possession of nuclear weapons by the great powers. The ways in which power is

expressed will gradually change and evolve. This will not however, make National power and military strength irrelevant (a la 'End of History'). Relative power and power relations will, we believe, still determine the risk of conflict and the emergence of a stable balance of power in Asia will be vital for peace.

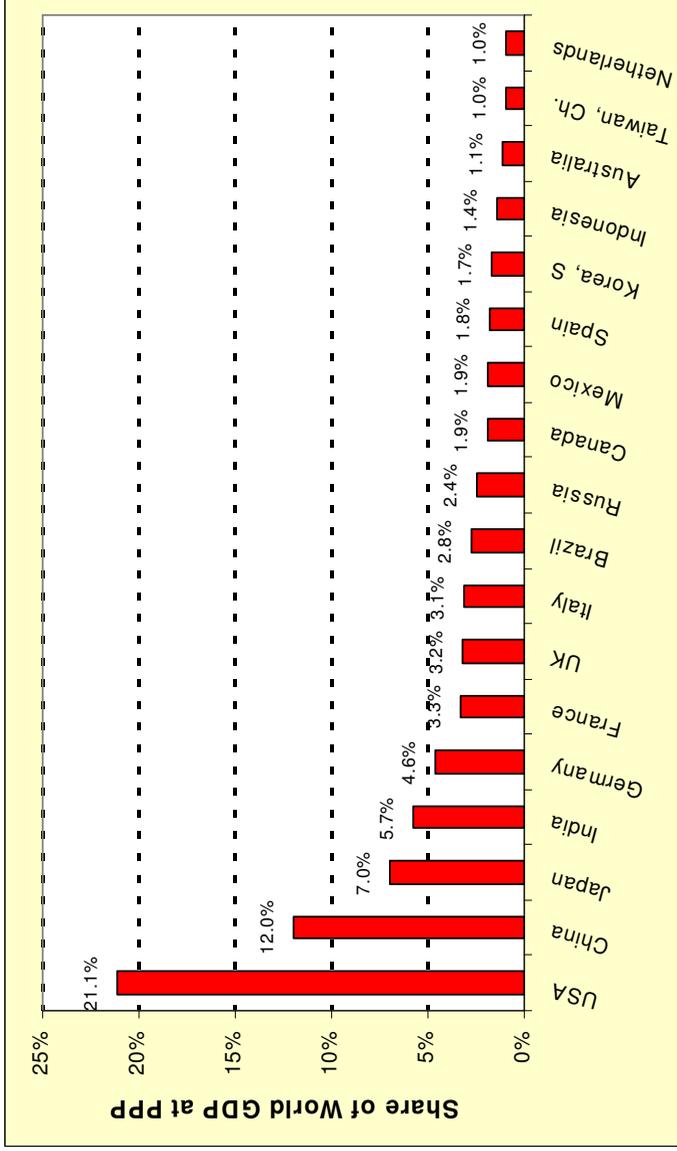
India-US partnership needs to be strengthened and India-China bilateral relations normalized. This will be in the interests of other Asian countries as it will enhance their security and freedom of action. We need to develop inclusive structures, perhaps an Asian Economic Community patterned on the EEC, that enhance mutually beneficial co-operation.

Economics of Power: Current Size

Let us start with the size of the economies, which is the basis of national power. The size of the economy has two components: Population and Per-capita Income ($GDP = Population * Per\ Capita\ GDP$). The size of the economy is critical to determining its relative power.

Figure 1 shows the share of world's GDP of the 18 largest countries. The countries have been ordered by size i.e. the share of GDP at purchasing power parity (ppp). The largest economy in the World, the USA is on the extreme left, followed by China, Japan and India. What this measure (PPP) does is to value every good and service (shirts, cars, milk, telephone calls, restaurant meals, soldiers etc.) at the same (relative) prices for every country.

Figure 1: Relative Size of Countries: Share of World GDP PPP



India is now the fourth largest economy with 6% of the World's GDP. There are two other things to note here. Firstly China is still half the size of the US Economy while India is half the size of the Chinese Economy. So, when we mention tripolarity, we are not talking about the current situation, which is very clearly *unipolar*. We are talking about the future -- what is going to happen in the next five, ten or more years.

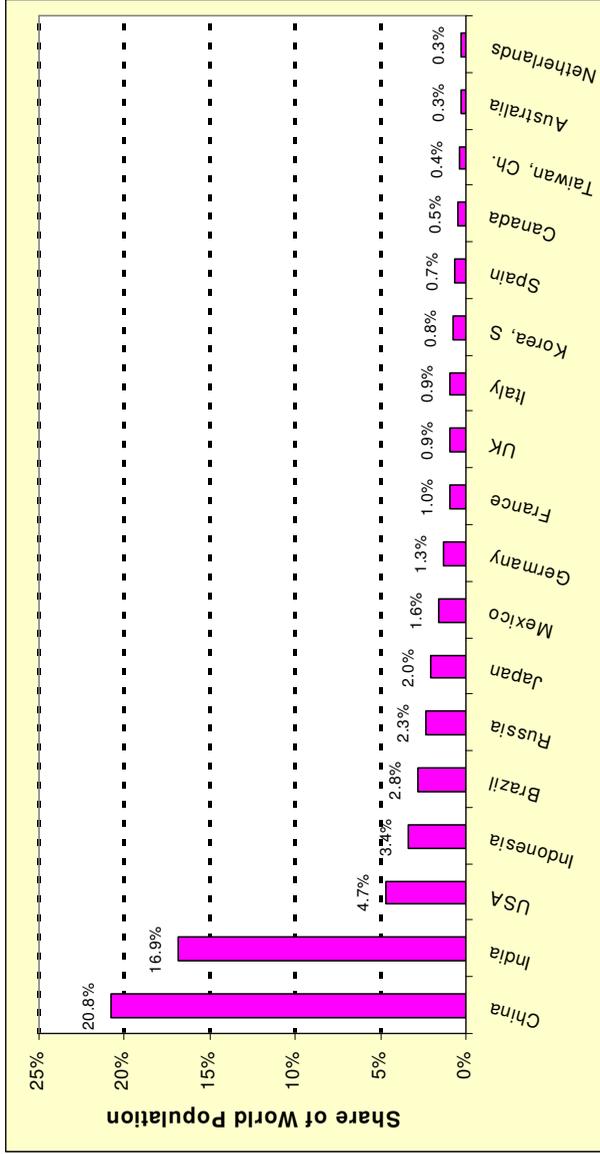
What about multipolarity? The other large rich countries, Japan is still the third largest and Germany the fifth largest, are past their peak in the sense that their size relative to the USA is likely to decline. And then there are a number of middle income countries such as Brazil and Russia, with less than 3% of World GDP. Though Brazil is a large important country, it must be kept in perspective. Its size is half that of India's economy, with the Russian economy even smaller.

Size: Population and Per Capita Income

Population is an important but relatively exogenous component of economic size, in that changes in it occur relatively slowly. Figure 2 shows the share of each country in global population ordered by population, with the most populated on the left. China, as is well known, has the largest population in the world, about 20% of the World total, followed by India with 17% of the World total. The USA the third most populated country has only 5% of the world's population, which is one third that of India and one fourth that of China. And this again will have implications for the future.

Ranked next to the US in population are Indonesia, Brazil and Russia. The last two have received a lot of positive attention in the recent past, but not the first. To the extent that population share is relevant to future potential, *Indonesia's* potential is greater than that of Brazil and Russia.

