

Fall And Rise of India

By

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Abstract

This paper reviews the evolution of the Indian economy in terms of the economic Welfare of its people relative to the Welfare of the inhabitants of the rest of the World over the past two millennia. Though the formation of the Modern Nation States is a relatively recent development, the various Indian (Chinese) empires, some of which covered most of the territory of India (China), after the turn of the millennia can be treated as constituting 'India' ('China'). Given that the focus of this paper is on people's welfare, the precise extent and nature of the empire is less relevant than the economic wellbeing. This overview of the decline in the relative welfare of the Indian public over two millennia provides a useful perspective for evaluating the "catch up growth" and improvement in Indian welfare since 1980. A more detailed analysis of the past three decades of income growth then puts the current difficulties in perspective and helps us forecast the likely evolution of the Indian economy over the next three decades. The paper ends with a comparison of the evolution of the economic power of India and China relative to the USA, and some reflections on a national security doctrine for India.

1 Introduction

The Global financial crisis has upset the comfortable, sometime lazy, projections of different countries' role in the 21st century global economy. When the global financial crisis hit India in 2008, extrapolative projections of India's rising growth rate, arguing for double digit growth collapsed with it. India's growth rate collapse to 4 per cent in 2012 has similarly challenged Indian and foreign observers to question India's future. In both cases, projections tend to be driven too much by immediate conditions and developments. It is therefore useful to view India's economy in the long sweep of history over two millennia, before focusing on the last three decades starting 1980, both to emphasize long term trends and to emphasize the danger of being excessively influenced by immediate developments. A comparative perspective is very important and this is provided by comparisons with China, with the 'super power' of the relevant period and with the World (average).

Economic prosperity or the economic Welfare of the people of a country is best and most easily captured by its real per capita Gross Domestic Product (PcGdp). Fortunately we have data on real Per capita GDP and on population for the World from the beginning of the millennium (compiled by Angus Madison (2004)). Section 2 uses this data to trace the decline in Indian and Chinese welfare relative to the rest of the world from the second millennium (1000AD). From 1980 we have comparative data on per capita GDP at purchasing power parity (measured in constant 2005 international dollars) compiled by the World Bank. The paper projects these into the future to build a scenario for the evolution of the Indian welfare. The paper also looks at the economic power of India, China and the USA. Section 3 uses this data to trace the process of "Catch up growth" and Indian recovery from 1980. This section also defines and measures economic power and compares the economic power of India & China with that of the established powers. Section 4 provides a forecast of the evolution of Indian welfare relative to the World and of its power relative to USA and China. Section 5 uses this analysis to suggest the foundation for a "National Security Doctrine" for India. Section 6 concludes the paper.

2 Economic Decline

Despite the descriptions of India as a Golden bird ("Sona ki Chidya") we find that India's per capita GDP has never reached even 1.1 times the World Average in the last to millennia. It was marginally lower than the World average at the start of the Millennium (1 AD) and peaked at the World average around 1000 AD (Table 1). Even more interesting is the fact that from the 1 AD to 1850, China was much richer than India, with a per capita GDP peak of 1.13 times that of India in 1820 (figure 1).

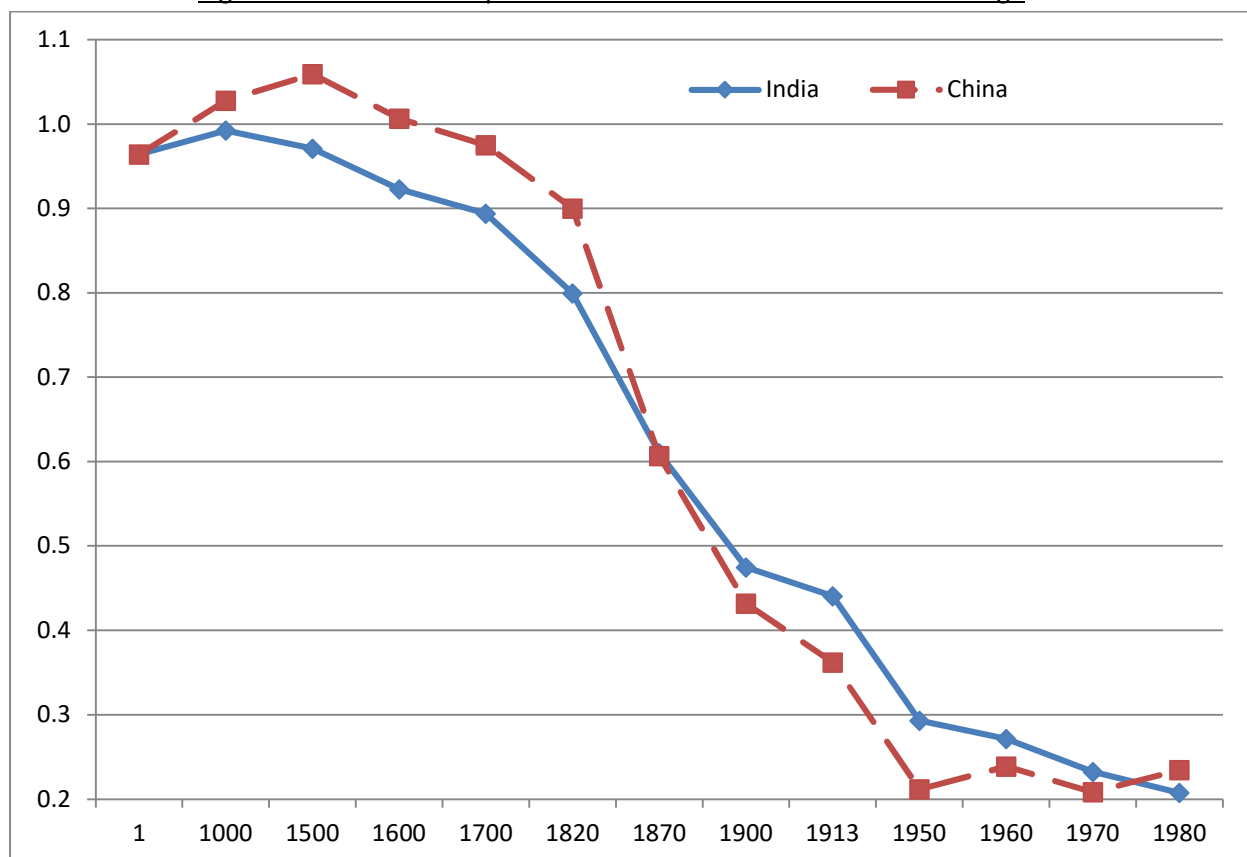
It should be clarified that we are talking about the average PcGdp for India as a whole – there could have been kingdoms within the territory called India, which were either much richer or much poorer than the average. However, it should also be kept in mind that the notion that there was no Indian State before the British arrived in India is equally mythical. The Maurya empire at its peak in 256 BC and the Gupta empire (320-550 AD) covered almost the entire territory of India and therefore constituted "India", in an age before the invention of the 'Modern Nation State'.