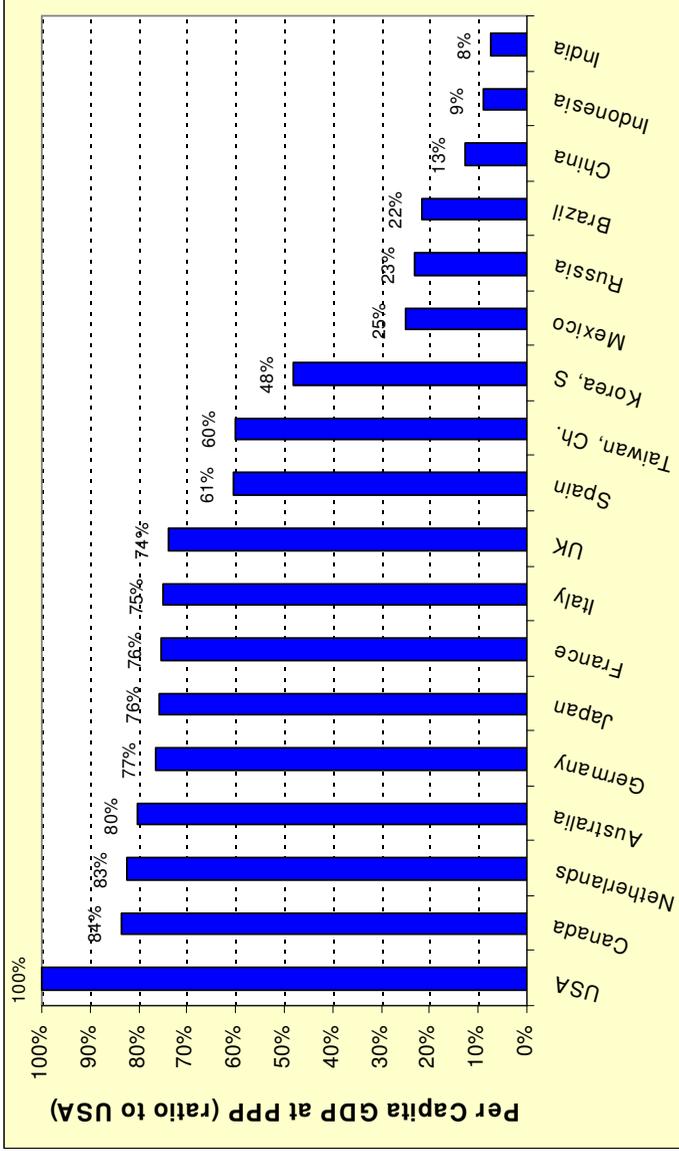
Figure 2 : Country Shares of World Population



The second component of size is per-capita income and in some ways that determines the potential for catch up. In Figure 3, the per capita GDP of each country is depicted relative to the USA which therefore is at 100%. The USA is followed by Canada the second richest among the large countries, Netherlands the third richest and so on. As you all know India is still a very poor country. Among the large countries India is at the bottom (extreme right) with per capita GDP about 8% that of the US. Indonesia is next with 13% of the per capita income of the USA. **Indonesia** has the greatest potential for catch up after India and can play an important role in the catch-up story once its political transformation stabilizes. Though China is now a lower-middle income country it is still relatively poor, coming just above Indonesia. It has the 3rd highest catch-up potential among the set of large countries.

Brazil and Russia, being 4th and 5th from the bottom among the large countries, also have catch-up potential. Just having the potential is however, not enough. Pritchett and others have shown that for the 200-300 countries constituting the world, income divergence (falling behind) is the norm not income convergence (catch-up). We will therefore have to show how and why the catch-up story applies to the countries that are the focus of our attention and conversely to which of these 18 large countries it does not apply.

Figure 3 : Relative Per Capita GDP



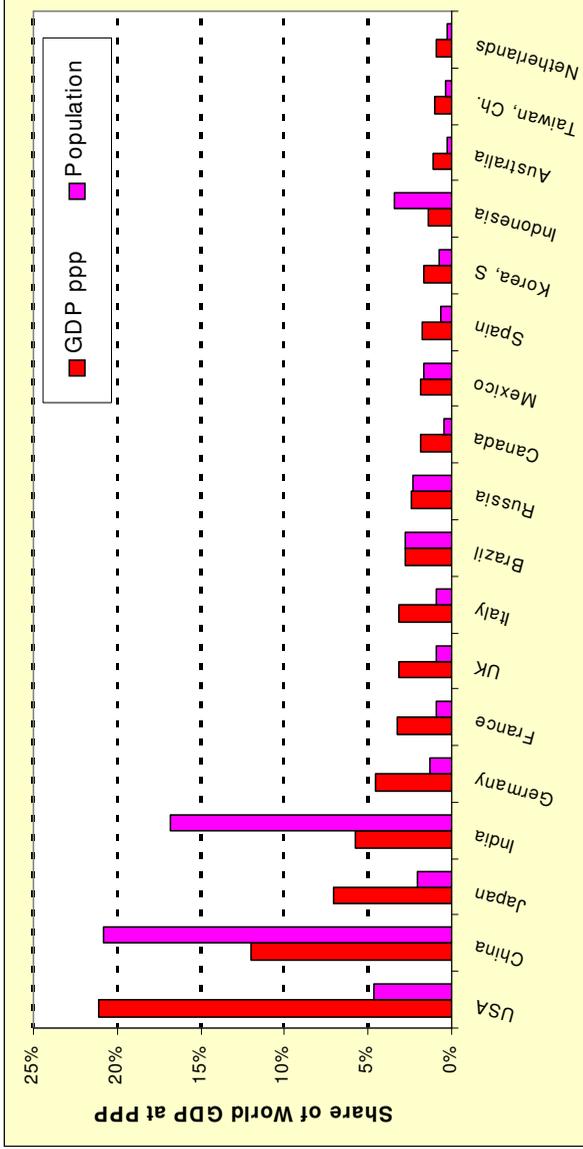
Global Economic Imbalances

Figure 4 shows each country's share of World GDP along with its share of world population, with countries ordered as in the figure 1. As you see here, US has a very high share of GDP while its population share is much lower. Three other countries, China, Japan, and India stand out clearly as having large differences.

More important at this stage, is the identification of the countries for which the gap is small i.e. the dog that did not bark! Brazil and Russia stand out as the only two among this group of countries whose share in World GDP is almost the same as their share in World population. In other words their current weight in the World economy is also their natural and due – there are no imbalances one way or another, that may be corrected in future. They are therefore not relevant in the context of the closing of such gaps.

If they grow at a rate faster than the World economy, they would develop a positive imbalance. However, even if Brazil grows at a rate that is 50% faster than our assumptions, this will not happen. Russia is projected by us to grow faster than the World economy, but its population will simultaneously decline. The scope for Russia to grow faster than our projections is limited. The global picture is therefore unlikely to be significantly affected by this over the next twenty-five years or so.

Figure 4 : Gaps Between GDP and Population Shares

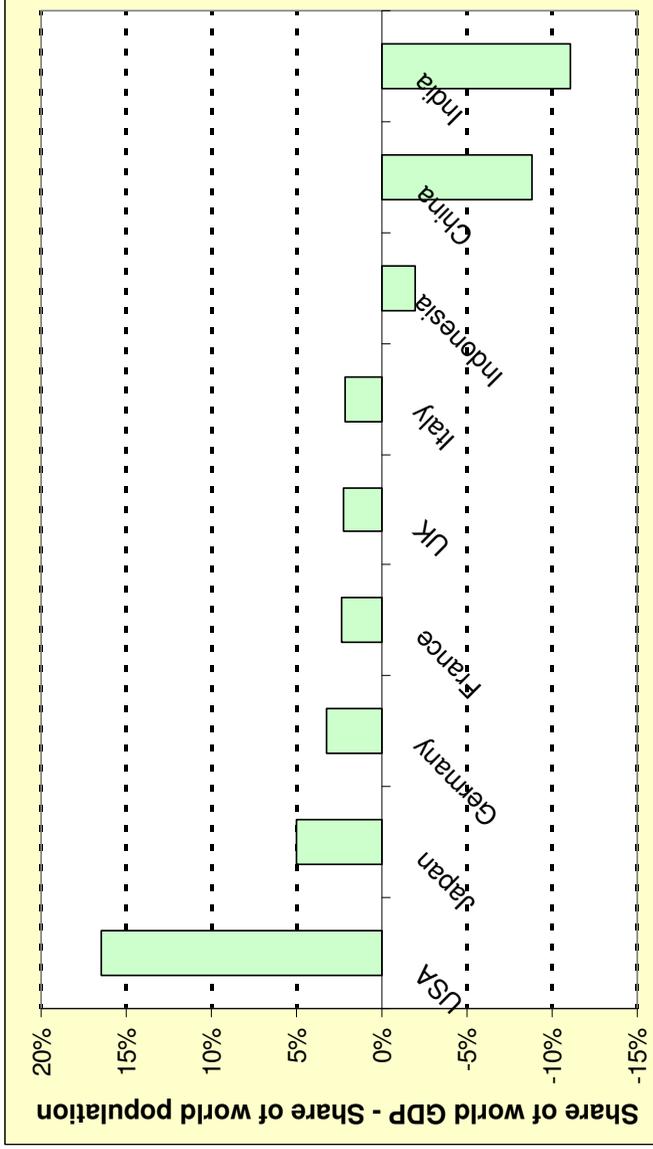


We can summarise these gaps in a new figure that clearly brings out the current global imbalances and their location. Figure 5 shows these global imbalances by subtracting each country's share of World GDP from its share of World Population. Thus for instance, the US's share of the world GDP minus the US's share of World population equals about 15% and it has positive imbalance of this amount. These imbalances and the extent to which they will be corrected will be critical to the future of Global power relations.