Table 1: Per Capita GDP(1990 international Gaeary-Khamis dollars), its growth rate and ratios

	1	1000	1500	1600	1700	1820	1870	1900	1913	1950	1960	1970	1980
India	450	450	550	550	550	533	533	599	673	619	753	868	938
China	450	466	600	600	600	600	530	545	552	448	662	778	1061
World	467	453	566	596	615	667	873	1262	1526	2113	2775	3736	4521
<i>Growth rate (% per annum)</i>													
India		0.00	0.04	0.00	0.00	-0.03	0.00	0.4	0.9	-0.2	2.0	1.4	0.8
China		0.00	0.05	0.00	0.00	0.00	-0.25	0.1	0.1	-0.6	4.0	1.6	3.1
World		0.00	0.04	0.05	0.03	0.07	0.54	1.2	1.5	0.9	2.8	3.0	1.9
<i>Ratios (%)</i>													
India/World	0.96	0.99	0.97	0.92	0.89	0.80	0.61	0.47	0.44	0.29	0.27	0.23	0.21
China/World	0.96	1.03	1.06	1.01	0.98	0.90	0.61	0.43	0.36	0.21	0.24	0.21	0.23
India/China	1.00	0.97	0.92	0.92	0.92	0.89	1.01	1.10	1.22	1.38	1.14	1.12	0.88
China/India	1.00	1.04	1.09	1.09	1.09	1.13	0.99	0.91	0.82	0.72	0.88	0.90	1.13

Source: Author's calculations based on, data from, Angus Madison, Historical Statistics for the World Economy: 1-2006 AD, OECD Development Center, 2004.

Figure 1: Ratio of Per Capita GDP of India and China to World average



Chinese empires at the turn of the millennium covered less of current China: The Qin Empire in 221 BC occupied only the Eastern part of 'China', with Manchuria, Tibet, Sinkiang and parts of inner Mongolia and Central China outside its ambit. The Han empire (206BC-220AD), however, covered most of current China except Manchuria and Tibet.

India's per capita GDP remained unchanged during the first century, increased by about 20 per cent between 1000 and 1500 and then remained virtually unchanged till 1885(table 1). As the world

started progressing after 1500 AD, the position of India worsened progressively, relative to the World. The World per capita income grew by an average of 0.05 per cent per annum between 1500 and 1820, with a minor acceleration between 1700 and 1820. Thereafter it accelerated sharply to 0.54 per cent per annum between 1820 & 1870 due to the economic start of the first industrial revolution (table 1). World income growth accelerated to 1.24 per cent between 1870 and 1900 due to the spread of the industrial revolution and further to 1.54 per cent per annum (1900-1913) with the arrival of the second *industrial revolution*. The failure of Indian incomes to grow during the Mughal period (1500-1700) can be attributed to lack of modern education and technological knowledge and subsequent strife (1700-1750). The failure to grow during the subsequent period of East India Company (1757-1858) and British crown rule, despite much closer links with the source of the Industrial revolution, can be attributed to the colonial desire to extract surpluses from India to accelerate its own growth. This is reflected in the progressive acceleration of the decline of India relative to the World (figure 1).

Interestingly the relative decline of China after 1500 was even sharper than of India, partly because it started from a more prosperous level than India. However, there was an actual decline in China's GDP after 1850, because the entry of British and other Colonial powers into China resulted in the "Opium wars," that seemed to result in greater breakdown than occurred when the British invaded India. As a consequence, China's per capita GDP fell below that of India's from 1870 for the first time during the millennium and remained below it till around 1975.

2.1 Catch-up Growth: Japan and Russia

It is also useful to look briefly at what happened in Japan and the USSR/Russia after the start of the Industrial revolution, relative to India and China on one hand and to Western Europe, the source of the industrial revolution, on the other. The per capita GDP of the USSR (Japan) was equal to (0.9 times) the World average in both 1700 and in 1913, with minor fluctuations in between. This compares with a per capita GDP in major countries of 2.3 to 3.2 times World average in 1913. Even after the Meiji restoration (1868-1918) brought the industrial revolution to Japan, per capita GDP it took two decades to rise to 1.5 times World average in 1940. The speed of catch-up accelerated further from 0.21/decade during this period to 0.38/decade during 1940 to 1980. The USSR's catch-up with Western Europe started even later than in Japan, (around or) after World War II, with average per capita GDP reaching 1.5 times World average in 1970 and much slower (less than 0.1 per decade). China's convergence started in the early 1970s and has progressively accelerated: From 0.1 % point during 1982-1992 to 0.19% point during 1992-2002 and 0.39% point during 2002-2012. China's per capita GDP in 1980 was 0.8 times World average, while Japan's was 0.9 times World average in 1913 before its growth accelerated.

India's catch-up started in 1980 from a low base, 1/5th of World average. Though India's per capita GDP started rising fitfully after 1985 (average PcGdp growth rate of 0.18% per annum), its relative decline continued till independence in 1947 and surprisingly even after independence till 1980 (figure 1). A poor choice of development strategy and model (Fabian or Nehruvian Socialism) by independent India, failed to accelerate economic growth enough to keep pace with a faster growing post-war world.¹ China therefore closed the gap with India within 25 years of India's independence (figure 1). After India's Per capita GDP reached a low point of about 21% of World average in 1979,

¹ The poverty rate also increased for much of this period.

it started modifying its old development strategy/approach in 1980s, when Mrs. Indira Gandhi returned to power after a stint in the opposition. Consequently its growth rate accelerated during the 1980s.² More importantly, the currently most widely used indicator of relative welfare/prosperity, per capita GDP at purchasing power parity, constructed by the World Bank, World Development indicators is only available from 1980. Thus 1980 provides a convenient divider to track the recovery of the two countries.

2.2 Size And Power

Before doing so, however, it is important to understand the difference between economic welfare/ prosperity of the people and the economic size and power potential of a country as a whole vis-à-vis other nations. As done so far we measure and compare economic welfare of people in different countries by the per capita GDP at PPP. Correspondingly we measure and compare the real size of different economies/countries by their GDP at PPP. This is merely the product of their per capita GDP at PP and the total population of the country. The evolution of the share of India and China in global population and GDP are shown in Table 2 along with those for the USA and Europe (27 Western and 12 Eastern).

Table 2: Country shares of World GDP and Population

	<u>1</u>	<u>1000</u>	<u>1500</u>	<u>1600</u>	<u>1700</u>	<u>1820</u>	<u>1870</u>	<u>1900</u>	<u>1913</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1-1700</u>
<i>GDP share</i>														Avg
India	0.32	0.28	0.24	0.22	0.24	0.16	0.12	0.09	0.07	0.04	0.04	0.03	0.03	0.26
China	0.25	0.23	0.25	0.29	0.22	0.33	0.17	0.11	0.09	0.05	0.05	0.05	0.05	0.25
Europe	0.17	0.14	0.24	0.26	0.29	0.32	0.45	0.47	0.46	0.39	0.4	0.39	0.36	0.22
USA	0.00	0.00	0.00	0.00	0.00	0.02	0.09	0.16	0.19	0.27	0.24	0.22	0.21	0.00
<i>Pop share</i>														
India	0.33	0.28	0.25	0.24	0.27	0.20	0.20	0.18	0.17	0.14	0.14	0.15	0.15	0.28
China	0.26	0.22	0.23	0.29	0.23	0.37	0.28	0.26	0.24	0.22	0.22	0.22	0.22	0.25
Europe	0.13	0.12	0.16	0.16	0.17	0.16	0.19	0.19	0.19	0.16	0.14	0.12	0.11	0.15
USA	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.05	0.05	0.06	0.06	0.06	0.05	0.00
<i>PcGDP ratio</i>														
Europe/world	1.2	0.9	1.3	1.4	1.5	1.6	2.0	2.0	2.0	1.9	2.2	2.4	2.5	1.25
USA/world	0.9	0.9	0.7	0.7	0.9	1.9	2.8	3.2	3.5	4.5	4.1	4.0	4.1	0.79