Figure 5 shows that there is positive divergence for the USA, Japan, Germany, France, UK and Italy. And there is negative divergence for *Indonesia, China and India*. The key element underlying our conclusions is the closing of these gaps over the 21st century.

The skeptics, quite rightly note that several of these gaps and imbalances have existed for two to three centuries, some since the start of the Industrial Revolution in 1600s. They can justifiably ask why we think these gaps are going to close in the 21st century? The answer to the skeptics is given by the performance of these countries in the past 25 years, to which we turn.

Figure 5 : Global Imbalance: GDP Share - Population Share



Economic Performance

The following table answers two related questions. Why we think catch-up growth is relevant and why the GDP-population share gaps identified above will close. Table 1 shows the growth rates of per capita GDP of the fastest growing medium-large economies in the world ranked by the rate of growth.

Table 1: Per capita GDP growth 1980 to 2003

<u>E c o n o m y</u>	<u>R a n k</u>	<u>A v g</u>
C h i n a , P R	1	8 . 2
K o r e a , R e p .	2	5 . 6
T a i w a n , C h i n a	3	5 . 3
T h a i l a n d	4	4 . 7
V i e t n a m	5	4 . 6
I r e l a n d	6	4 . 5
S i n g a p o r e	7	4 . 2
H o n g K o n g	8	3 . 9
I n d i a	9	3 . 7
L u x e m b o u r g	1 0	3 . 7
I n d o n e s i a	1 1	3 . 6
M a l a y s i a	1 2	3 . 6

The most noteworthy fact is that ten of the twelve fastest growing economies in the World over the last quarter century were in Asia. The rate of growth was faster than the rate of growth of the global economy. In other words **Asian countries have been Converging**. The second noteworthy fact is that five of these fast growing economies are also in the list of the 20 largest economies in the World. Three of these, India, China and Indonesia had the largest imbalance.

China as everyone knows, has been growing very fast – although its 8.2% per annum growth per capita has been rightly questioned by several eminent scholars. These scholars calculate that the growth rate may have been overestimated by 1 to 2.5%. Even if we reduce the official growth rate by 2% to 6.2%, China still remains the fastest growing economy in the world during the past 25 years.

What some may not know is that India has been the ninth fastest growing economy at 3.7% per annum over these 24 years. Table 1 shows that Indonesia, a country we highlighted earlier as having the third highest negative imbalance, comes out only a little behind India during this 24 year period. It may also be noted that S. Korea and Taiwan (China) are the only other large economies that figure in our list of the 10 fastest growing economies during this period.

Thus for the three economies with the largest imbalances, India, China and Indonesia the gap has been closing for the last 25 years. This has happened because economic policy reform has allowed them to exploit the opportunities opened up by globalization (which have themselves been expanding during this period), and to accelerate the pace of catch-up growth. We expect these three economies to continue this process of catch-up growth (at least) till they reach the high-income level, based on the assumption that they will continue the process of economic and institutional reform.

More specifically, China and India will remain among the 3 to 5 fastest growing economies in the world during the next 20 years or so. So we expect the gaps to close and the imbalances to be reduced over the next 50 years.

To summarize the main points, there is scope for catch up given the gap between India, China and the USA. India is still a low-income country, meaning a poor country. The income status is going to change to lower-middle income in the next five years or so, but poverty will not be eliminated for another 15

years. China is a lower middle income country. There is huge catch up potential for both countries.

In this context, a number of people working on economic growth issues talk about the innovative capacity of a country, the number of inventions etc. But in our view these matter only after a country reaches the high-income category and it really doesn't matter so much in the catch-up stage, when the country is going from low-income to high-income.

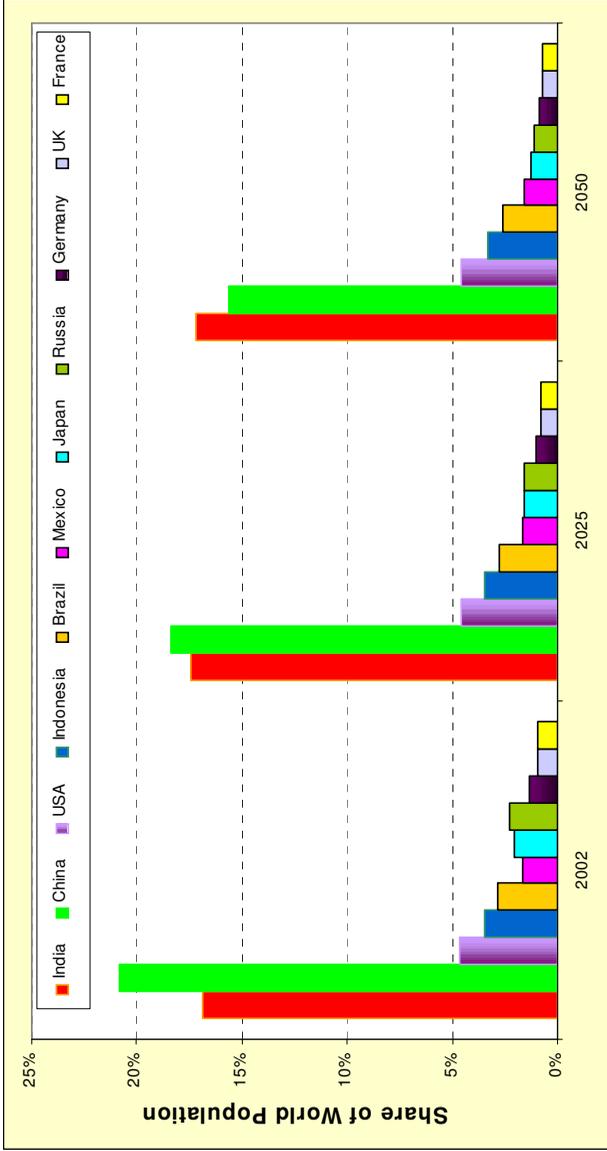
Population Projections: Tripolar Bias

To make projections for these economies we need population projections and per capita growth forecasts. The population projections are taken unmodified from the UN (2004). These are depicted in Figure 6 for 2025 and 2050, with the 2002 population shares also given for comparison.

The first point is that the US share of World population remains almost unchanged over these 50 years. There are two sets of changes over this period. One is in the relative population of China and India. China's population, which is currently larger than India's, is projected to become smaller by 2050, with the cross over occurring around 2035. The second is that Japan and Russia's population share (and to a lesser extent Germany's) will decline significantly, while the share of other countries declines marginally or remains unchanged, relative to the US.

The key insight that comes from the population comparison (current and projected) is that only two nations, China and India, are potential contenders for multi-polarity over the next fifty years. As the population of all others is a fraction of that of the USA and this fraction will either decline or remain unchanged, their per capita income would have to be significantly greater than that of the USA to reach comparable levels of GDP. There is little prospect of this happening in the next 25-50 years (based on our analysis).

Figure 6 : UN Population Projections



The European Union is often posited as a contender for multi-polarity in the medium-long run. There are two points to note in this case. The population of the EU as well as that of non-EU European countries is on a declining trend. Second, the EU could be a pole in a multi-polar world if it becomes a virtual State like the former Warsaw pact. This requires a surrender of national power to a European Union government. The consequent emasculation of national power is unlikely to be acceptable to the voters of the large member countries (France, UK, Germany, Italy, Netherlands) in the next 25 years.

Growth Projections

We turn next to the second component of the size forecast, the trends in growth of per capita GDP. On these the critical question is how quickly will China slow down and can India maintain or raise its growth rate? But before discussing the growth prospects of China and India in detail, we look at the overall projections. Table 2, presents the projected average growth of per capita GDP for each country by period. The countries are ordered by the growth rate in the first forecast period.

For China, based on the official figure of 8.2 for the past, we expect growth will slow down in the next 15 years to an average of around 6.6%. For India the growth rate is projected to rise over the next 15 years. The annual trend, is assumed in the projections underlying these averages, to reach 6% per annum by the beginning of the next decade, stay around that level for around 5 years and then start declining again. The peak rate will translate into a GDP growth rate of about 7% per annum given a population growth rate of about 1% per annum at that time.

Table 2 : Per Capita GDP Growth Projections

Table : Growth rate - per capita GDP at PPP					
	1980 -	2003 -	2016 -	2026 -	2036 -
	2002	2015	2025	2035	2050
China	8.2 %	6.6 %	5.6 %	4.9 %	4.0 %
India	3.6 %	5.2 %	6.0 %	5.7 %	4.8 %
Russia		4.9 %	4.5 %	4.1 %	3.6 %
Korea, S	5.7 %	4.3 %	4.0 %	3.7 %	2.6 %
Indonesia	3.7 %	3.3 %	3.7 %	3.6 %	3.5 %
Taiwan, Ch	5.4 %	3.3 %	3.1 %	3.0 %	2.3 %
Spain	2.3 %	3.0 %	2.8 %	2.6 %	2.2 %
Canada	1.6 %	2.5 %	2.3 %	2.2 %	2.2 %
Australia	2.0 %	2.5 %	2.4 %	2.1 %	2.2 %
UK	2.0 %	2.2 %	2.2 %	2.2 %	2.4 %
USA	1.8 %	2.0 %	2.0 %	2.0 %	2.0 %
Japan	2.0 %	1.8 %	2.0 %	2.1 %	2.0 %
France	1.6 %	1.8 %	2.0 %	2.1 %	2.3 %
Netherlands	1.8 %	1.8 %	2.0 %	2.0 %	2.0 %
Mexico	0.8 %	1.8 %	2.1 %	2.3 %	2.3 %
Italy	1.8 %	1.6 %	1.9 %	2.0 %	2.0 %
Germany	1.6 %	1.4 %	2.0 %	2.1 %	2.2 %
Brazil	0.7 %	0.7 %	1.5 %	1.5 %	2.2 %

Going down the table, Russia, Korea and Indonesia's growth also comes in high according to our estimates. This has implications for Korea, as pointed out to me by a renowned professor from Korea last week. In the case of Russia the growth rate assumption is perhaps a little higher than the average forecast. Our forecast for Japan is similarly optimistic relative to many who have doubts about its growth prospects. This is done deliberately to ensure neutrality vis-à-vis India.

The forecast for Brazil, based on its performance over the last 25-30 years is perhaps more pessimistic than one made by those who base their expectations on its stellar performance till the mid-1970s. The structural change that would be essential for moving the economy from the former to the latter forecast is however, not visible to many Brazilian observers. Even if Brazil grows at a rate 1.5 times the assumed rate the broad global scenario is unaffected.

China Forecast

To make the China forecast we had to look deeply at its economy. The outcome a policy paper (“China’s Socialist Market Economy: Lessons of Success,”- available on the ICRIER web site) based on which a presentation was made at a PREM seminar (World Bank, Washington) in April 2005.

The perspective of this paper is that China is a ‘socialist market economy’ – as per Chinese Communist Party (CCP) terminology. Focusing only on the ‘market’ part and ignoring the ‘socialist’ element can be very misleading. Oscar Lange’s(1938) book on ‘Market Socialism’ provides a useful starting point for understanding such an economy. We build a stylized model of the economy, to capture the main features of the 25 year, fast growth, period that will explain the growth performance and help us draw lessons for other countries. The key elements of this stylized model are as follows:

Market elements of China’s Socialist Market economy’ include product markets for goods, non-infrastructure services etc., basically the bright thing they did in 70s and 80s was to start freeing up the goods market. And of course FDI - the big emphasis on FDI and equally important is the freeing of foreign trade particularly exports. Till the 1980s imports and most exports were channeled through party/government controlled trading organizations and enterprises.

All other elements of the economy are under various degrees of socialist planning and control. All factors (Land, labor, capital) are under social control to an extent that is difficult to imagine in a market economy. Going to the other extreme of communist economy like Stalinist USSR or N Korea can be a convenient red herring! To talk about the banks in China, which are basically like government departments as if we

are considering a market economy can be highly misleading. We have here a former Deputy Governor of the RBI who oversaw the Nationalized banks in India. Even in the most interventionist phase, Indian banks enjoyed a lot of managerial freedom compared to China's banks. Having worked and lived in India we understand this. But most market people in the West have no experience or stylized model to comprehend how these things work in Communist party ruled China.

Infrastructure, in most developing countries is under State ownership or control. But in China the supply and price of infrastructure can be determined on an individual basis so as to channel subsidies (capital or revenue). Thus it is used to promote exports, attract FDI inflows and ensure technology transfer. The flip side is that detailed control always breeds corruption and we also have this in China.

The Chinese Communist party controls virtually everything in the country. Product markets exist and Foreign Direct Investors(FDI) have a relatively free market environment as the result of a deliberate decision of CCP (there is however, no legal / institutional constraint on their ability to interfere at will in these markets). Second, those using the USSR economic model to analyze China are led astray because the USSR was very centralized, whereas China is highly decentralized, in terms of governance and the government owned production structure. So China's socialist economy is a mix of centralization and decentralization and this must always be kept in mind.

Their goals and objectives are very clear. The objective is national power. With economic strength clearly recognized as the basis of power this translates into an objective of growth maximization subject to Chinese Communist Party retaining power. So the CCP leadership is very focused and this is ensured at all levels -- nation, province, city and firm. At a disaggregated level it is analogous to 'corporate capitalism' or corporate growth maximization in a market economy.

The growth maximization strategy leads directly to maximization of investment. This has two components – what may be called the ‘foundation of growth’ and the ‘engine of growth.’ The foundation of growth is public investment. In 1978 100% of the assets were owned by the government and the return on them was fairly high (24% for SOEs). As there is no pressure on the party/ government to distribute these profits to citizens/ consumers/ workers it can invest 100% of these profits. This makes possible a very high rate of public investment without introducing distorting taxes. Though the governments share of assets has declined (perhaps by 5-10%) as has the rate of return (6% in SOEs), this socialist element (heritage), when coupled with product market competition, has proved advantageous. Thus despite public sector inefficiency, public investment has been one of the drivers of growth.

The engine of growth is FDI and coupled with exports is the big driver of economic growth. There is a consensus among China scholars that export-led growth a la ASEAN has been an important driver of growth. Two additional points emerge from our analysis. One that it is much more of an FDI-export led growth (even more so than in Singapore which come closest) than in ASEAN countries. Two, all exports are not necessarily as competitive as labor-intensive exports associated with non-resident Chinese entrepreneurs (FDI). Many capital/skill intensive exports may be fueled by direct or indirect subsidies. These subsidies may be hidden in supply of intermediate goods from SOEs, in infrastructure supply and its pricing and in the so called Non-performing assets of Banks.

There is a flip-side to China’s success. On each area of successful policy there is a weakness. For instance, China’s clear growth objective is a great strength but it also means they did bother too much about the income distribution, which has worsened tremendously. Similarly the FDI-export model has

risks which have been shown in the Asian crisis and are more serious for China, because the build-up of *public capacity* can only be sustained through exports (vent for surplus or export at any cost).

Our conclusion is that the growth rate will decline gradually and not collapse. This differs from two important schools of thought. One, which argues that the contradiction between ‘Market economy’ and ‘Stalinist politics’ will result in a Chinese collapse. In our view the possibility of this happening while it is a middle income country is remote. The other school argues that China can grow even faster if the socialist part of the economy is transformed into a market one. We disagree. In our view the strengths and weakness of China’s current system are two sides of the same coin. Surgically excising the weakness will also remove the strength. Gradual reform of the sources of weakness while building alternatives to past strength can however sustain growth till the country reaches high income levels. The rate of growth, will however, decelerate. More fundamental changes may become necessary at high income levels and the probability of sharper slow down will rise if these are not made.