At the term of the millennium India's share of World population was 1/3rd of the World total. It declined progressively to about 15% of World population in 1980 and seem to have stabilized at about that percentage. The decline in India's share of World GDP has been even more dramatic, from 1/3rd at the turn of the millennium to an abysmal 3% in 1980. It averaged about a quarter of World GDP till 1700, prior to the Industrial revolution and then plummeted as the industrial revolution progressed in Europe, to reach 9% by 1900. Though the gap between the World's and Indian growth rates narrowed after Indian independence, India's growth rate remained lower than the World average. Consequently, India's share of World GDP continued to decline. This evidence clearly contradicts facile observations that the Indian government focused 'too much' on economic growth after independence.

² Virmani, Arvind, "India's Economic Growth History: Fluctuations: Trends, Break Points and Phases," Indian Economic Review, Vol. XXXI, No. 1, January-June 2006, pp 81-103. (<http://www.ierdse.org/>).

China's World population share and GDP share in contrast, have fluctuated a lot more. However, both showed a trend decline from an average of 25% during 1 to 1700: China's share declined marginally to about 22% of World population and to about 5% of World GDP share by 1980.

The effect of competition among European States and the Industrial revolution can be seen by comparing Europe with India and China. Till 1000 AD the population shares of each roughly matched their respective GDP shares. Starting in the fifteenth century as Europeans competed with each other for power and influence across the world (including voyages of discovery and colonial exploitation), its per capita GDP rose from the World average to 1.5 times the world average by 1700 (table 2). A corresponding gap opened up between its share of World GDP (29%) and its share of World population (17%). After the start of the industrial revolution around 1760-80, Europe's per capita GDP grew to 2 times World average and GDP-population share gap increased to 0.26(0.45–0.19) in 1870. The USA's per capita income increased even more rapidly from a fraction of World average times in 1600 & 1700 to 2.8 times by 1870, as the Industrial revolution spread to the USA. The obverse of these rising positive gaps between GDP shares and Population shares were the negative gaps in the corresponding shares of India (-0.08) and China (-0.11) in 1870.

At the turn of the millennia and for thousands of years after that, it was believed that a Nation's power depended largely on the number of its citizens it could mobilize and sustain for war. In the 21st century there are many who believe that a country's strength depends mostly on its technological capability. Various analysts have used different economic variables to capture these elements. Virmani (2004, 2005) showed, on the basis of economic theory and empirical understanding of growth, that the simplest economic variables to capture these elements of a Nation's economic power are population, GDP and Per capita GDP measured at purchasing power parity. GDP at PPP is the simplest measure of the human and material resources available to a country while per capita GDP is closely related to productivity of resources and general technological capability of a country. These two can be combined into an index of economic power termed VIP².

As economic power is the foundation of a nation's power this index also defines the power potential (VIP²) of a country. As power is always relative (Meerschimer), to others, the index is defined relative to the strongest power of the era, which since 1900 has clearly been the USA. Before it, from the early 19th century the UK was the strongest power. The first industrial revolution (1740-60 to 1820-40), transformed UK & Western technological capabilities, while leaving India and China virtually untouched. As the theoretical underpinning of the VIP² index is a stable global set of technologies, it may not reflect relative power potential well during times of technological revolution. In addition, it is useful to keep in mind that China reached its maximum geographical extent in the early 1800s and was racked by internal rebellion and wars thereafter. In India too, the Maratha Empire, covering most of India, was gradually overwhelmed by the British East India Company during the early 1800s. The index must therefore be used with caution during the period 1750 to 1850.

From the turn of the millennia to the industrial revolution, China and India were the strongest economies in the World, as measured by the index, VIP² (figure 2). Their relative power fluctuated, but they were way ahead of the European countries: The French economy had about 28% of China's economic power in 1700 while the UK had about 27 % of China's power in 1820(table 3). By the early 1800s UK had pulled ahead of China and India as well as other European countries to become

the strongest economic, and it remained so for about half a century. Since 1900 the USA has been the strongest economy in the World (fig 2 & table 3).

The decline in India and China’s economic power (figure 2) mirrors the decline in its per capita GDP, relative to the world average (fig 1) and relative to the super power (table 3). Note that in 1820, though India had about 80% of the per capita GDP of the World average (table 1) and 90% of that of the strongest power, China, its economic power was only 46% of China’s as estimated by VIPP (table 3).

Another interesting fact to note is that in 1870, the USSR with a per capita GDP about 8% higher than the World average and 30% of that of the UK, the strongest power, had 45 % of the UK’s economic power-VIPP (table 3). This is because its economy was only 16% smaller than that of the UK in 1870.

Figure 2: Economic Power & Overall Power Potential of countries (VIP²/VIPP)