India Forecast

In the case of India, you may recall we made an assumption that its growth rate will rise in the future. One reason for this assumption is what we call the “*J curve of liberalization*,” by analogy with the “J curve” in the foreign trade literature. Our hypothesis is as follows. When a country undergoes dramatic reforms (the kind initiated by Dr Manmohan Singh and implemented by Mr. Montek S Ahluwalia), any negative effects are immediate, but the positive effects take time to appear. That is because of immobility of capital and the S-curve of technology diffusion: Un-competitive lines of

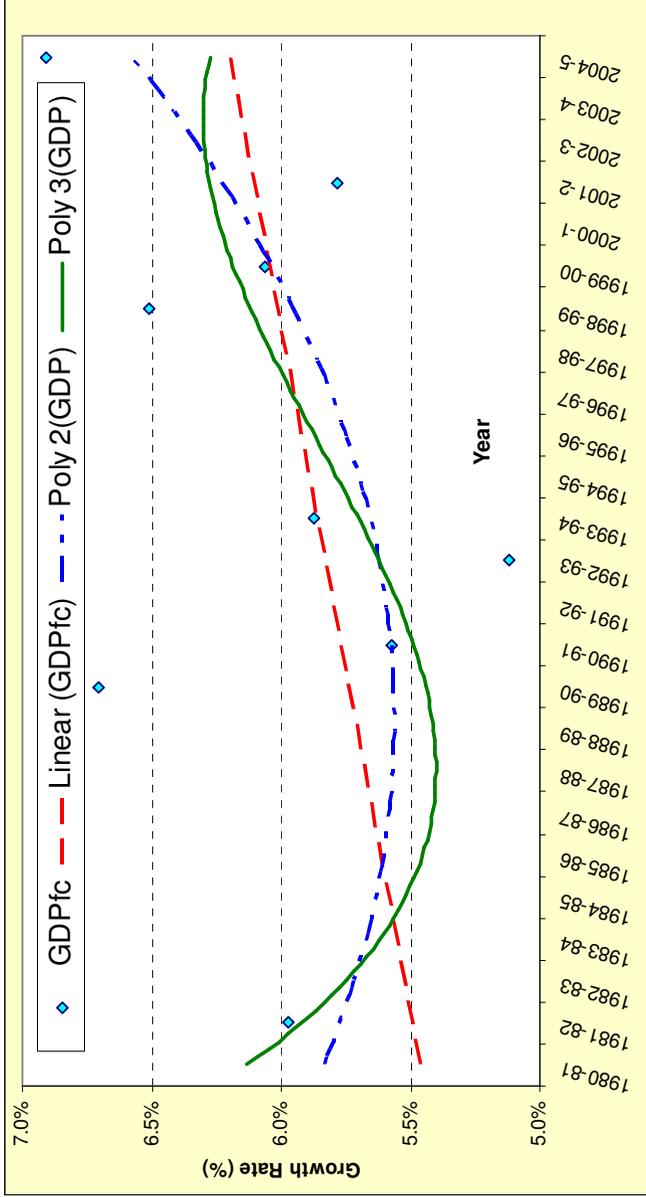
production are immediately affected, with profitability and measured productivity falling dramatically, as capital cannot be shifted to other uses. Though new competitive lines of production emerge, it takes time to develop them by acquiring technology and making investment. The diffusion of technology takes time. So you get the negative effect immediately while the positive effects build up gradually.

So what we've seen so far in India is a rise in growth rate by about 0.6%. It is about 6.1% for the 12 years since the 1990 reforms started. Figure 7 shows that the underlying growth trend is rising. We believe that it will go up to about 6.5% as a result of the reforms which have already happened.

Further reforms (see e.g. Accelerating Growth and Poverty Reduction, Academic Foundation, February 2004 or Mid-term appraisal of the 10th Plan) can raise this growth rate further. We forecast that these reforms will continue at the average pace seen so far and as a consequence the growth rate will gradually rise to 7% and stay there for about ten years (i.e. growth forecast is conditional on forecast of continuing reforms). In principle, the growth rate could be accelerate above 7% (slow below 6.5%) if the pace of reform accelerates above (slows down below) the average pace seen so far.

For the India skeptics, who generally forecast a GDP growth rate of 5% to 5.5%, there are six other factors, which will support a rise in India's growth rate above its current level. One, is the increasing share of business service in GDP. Till the 1990s this share was very small, so the double digit growth of IT & ITES exports had a very small effect on GDP growth. The size of the sector is now large enough for the continuing double digit growth of service exports to have a visible impact on GDP growth. During this and the next decade the effect of fast growth of business service exports will be to raise overall growth by 0.5% to 1.5% point per annum.

Figure 7 J – Curve of Liberalization: India’s Rising Growth Trend



The second positive factor is the demographic transition and demographic bonus. We have seen in many countries including East Asia and China, that this raises the growth rate. Based on these studies we estimate that the demographic bonus could raise India's growth rate by 0.5% to 0.8 % point per annum. Further, India will have the youngest labor force in the world, when most advanced countries are aging rapidly. This will increase the demand for “*youth intensive*” exports from India.

The third factor is strong *indigenous entrepreneurship*. A Harvard Business School study has shown that India's growth has been fuelled by domestic entrepreneurship in contrast to China which is basically driven by FDI. Another study puts the impact of FDI on China's growth at 3% points per annum. We estimate that if India can double its FDI from \$ 4 bi. to \$ 8 bi. there could be a growth bonus of around 1%.

The fourth factor, is India's large institutional and social capital based on its culture and civilisation. There are studies by Rodrik and others, which say that India's growth is about 15% lower than is predicted by the quality of its institutions. Though old (mainly govt) institutions have deteriorated this has been offset by the development of new ones like non-profit organizations (NGOs) and an independent media. Though China also had civilisational strengths, institutions related to the market were deliberately destroyed (entrepreneurs killed) by the Communist revolution.

The fifth is the *Global Indian manager*. Most of our managers are used to dealing with very diverse religious, ethnic, sub cultural bunch of workers, colleagues and consumers. We are therefore advantageously placed in the emerging globalized economy.

Sixth is what we call *under-utilized brains*. When media reports how intelligent/brainy/skilled we are and how we are taking the world by brain storm, my reaction is a bit

unconventional. The IQ (Intelligent Quotient) distribution is universal and applicable to all sub-populations of the World. The top 2% and 10% of any country/world's population can be classified as brilliant and very bright respectively. For India this means 20 mi brilliant and 100 mi very bright people. Earlier most of them were either hidden in remote rural areas or were condemned to the job of clerks in Delhi or taxi drivers in Mumbai. The big change is that globalization and economic reforms is making it possible to utilize more and more of these underutilized brains in Silicon Valley and Bangalore.

Many visitors to India ask me whether India will be able to maintain its growth rate given the poverty and income distribution. Underlying the questions are the horrifying experience of seeing real poor people, perhaps for the first time in their life (on their way from the airport). The following is addressed to them.

Why are there are lots of poor people in India? Because India is a low income i.e. poor country and our population is large. India's average per capita income is less than Indonesia's and much less than (lower-middle income) China's. A poverty rate of 23% (judgement based on a review done at ICRIER) translates into 230 million poor people. That is larger than the population of every country in the world except USA and China. India is a free country, the poor can live and work anywhere. They gravitate naturally to where the jobs are, normally in the high growth cities and towns. Misguided urban policies (e.g. Urban land ceilings, Rent control) make returns negative on private provision of one room apartments for the poor, and concentrate them in illegal slums. This means high visibility in Mumbai, Delhi etc. The fact that a lot of poor people are visible on the drive from the airport to the city does not mean that poverty is increasing or income distribution is bad!

For this we have to look at the comparative statistics across countries (e.g. WDR 2005): In terms of the Gini Co-

efficient, a widely accepted measure of distribution, India comes in the top quarter of countries (31 out of 127 countries). In contrast, China is in the bottom third (91 out of 127 countries). Another fact, which is not well known is that the consumption share of the poorest (bottom) 10% of India's people, is the 6th highest in the world out of 127 countries. If there is no contest between India and China on economic growth, this is equally true in reverse with respect to income distribution.