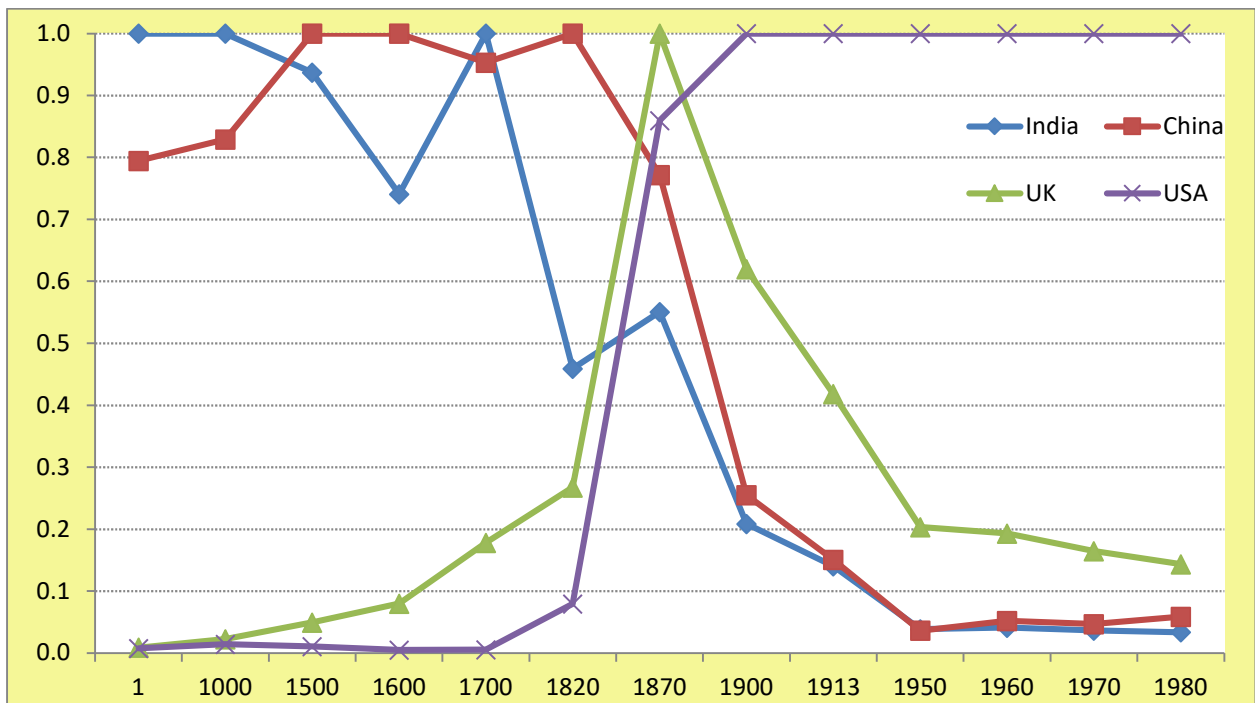


Table 3: Virmani Index of Power Potential(VIP²) and Relative Per capita GDP

<i>VIPP</i>													
	1	1000	1500	1600	1700	1820	1870	1900	1913	1950	1960	1970	1980
India	1.00	1.00	0.94	0.74	1.00	0.46	0.55	0.21	0.14	0.04	0.04	0.04	0.03
China	0.79	0.83	1.00	1.00	0.95	1.00	0.77	0.25	0.15	0.04	0.05	0.05	0.06
UK	0.01	0.02	0.05	0.08	0.18	0.27	1.00	0.62	0.42	0.20	0.19	0.16	0.14
USA	0.01	0.01	0.01	0.01	0.01	0.08	0.86	1.00	1.00	1.00	1.00	1.00	1.00
France	0.07	0.08	0.19	0.19	0.28	0.21	0.55	0.31	0.23	0.11	0.14	0.17	0.17
Germany	0.03	0.04	0.14	0.15	0.19	0.16	0.55	0.44	0.38	0.12	0.23	0.23	0.23
USSR							0.45	0.27	0.24	0.19	0.24	0.27	0.24
Japan	0.03	0.09	0.11	0.09	0.17	0.10	0.12	0.09	0.07	0.05	0.11	0.26	0.32
<i>PcGDP ratio</i>													
India	1.0	1.0	0.9	0.9	1.0	0.9	0.17	0.15	0.13	0.06	0.07	0.06	0.05
China	1.0	1.0	1.0	1.0	1.1	1.0	0.17	0.13	0.10	0.05	0.06	0.05	0.06
UK	0.9	0.9	1.2	1.6	2.3	2.8	1.00	1.10	0.93	0.73	0.76	0.72	0.70
USA	0.9	0.9	0.7	0.7	1.0	2.1	0.77	1.00	1.00	1.00	1.00	1.00	1.00
France	1.1	0.9	1.2	1.4	1.7	1.9	0.59	0.70	0.66	0.55	0.67	0.78	0.81
Germany	0.9	0.9	1.1	1.3	1.7	1.8	0.58	0.73	0.69	0.41	0.68	0.72	0.76
USSR							0.30	0.30	0.28	0.30	0.35	0.37	0.35
Japan	0.9	0.9	0.8	0.9	1.0	1.1	0.23	0.29	0.26	0.20	0.35	0.65	0.72

3 Economic Reforms & Growth

By 1980, India's per capita GDP had declined to less than 14.8 per cent of the World average. In other words, the average Indian's income was only 14.8 % of the average inhabitant of the World (table 4).³ To put it bluntly, India was pathetically poor in 1980 compared to the rest of the World.

3.1 Recovery through Catch-up

India's economic catch-up with the World began in the 1980s.⁴ Though the old development strategy began to be questioned in the 1970s and critical problems were identified (production and import controls), credible reforms started in the 1980s. The result of these reforms was the doubling of the rate of growth in per capita income, and acceleration in the catch-up process.⁵ By 1991 India's per capita had increased to 17.7 per cent of the World average an increase of 0.26 per cent point per year (table 4). Further economic reforms in the 1990s raised the economic growth rate further by about 65%.⁶ India's catch up with the rest of the world therefore almost tripled to 0.71 per cent point per annum. By 2012 India's per capita GDP had grown to 32.5 per cent of the World average. In other words the average Indian had one third (1/3rd) of the income of the World's average inhabitant. Though India has recently crossed the dividing line between a Low Income country (LIC) to a Lower Middle Income country (UMIC) (as per World Bank definition), we are still poor relative to the World average. The catch up with the rest of the World has actually accelerated over time. It rose to 0.42 per cent point per annum during 1990 and 2000 and to 0.97 per cent point

³ As the Madison data differs from the World bank data, the 21% number calculated earlier using Madison data is not comparable.

⁴ Virmani, Arvind, Propelling India from Socialist Stagnation to Global Power: Growth Process, Vol. I (Policy Reform, Vol. II), Academic Foundation, Delhi, 2006

⁵ Virmani, Arvind, "India's Economic Growth: From Socialist Rate of Growth to Bharatiya Rate of Growth," Working Paper No. 122, ICRIER, February 2004. <http://www.icrier.org/page.asp?MenuID=24&SubCatId=175&SubSubCatId=233>.

⁶ Virmani, Arvind, "Sources of India's Economic Growth: Trends in Total Factor Productivity," Working Paper No. 131, ICRIER, May 2004. <http://www.icrier.org/page.asp?MenuID=24&SubCatId=175&SubSubCatId=233>.

per annum during 2000 to 2010. However there was a severe set-back in 2012 from which India has not recovered in 2013.

Another interesting fact to note is that China was marginally poorer than India in 1990, but has caught up with the rest of the World much faster than India (table 4). China's per capita GDP at PPP was more than 3/4th the world average in 2012. Correspondingly, India's per capita GDP had fallen to 65% of China's in 2000 and to 42% of China's in 2012. Poverty and other social indicators broadly reflect this gap in income.⁷

Table 4: GDP per capita(PPP) growth rate, ratios and VIP² / VIPP

<i>Avg Gr Rate (%)</i>	<u>1980to90</u>	<u>90to'00</u>	<u>2000to'10</u>	<u>2010to'15</u>	<u>2015to'20</u>	<u>2020to'30</u>	<u>2030to'40</u>	<u>2040to'50</u>	
China	7.8	9.3	9.9	7.2	6.0	4.9	3.8	2.8	
India	3.3	3.7	6.0	3.9	6.1	5.9	5.0	3.9	
USA	2.3	2.2	0.6	1.4	1.4	1.3	1.3	1.3	
World	1.4	1.5	2.2	2.0	1.9	1.8	1.8	1.7	
	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2010</u>	<u>2012</u>	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>
<i>Ratios: PcGdp (ppp)</i>									
India/China	1.7	1.1	0.65	0.46	0.42	0.39	0.43	0.49	0.54
China/World	0.09	0.16	0.34	0.69	0.78	1.08	1.5	1.8	2.0
India/World	0.15	0.18	0.22	0.32	0.33	0.43	0.63	0.86	1.1
India/USA	0.03	0.04	0.04	0.07	0.08	0.11	0.16	0.23	0.30
China/USA	0.02	0.03	0.07	0.16	0.18	0.27	0.38	0.48	0.56
<i>VIPP/VIP²</i>									
China	0.01	0.03	0.08	0.28	0.34	0.57	0.9	1.2	1.3
India	0.02	0.03	0.03	0.08	0.09	0.14	0.28	0.48	0.7

Source: Authors calculations based on data from World Bank, World Development Indicators, April 2013 (till 2012) and OECD's long term growth projections to 2060.