There is one great weakness in India, the deterioration in governance. This is our biggest challenge. The excellent governing institutions of the 1950s have been deteriorating over the last 30 years. This has affected the provision of public goods and services (Police, Legal system, Administration, Agriculture R&D & extension, recharge of aquifers, roads). Over time it is going to effect growth. So political reforms are needed but happen slowly. Governance reforms will take place, because we have a free and responsible media, judiciary and NGOs. Dr. Manmohan Singh has the knowledge and statesmanship to undertake long term reforms that do not have immediate pay-offs.

Global Scenario

Now we come to the mean scenario. Figure 8 shows the projections for each country's GDP at purchasing power parity (ppp) relative to the USA. The line in the middle which is at 100% therefore represents the USA, which is also growing, but its ratio to itself is by definition constant (flat line). One of the two striking results of this projection is the exponential rise of China's economy (pink rectangle).

Though the basic facts about China's rise are known, perhaps the exponential nature of this rise in the 21st century was not fully comprehended. In fact a knowledgeable American told me about a year ago, that the US CIA's (US Central Intelligence

Agency) projections for China were of moderate (not serious) concern to analysts and decision makers. The CIA projections of a year ago merely talked about India being a swing economy/power. Late in 2004-5 a CIA assessment was put in the public domain that for the first time expressed some concern about China and also acknowledged the positive global role that India could play. This assessment must have been done around the same time as our first projections till 2035 (WP 150, December 2004). Both the Working papers have been sent to scholars, journals and decision makers in the US.

One is not aware of any study that brings out as clearly as Figure 8 the dramatic rise of China and its competitive challenge to the USA. It, shows that China's economy will equal that of the US within 10 years and could by 2050 be double that of US. This has huge implications for the US, which they still do not put a very high probability on. This is our mean scenario with a probability of 75%.

The second striking result of this exercise is the equally dramatic rise of India (purple triangles) a couple of decades behind China. This is something, which was clearly not recognized by anybody. Right now India is the fourth largest economy, but its size is close to many other countries. The projection shows that within five years India's economy will be larger than Japan's.

Within 20 years India will become the third most important economy in the World. Though not self evident today this will become quite clear, even to skeptics, in 10-15 years. This forecast is quite conservative, as the GDP growth rate is assumed to be less than 6.5% during the rest of this decade and rising gradually to a maximum of 7% during the next decade. This contrasts with the forecasts by many financial analysts and business organizations of 7% to 8% growth, which is also the revised target for India's 10th Five Year Plan.

Figure 8 : GDP at ppp (relative to the USA)

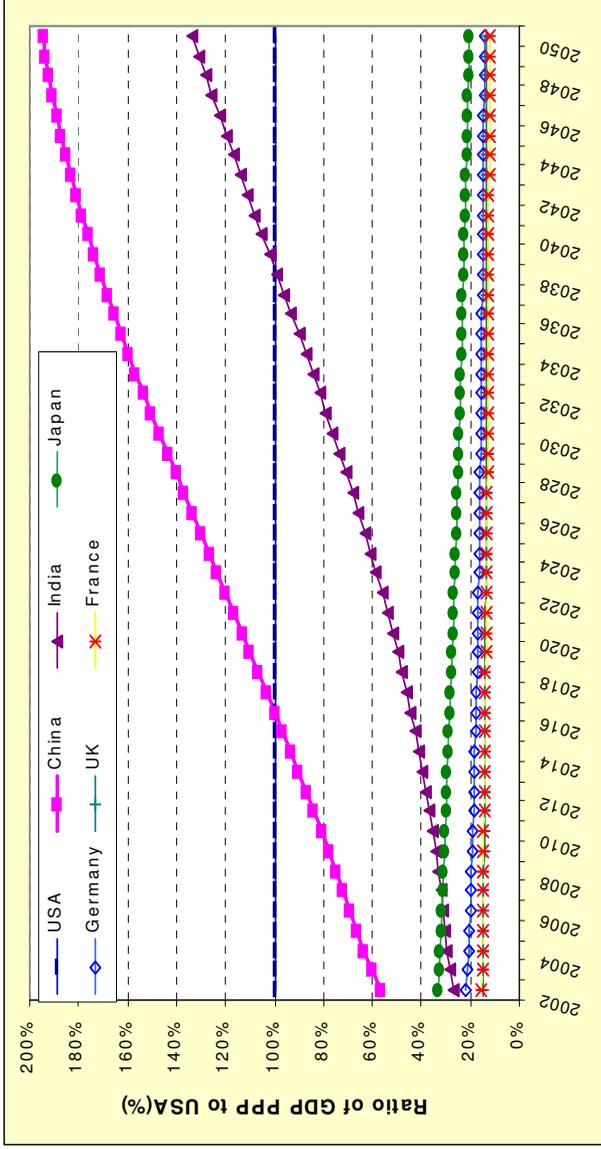


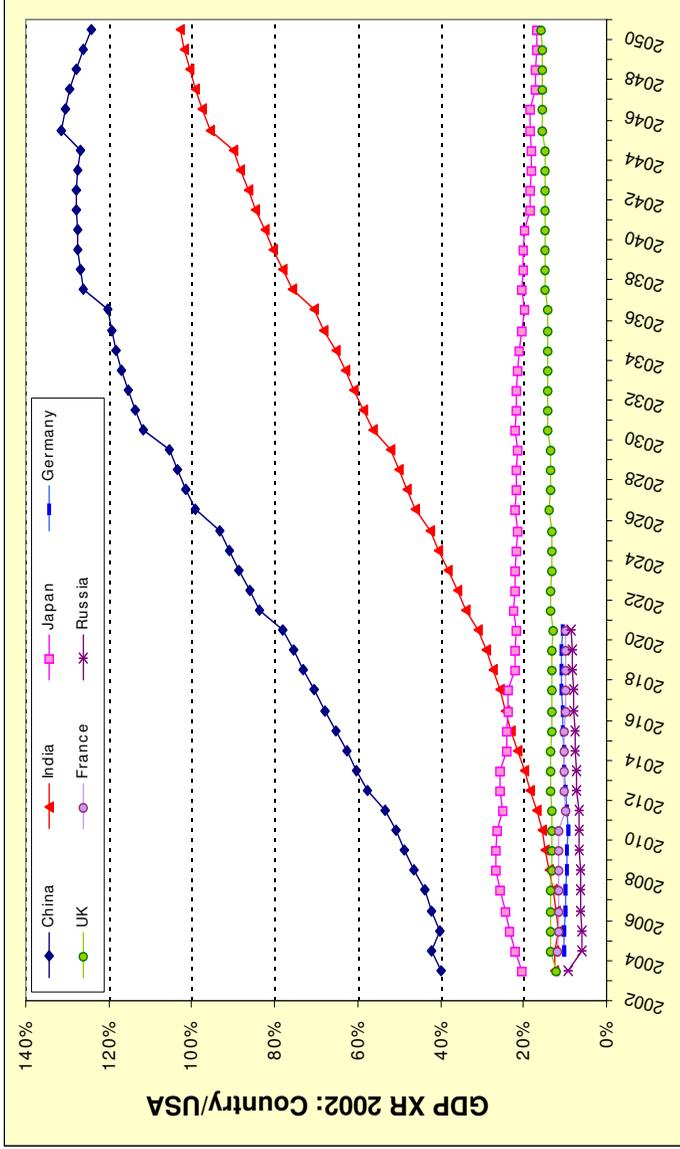
Figure 8 shows that **by 2040 India's economy would become as large as the US economy** (conditioned on maintaining the pace of our policy reforms). This is the second major implication of the projections, a point not made previously by any scholar (to our knowledge). The projected development will transform the global economy and international relations.

Recall that the measurement of economic size /GDP is at Purchasing Power Parity (ppp), because there is no other way to compare the size of different economies. The potential impact on the world economy -- the economic impact on other countries in terms of trade, capital flows etc, is however, not very well measured by GDP ppp. So we can do some alternative projections that measure the incremental impact of GDP on the World economy.

Figure 9 shows the annual change in GDP measured in terms of 2002 exchange rates and prices for each country (the usual widely available measure of GDP) relative to the annual change for the USA. Though the Chinese economy is now the second most important in terms of annual impact, it will take around a quarter century for it to equal that of the USA. Many have recognized China's influence on the world economy. Despite our 1999 forecast (paper on ICRIER website), few have realized that *within ten years India's impact on the world economy will equal that of Japan and in 15 years will exceed it.*

This has implications for our fundamental approach to the outside world. We must abandon our post-colonial, pre-independence fears and self perception of a small helpless non-aligned (African/Caribbean/Pacific) country buffeted by the rich and powerful ones. Acting confidently does not, however, mean amnesia about our high poverty or illiteracy rate (30%), nor should it lead to a slackening of efforts to reform economic policy and institutions.