3.2 Economic Power

Figure 3 shows the evolution of China and India's economic power along with those of European powers, Russia and Japan (relative to that of the USA the strongest power) since 1980. The most noticeable fact is the phenomenal rise of the Chinese economy from 1990, when its power was equal to that of India, and 2012 when at 37% of USA, it is more powerful than Japan's. The second noteworthy fact is the relative decline of all the established powers since 1980. As a consequence of this and India's modest growth acceleration India is on the verge of surpassing Italy and running close to Russia's economy. Finally the UK economy's relative decline has been the least.

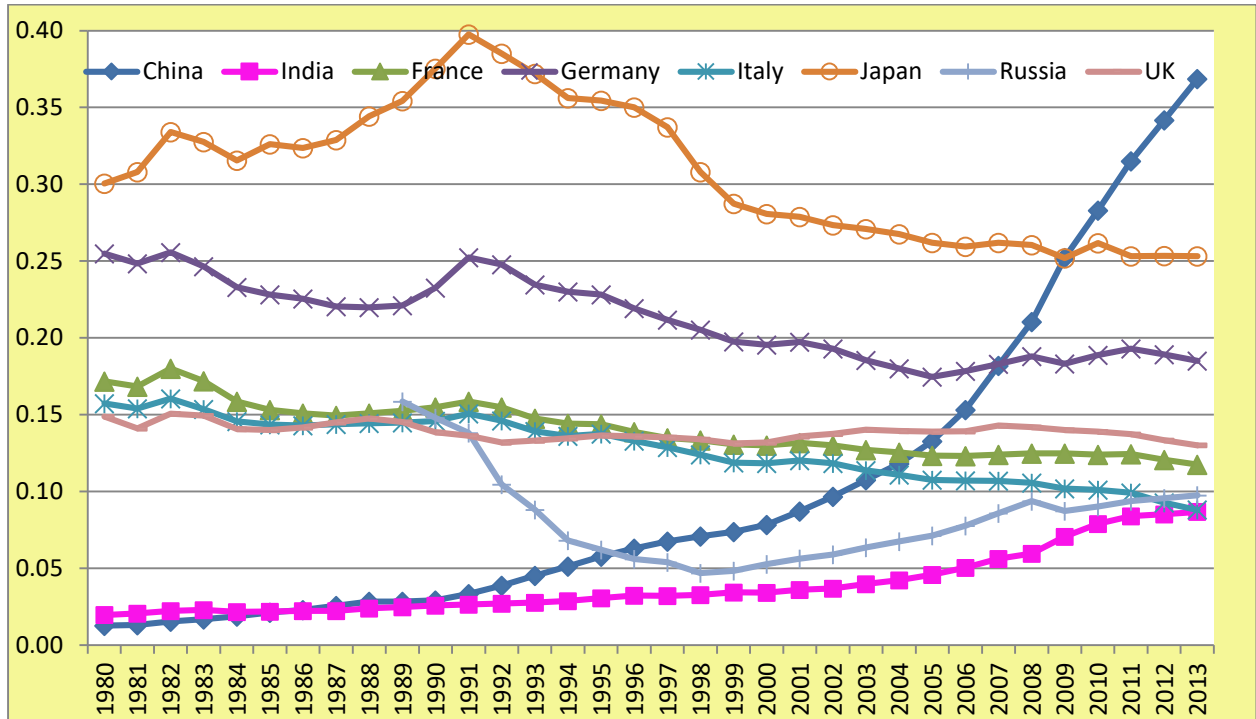
3.2.1 Great Power, Super Power

"The Congress of Vienna consisted of five main powers: the [United Kingdom](#), the [Austrian Empire](#), [Prussia](#), [France](#), and [Russia](#). These five primary participants constituted the original great powers as we know the term today, as [Lord Castlereagh](#), the [British Foreign Secretary](#), first used the term "Great Power" in a letter sent on February 13, 1814: "It affords me great satisfaction to acquaint you that there is every prospect of the Congress terminating with a general accord and Guarantee between the *Great*

⁷ There is one major exception, wasting/stunting of children under 5 years of age, which is much worse in India than can be explained by its average income. This gap is largely explained by the exceptionally poor levels of sanitation. Virmani, Arvind, "Under-nurishment of Children: Causes of Cross-country Variation," Working paper No. WsWp 4/2012, October 2012. <https://sites.google.com/site/drarvindvirmani/working-papers>.

powers of Europe..”⁸ In 1820, the power potential (measured by index VIP²) of these powers relative to China & to UK were, UK (0.27, 1), Germany (0.16, 0.59) France (0.21, 0.8) USSR (0.18, 0.66). Thus these countries were correctly described in the early 1980s as “European Great powers” but they were not necessarily all Global great powers.⁹

Figure 3: Index of Economic Power or Power Potential, VIPP/VIP² (USA=1)



Source: Authors calculations based on data from World Bank, World Development Indicators, April 2013.

Alice Lyman Miller, defines a *superpower* as "a country that has the capacity to project dominating power and influence anywhere in the world, and sometimes, in more than one region of the globe at a time, and so may plausibly attain the status of global *hegemony*."¹⁰ A superpower is a state with a dominant position in the international system which has the ability to influence events and its own interests and project power on a worldwide scale to protect those interests. A superpower is traditionally considered to be a step higher than a great power. Using our index VIP we can trace the transition from the UK/British Empire as the dominant power to the emergence of the USA.

The UK was the dominant power from 1830 to 1870, but the USA’s power potential rose rapidly from 0.38 in 1830 to 0.59 in 1850, 0.74 in 1860 and 0.86 in 1870. From 1880 on US had the highest power potential (1.0) with the UK falling to 0.78 (relative to it). The UK’s power potential declined to 0.62 in 1900, to 0.42 in 1913 and 0.3/0.35 in 1930/1940. The USSR’s power potential in 1940 was at 0.25 the 3rd highest, and fluctuated marginally around that level. As the UK’s power potential continued to decline the USSR reached 2nd position in 1960 and a peak of 0.27 in 1970. However, as Eastern Europe was tightly controlled by the USSR, we can treat the two as constituting a single empire, whose power potential peaked at around 36% (Virmani 2005b). Based on the historical analysis of the Bipolar World of US-USSR after World War II, the break-up of the USSR in 1990s and the relatively quick passing of the uni-polar moment, we can define a “Potential (Global) Great Power” as one with a VIP² of

⁸ Wikipedia, http://en.wikipedia.org/wiki/Great_power

⁹ We do not have data for the ‘Austrian empire’ which encompassed territory beyond ‘Austria’ which has index value of 0.03 global and 0.1 relative to UK.

¹⁰ Wikipedia, <http://en.wikipedia.org/wiki/Superpower>. Miller, Alice Lyman, Professor of National Security Affairs at the Naval Postgraduate School; www.stanford.edu. Retrieved 2010-08-27.

around 0.25(1/4) and a “Potential Super Power” as one with a VIP² of either 0.33(1/3) or 0.5(1/2). The reason for choosing a stricter criteria than applied to the USSR-Eastern Europe is the emergence of multiple dimensions of competition & co-operation and the emergence of an informational interconnected global society with human rights concerns & constraints on country behavior [Virmani (2009)]. Based on these criteria, Japan has been a potential great power during the entire period and still remains one and China has become one after the global financial crisis. Germany became one in early 1990s when the two Germanys were unified, but has since lost this position. Russia the successor State of the USSR does not meet the criteria. The USA with an index of 1 was the unchallenged super-power during the entire period.

3.2.2 China

It is important to note that in 2012 China had a per capita GDP less than 80% of the World average and less than 20% of that of the USA (table 4), yet it was the second most powerful economy in the World with more than 1/3rd (0.34) the economic power of the US economy. In contrast, Japan the third most powerful economy had 3.1 times the per capita GDP of the World and Germany the fourth most powerful economy had 3.4 times the World average per capita GDP. This is because China’s population was much larger than that of Japan and Germany and 4.3 times that of USA, the third most populated country after India. Consequently China’s real GDP was 80% of the US, the largest economy in the World. As noted earlier economic power as measured by VIP² depends on both per capital GDP (average income) and population or real GDP.¹¹

3.3 Growth Differentials

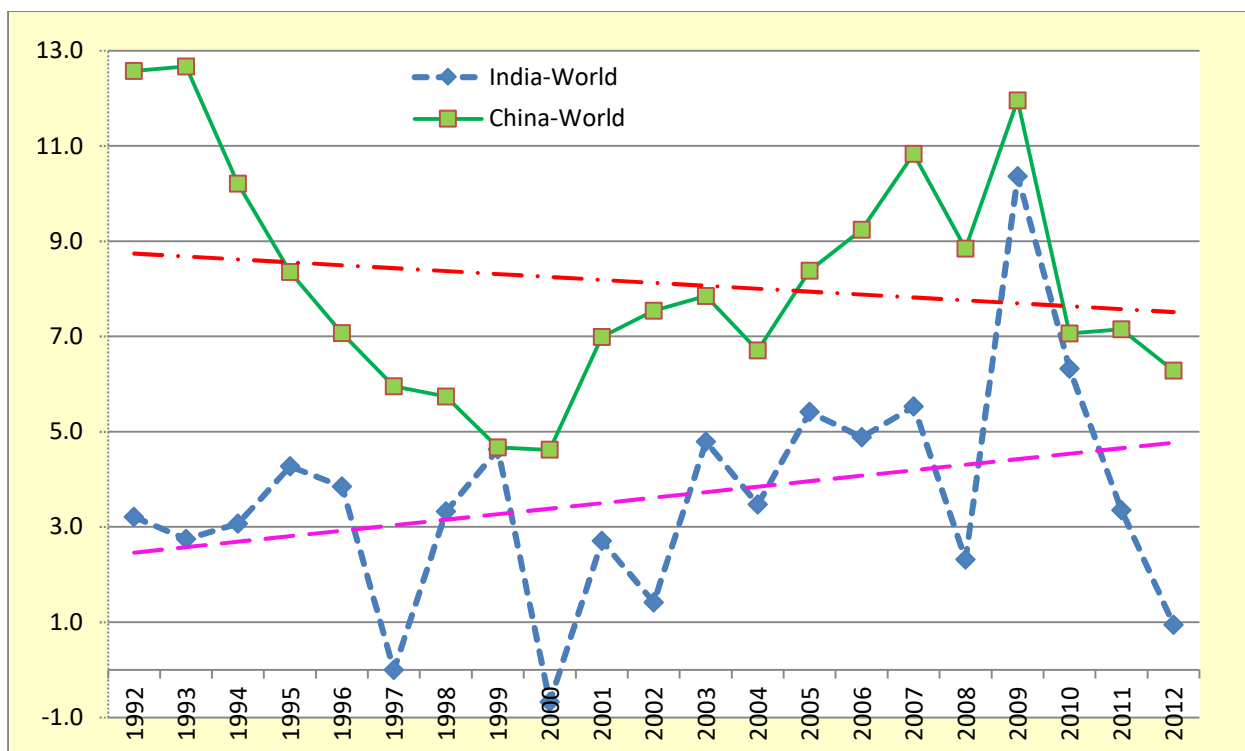
Despite the severe setback to Indian economic growth in 2012-2013, due to earlier neglect of structural reform policies by the Indian government, we predict a recovery based on the assumption that the next Central government will give serious attention to restoring growth to the high levels seen in the last decade (per capita 6.2%), and in sustaining this growth over the next decade. Further our forecast that the Chinese economy will slow down below 8 per cent by the middle of this decade is in the process of coming true, with many analysts now predicting that China’s economy will slow down to 6-7% GDP growth over the next few years.¹² This is suggested by the plot of growth differentials (figure 4).

Since 1992, Indian per capita growth has been on a rising trend relative to the World. Conversely China’s per capita growth has been on a declining trend relative to the World. Thus a reversal of the growth ordering is highly likely given that China’s growth is now being artificially sustained by large infusion of credit, falling rates of return on investment and rising NPAs. Consequently, the per capita growth rate of the Chinese economy will be lower than that of the Indian economy before the end of this decade and the latter will start catching up (gradually) with the former.

Figure 4: Per capita GDP (at PPP) Growth Differential: China and India (%)

¹¹ $VIP^2 = Population \times PcGdp^{1.5} = GDP \times PcGdp^{0.5}$ as $GDP = Population \times PcGdp$

¹² Arvind Virmani, “Global Crisis: Impact on Growth Strategies”, Co-lead Presentation at the, *Development Debate on Export Competitiveness*, Korea Development Institute-WBI, Seoul Korea, March 10, 2010. <http://info.worldbank.org/etools/docs/WBIVideos/avirmani/avirmani.html>.



Source: Authors calculations based on World Bank WDI, April 2013, digital data set.

4 Future Scenarios

We use the UN population projections, Virmani (2012) and OECD projections for the World economy and important countries to derive a trajectory for the future evolution of the Indian and Chinese economies. The growth assumptions and the impact on per capita GDP and Economic power are shown in the right half of Table 4. The severe impact of India’s growth collapse in 2012 is visible in the average per capita growth of 3.9 % per annum estimated for the period 2010-2015. However, as analyzed above policy/structural reforms are projected to gradually restore per capita GDP growth to the 6.2-6.4 levels seen in the decade before the collapse. This is a conservative assumption, compared to Virmani (2012) who calculates the growth potential of the Indian economy at around 7% per capita.