Figure 9 : Change in GDP (at 2002 exchange rate)



To summarize, China is already the second largest growth driver after the USA, while India will overtake UK in about three years to rank 4th in terms of incremental impact. India will overtake Japan in about ten years in terms of incremental importance. If we look 20 years and beyond, China will likely overtake the US in first place within 25 years and India's incremental impact could become the second largest by mid-century.

Index of Power Potential

Given these economic facts we move on to the power potential index that we have constructed, the details of which are in the working paper (#160 & 150). Compared to the complex models built by others, it is a very simple concept. Basically we identify a proxy for technology and put a weight on it that is additional to its natural weight in the aggregate production function of an economy. The production function expressed in per capita terms, adequately captures the technological capabilities, skills and capital needed to produce output at that level. In a globalized economy, if all technical flows are free and subject only to commercial considerations, the size of the economy adequately measures its power potential, as the inherent capability can be used to produce/procure any set of goods or services.

However, it does not adequately measure a country's power potential when there are controls on strategic and dual use technology. As strategic technology is restricted and not subject to the normal commercial considerations, a country needs to develop its own strategic technology. Relative per capita GDP is an adequate measure of a country's relative capability to develop and use new technology. Therefore to measure the power potential we put a weighting factor on per capita GDP vis a vis

population. For various reasons it is reasonable to assume a weight of 0.5.

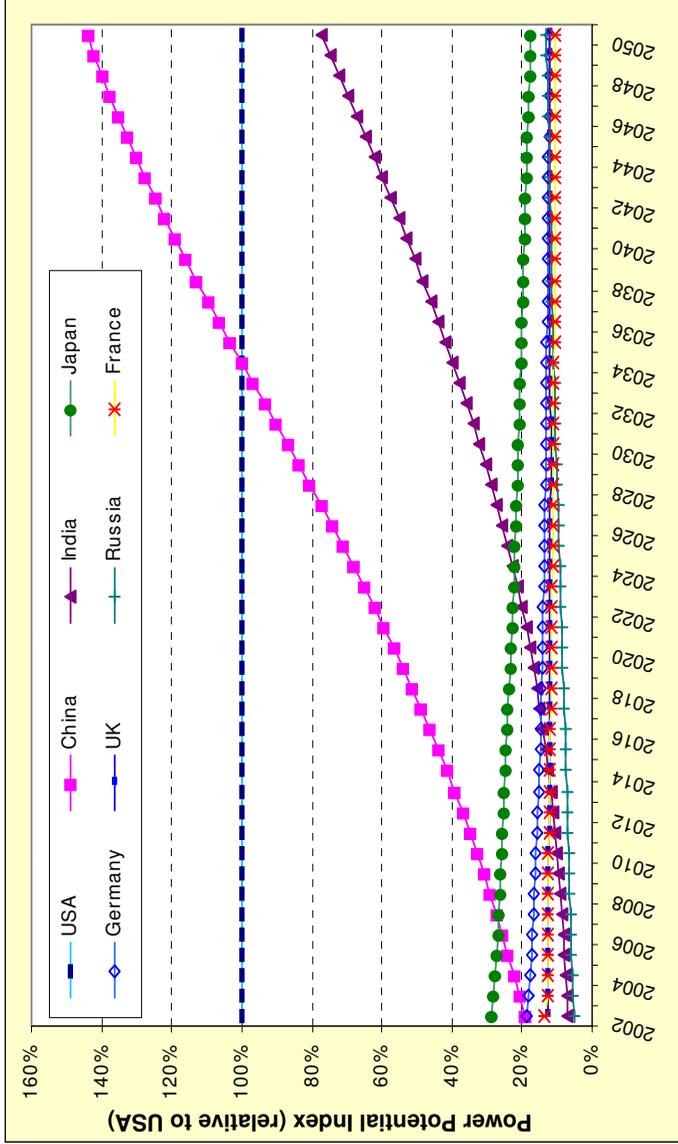
As mentioned earlier one should not take ‘potential power’ as ‘actual power’ Ours is an index of power potential and not actual power. Actual power depends on many other things such as the will or desire of a country to be globally powerful. For example, after the world war Japan consciously abandoned ‘will to power’ by aligning with the USA and following its foreign policy. So if a country doesn’t have the will to become powerful it will not become so. Another factor is the allocation of funds among different public goods such as strategic R & D and defense. This choice can change the actual power. The third element is alliances. There are many countries (such as Israel), because of their alliances with other countries have benefited greatly through transfer of technology and equipment. The resources so saved can be used for other public goods thus multiplying the benefit in terms of power.

Tripolar World

Figure 10 shows the evolution of the power potential, based on our index with a parameter value of 0.5. In contrast to the earlier graph of economic size, this has greater implications for foreign relations’ etc. The evolution of power potential is more reassuring for the US. It will be at least 20 years, before China’s power potential will get within hailing distance of the USA. Similarly, it will take another fifty years before India’s power potential gets close to the US.

At the same time we must remember that power does not have to be exactly equal among three countries for the world to become Tripolar. Though it is hard to be precise, when the power potential of the challenger reaches 40% or 50% of the incumbent the former is likely to become another pole.

Figure 10: Power Potential: PPI (a=0.5)



The reason why Japan, UK, Germany and others cannot challenge the US today is because they have less than 20% of its power potential. And as the figure shows, Japan's power potential will remain highly significant during the next 50 years despite its declining trend arising from a shrinking population. Russia, which is projected to increase its power potential gradually doesn't increase it significantly. Even if Russia catches up in terms of income (as projected), a population decline of 25% will offset part of its impact on size and power potential. The position is similar for many other countries.

Our index suggests that China's power may equal that of the USA in 30 years. What is the reason for this? China's population will be about 3.8 times that of the US in 2035 and its per capita income about 43% of that of the US. At this point its GDP ppp will be 1.6 times that of the USA. The technological disadvantage of lower per capita income is thus implicitly offset by the advantage of larger scale to produce an economy with equivalent power potential. A further increase in China's per capita income relative to the US, after 2035 could make it more powerful than the USA. There is however, a probability of its growth rate slowing more sharply than we have assumed, after it reaches high income levels between 2025 & 2030.

China – India Gaps

Figure 11 shows the evolution of India's size and power relative to China's. The upper line is the relative GDP (ppp) and the lower one is relative power. Twenty five years ago, India's GDP was larger than that of China (not shown). Over the last 20 years it has fallen behind and is now less than 50% of China's. Its relative power has declined even more rapidly. In terms of the mean scenario this gap is going to increase till about the middle of the next decade and thereafter it will start closing. The gap

will not close completely till the last quarter of the century because China is projected to continue to grow faster than the global economy till then.