As economic theory and empirical evidence shows fast catch-up growth must eventually slow in fast growing economies like China and India. Thus Indian per capita income growth is projected to slow from an average of around 6% per annum during 2015 to 2030 to 5% during the 2030s and to less than 4% during the 2040s (table 4). As a result of this catch-up growth India’s per capita GDP is projected to become half of the World average by 2025 and equal it before 2050. Thus after a period of 350 years the welfare of the average Indian will again become equal to that of the average inhabitant of the World. This is a cause worthy of being elevated to a National priority.

A corollary of this increase in Indian’s Welfare relative to the rest of the World will be the increase in India’s economic power. Before the end of the next decade (i.e. between 2025 and 2030), India’s economic power (VIP^2) will reach 0.25 (last line of table 4), thus meeting the criterion for “potential great power.” Around 2040, VIP^2 will reach 0.5 thus meeting the criterion for being classified as a “potential super power.” Whether India will become a (actual) “great power” or a “super power” depends on many other things, of which the two most important are; (a) The national

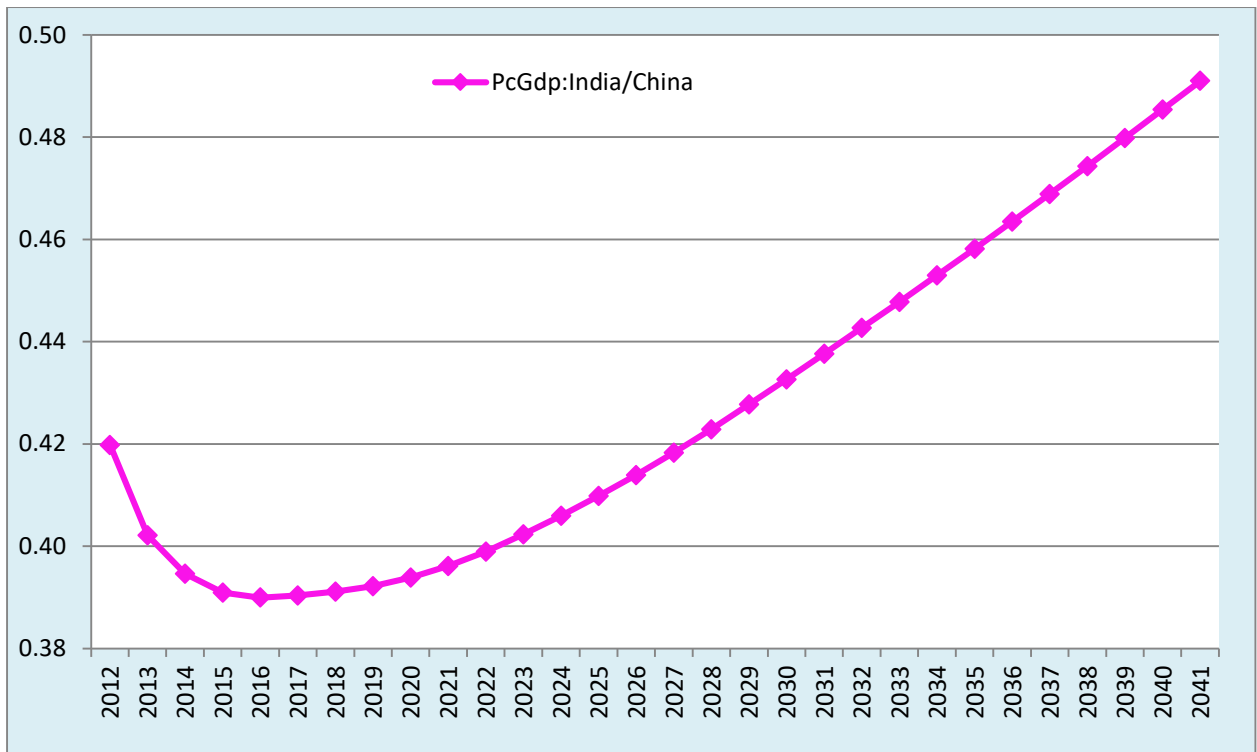
will to acquire & develop strategic technology and use it to produce strategic assets, and (b) The political will to use these to assert its interests in Asia and the World.

As China's per capita GDP was 2.4 times that of India in 2012 and China has maintained unprecedentedly high per capita GDP growth in the last three decades, it is expected to slow more rapidly than India's. Per capita GDP growth is projected at 7.2% per annum during 2010-15 and 6% during 2015-20, decelerating by an average of 1% point per decade thereafter to less than 3% per annum in the 2040s. Consequently its per capita GDP will become 1.5 times World average by 2030 and 2 times World average by 2050 (table 4). Over the same period China is expected to become a formidable challenger to the USA, even though its per capita GDP is projected to rise only to 38% of the USA's in 2030 and 56% of the USA's in 2050. Given the size of its population and its real economy, its *economic power* will be only 10% lower than that of the USA in 2030 and 30% higher than it by 2050.

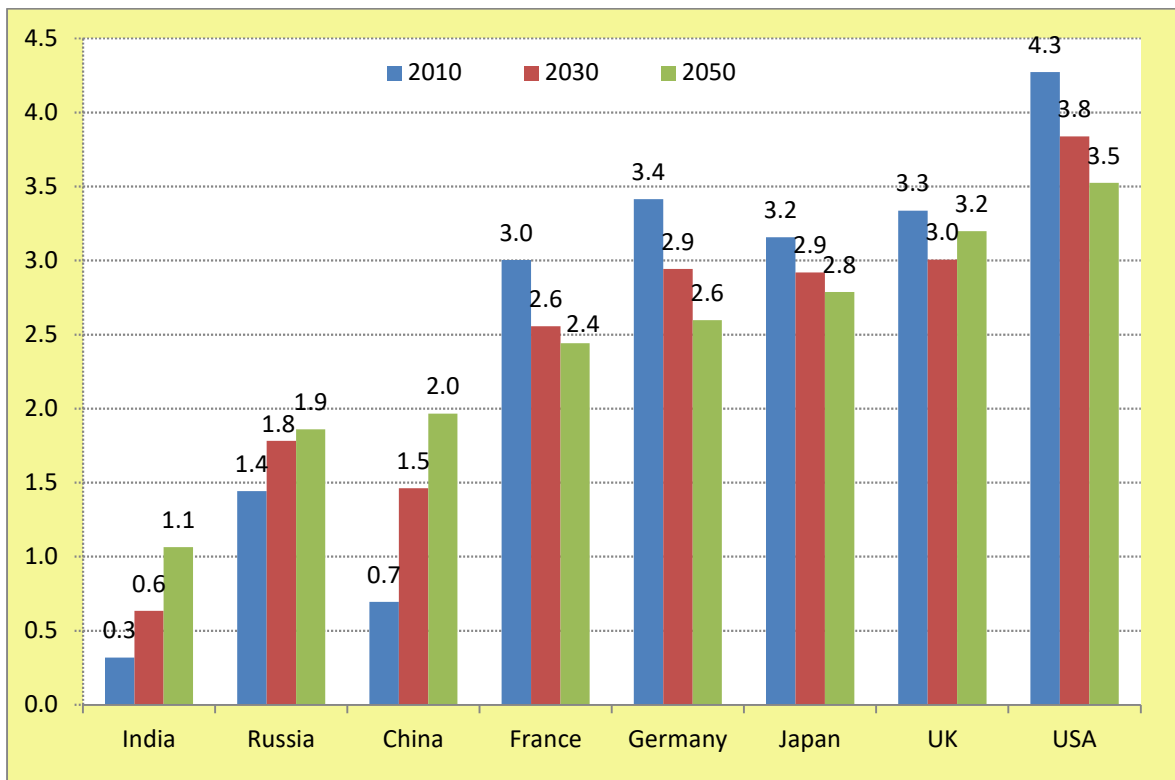
Given these trajectories for India and China, the ratio of Indian per capita GDP to Chinese is projected to reach a trough of 0.39 around 2016-17 (figure 5). As China's growth slows below that of India's, India's per capita GDP and public welfare, will rise slowly to become half of China's by around 2040. This difference will be reflected in a real GDP that is still only 60% of China's and economic power that is 40% of China's. However, with India's economic power half that of the USA in 2040, India's economy at number three will be (according to the VIP² index) relatively stronger than number two positioned USSR or Japan were at their respective peaks. Thus the World could become Tri-polar between 2040 and 2050, if Indian leadership has the wisdom and the will to develop and use India's economic power effectively.