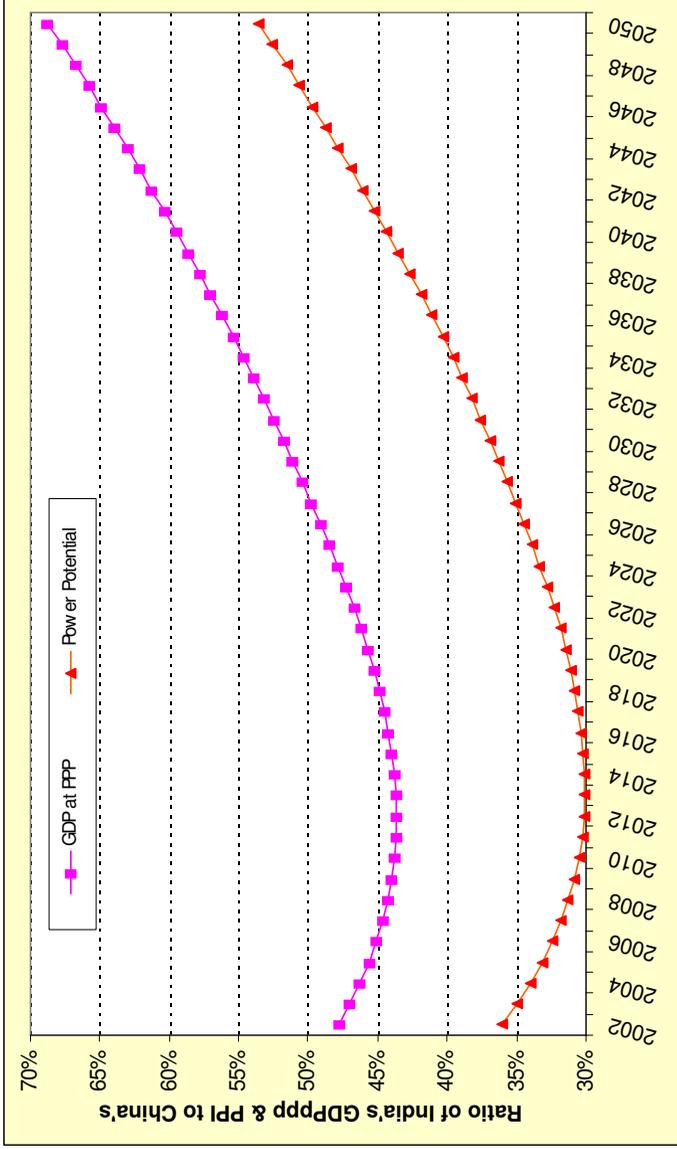
We believe that it is in the interest of the advanced democratic countries, including the USA, to help India close this gap as rapidly as possible. There are several reasons. One is philosophical. Both as peoples and nations we share fundamental human and democratic values & aspirations, whose propagation and strengthening will make the world a better place for all.

Two, is pragmatic self interest. A more symmetric balance of power in Asia will reduce the risk of conflict in Asia and increase the freedom of action of the smaller Asian countries. This in turn will have two economic benefits for advanced countries. (i) It will expand the scope for profitable economic interactions (trade, capital flows etc.) with all countries of Asia. (ii) It will ensure that the economic policies of smaller countries are not biased towards one Asian neighbor at the expense of all democratic countries.

Three is correction of past mistakes. The ban on transfer of Dual use and strategic technology to India after its 1974 nuclear test constrained India's growth and development. China was positively favored (space, missile & defense technology) and Pakistani transgressions (illegal purchases from Netherlands, Germany & the USA, transfers by NPT signatory China, ISI-Khan black market network) were ignored. In contrast, India was even denied fuel for its civilian nuclear power plant (Tarapur). These policies are partly responsible for the opening of the gap and should be reversed to close it.

India must aim to get complete exemption from the post-1974 controls on technology transfer, whether incorporated in old or new denial regimes. India's democratic polity (including the 220 mi poor) will not accept the expenditure of limited tax resources on responsibilities undertaken for countries that deny it technology needed for development.

Figure 11 : India/China: GDP at PPP and power potential



Conclusions

To summarize, we believe there is a very high probability that in terms of global power, the world will become bipolar by 2025 and tri polar by 2050. India will be the weakest pole in this tri polar world of the 21st century, according to the mean scenario underlying these conclusions. China's economy is likely to equal the US economy in size by 2020 and to become about twice its size by 2050. By then, India will be the second largest economy (ppp), having overtaken the USA around 2040. The gap in 'power potential' between China and the USA will be eliminated by 2040. China's economy/power in 2050 will likely be about 20% smaller/less than that of the US and India combined. The balance of power among the three countries USA, China and India and the relationship between them will be critical to the peace and stability in Asia and the World.

China's economy and power in 2050 will equal that of the six larger democracies of Asia - India, Japan, Indonesia, Russia, South Korea, and Australia. This makes it imperative for them to increase economic and technological co-operation among themselves so as to preserve their freedom of action.

The predicted emergence of a tri polar world has important implications for relations between the USA, India and China. From India's perspective there are two implications. First, an *India-US partnership for peace* in Asia is in the interests of both countries. Second, China and India must normalize and strengthen bilateral relations, to the point that they are no weaker than China-USA and China-Japan relations were at their high point.

Strengthening of US-India relations has to be viewed from a 21st century perspective in which every economy will continue to engage all the others in this globalised world economy. The 19th and 20th century concepts of military alliances and containment are not appropriate. A partnership

between India and the USA means a quantum jump in the width and depth of mutually beneficial economic relations and technology transfers. As it is in the mutual interest of the USA and India, both (particularly their democratic representatives & bureaucrats) need to think in new ways.

Among the steps that could be taken are,

- (1) A comprehensive economic cooperation agreement (Indo-US CECA) covering trade, FDI and movement of professionals.
- (2) Strategic partnership whose elements are, (a) De-control of dual-use technology transfer to India. (b) Free trade with India in Nuclear plants, equipment & materials. (c) Defense technology transfer to India. (c) Cooperation in space (production, launch etc.). (e) Joint R&D in strategic and defense systems.
- (3) Co-production of defense systems (including naval vessels).
- (4) Due role in global governance (permanent seat with veto in UNSC).

It is equally important to normalize the relationship between India & China as this is going to be critical for peace and security in Asia. Fortunately, the first steps in this direction have already been taken. An ICRIER study by Amita Batra has shown that there is a large un-utilized or un-actualized bilateral trade potential. This should be fully exploited for mutual benefit by removing trade barriers and constraints and by facilitating better communications and transport.

In addition, there are three keys to developing trust and enhanced cooperation between China and India (and China being the stronger country will have to take some positive steps). First, a fair and equitable border settlement, at least no worse than what was offered by the Chinese Premier Chou En Lai in the 1960s. Second, stop nuclear proliferation to countries that are hostile to us. Only the proverbial Ostrich can miss the implications of Chinese atomic bomb designs found in Libya, courtesy Dr A Q Khan & Pakistani military rulers. And third, realize India's due role in Asia and the world.

On the first and third steps, I think China has already begun to move. This is indicated by the first concrete steps to a border settlement and a public statement that China would not oppose India's permanent membership in UN Security Council and possibly even veto power. The lifting off that opposition is a positive step. The second issue is still left (with routine denials about passing on bomb/missile technology to various countries).

Besides improving bilateral relations, we need to build inclusive economic structures. Though the 21st century is going to be different from the 20th, there is nothing automatic about it. Imbalances in power can still result in conflict. We need to build structures of interaction that will reduce the threat of conflict and enhance the gains from peace. European history provides some lessons. The European Commission started with the iron and steel community and the coal community. Perhaps we can learn from that history. India's oil minister has initiated oil and energy cooperation and we could think of building an Asian oil and energy community. Indian Prime Minister has talked about building an Asian Economic Community. India is taking an active positive role in East Asia and has recently been invited to the plenary session of the East Asian Economic Community. That could be a step towards the Asian Economic Community.

And finally, a USA-India partnership does not mean abandonment of multiple interests and multi polar diplomacy by either country. The USA will continue to pursue its interests in Asia (Pakistan, Iraq, N Korea, Iran) regardless. India *must* obtain the frontier strategic technologies wherever they are available (e.g. Russia, France) and develop those that are unavailable but necessary for its independence and security (ICBMs, nuclear ballistic-missile submarines).

Thank you.

About the Author

Dr. Arvind Virmani is Professor and Director (Chief Executive), Indian Council for Research on International Economic Relations (ICRIER). He is a Member of the Telecom Regulatory Authority of India (TRAI), Chairman, Board of Trustees of SBI Mutual Fund and Member of the Board of Life Insurance Corporation of India (LIC). He is a Member of the Technical Advisory Committee (TAC) on Money, Foreign Exchange and Government Securities Markets, Reserve Bank of India, February 2004 and a Member of the Joint Study Group (JSG) on India-Republic of Korea bilateral economic linkages.

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He Chaired the Working Group on Public Debt management (middle office) and Inter-ministerial Group on Customs duty reform and was member-secretary of the Steering Group on Foreign Investment. He served as member of the Appellate Tribunal for the Securities & Exchange Board of India (SEBI) and the Depositories Act. He has served as Member of the Joint Study Group (JSG) on India-China trade and economic cooperation, Director of Punjab National Bank & Allahabad Bank and Trustee of the Unit Trust of India (UTI). Was Member of the RBI Technical Advisory Group on Money and Government Security markets, the Steering Group on International Financial Standards and Codes and the UTI committee on reform and stabilization of the US64 scheme.

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