The evolution of India and China's per capita income as a proportion of the World average is compared with that of Russia, the European powers, Japan and the USA in graph 1. Despite the rise in per capita GDP of India, China and Russia, it is projected to remain significantly below that of Russia till 2050: India, China and Russia's Per capita GDP is projected to be between 1 and 2 times World average, of France, Germany and Japan between 2 and 3 times and of UK and USA between 3 and 4 times World Average (graph 1). It is useful to recall that the per capita income of the USSR was equal to world average in 2013 and 10% higher in 1940 before the World became bipolar.

Figure 5: Welfare Gap Projection- India's Per capita GDP at PPP relative to China



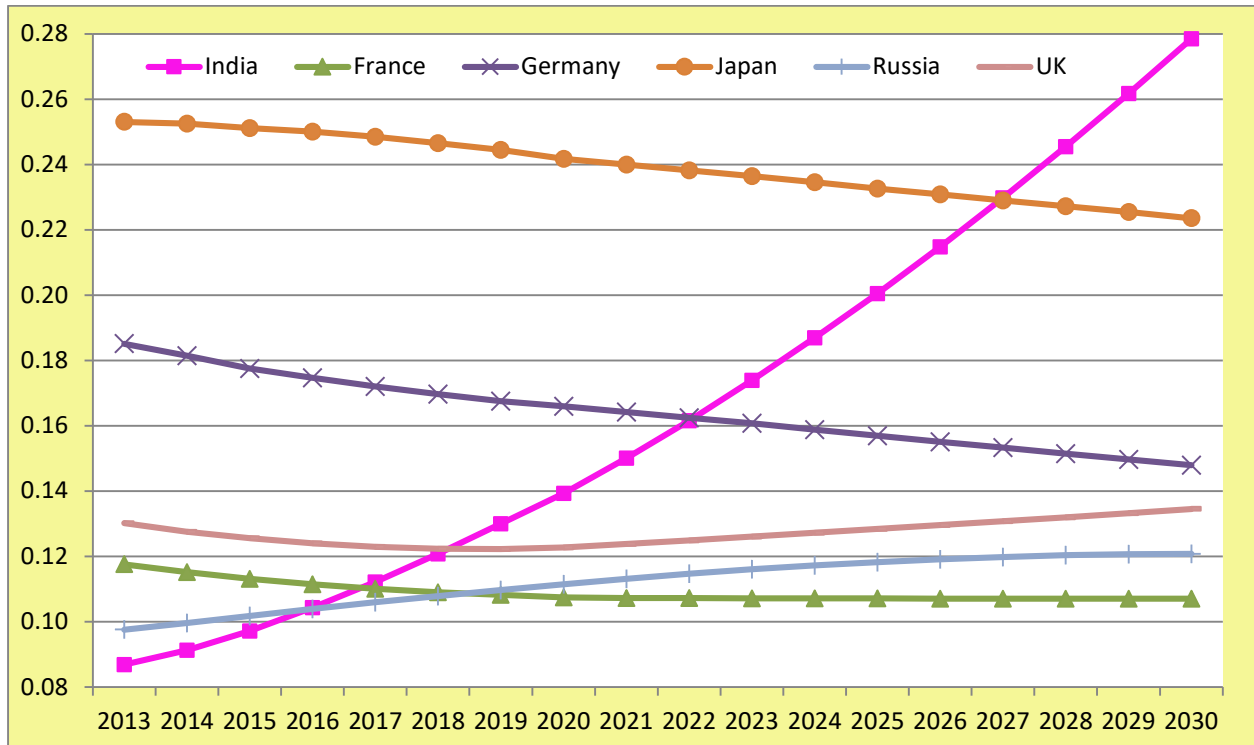
Graph 1: Per capita GDP at PPP – Country/World average



Despite the lower income, India's economic power is projected to overtake that of Russia, France and UK within this decade and Germany and Japan's within the next decade (figure 6). Thus by 2040, India will become the third most powerful *economy* in the World. Part of India's per capita income disadvantage is offset by the much greater scale and diversity of its economy, made possible by a population that is currently 4 times that of USA, 9 times that of Russia, 10 times that of Japan and 20

times that of the UK. Thus it is appropriate to compare the average income of the top decile (1/10) of the Indian population with the Japanese average and the top five per cent (1/20) of to the UK average. Intuitively, the income and technological sophistication of these segments of the Indian population would be fairly close to the Japanese and UK averages respectively.

Figure 6: India’s Projected Economic Power and Power Potential, VIP² (USA=1)



5 National Security Doctrine

In the case of India¹³, there is a close link between economic Welfare as measured by per capita GDP at PPP and economic power/power potential as measured by VIP². It therefore makes a lot of sense for India to make the maintenance of high Growth rate of Per capita income as its central National Security Objective. As analyzed earlier, the acquisition of Strategic technology and Strategic assets commensurate with its economic power is also necessary for overall national power. As the development of Strategic technology and production of strategic assets is under the monopsonistic and/or monopoly control of governments,¹⁴ this essential element of power can be largely subsumed under the primary objective, if strategic technology is developed and strategic assets produced, within the country, thus accelerating general technological development, growth of per capita income and welfare.

¹³ And China to some, but lesser extent as much of profits accrues directly or indirectly to the government, the CCP or SPVs and party related enterprises.

¹⁴ Strategic technology is defined as technology that is not traded on competitive markets. Similarly Strategic assets are goods and services for which the government is the sole (monopsony) buyer (defense systems, aero-space, nuclear). There is also dual use technology (components and parts of strategic assets) and items that do not satisfy this definition fully, but whose sale would be restricted / controlled by the government of the country in which they are developed and/or produced. They thus represent created/artificial monopoly/oligopoly and thus have strategic significance.

India cannot grow at a sustained high rate if there is war or terrorist disruption. Besides the cost in terms of human lives and resources destroyed, it creates risk and uncertainty that is inimical to sustained investment and high growth. It follows that the secondary objective (primary from traditional national security perspective) must be to *deter any attack on India*, whether conventional or through cross-border terrorism. An effective defense and diplomatic strategy for deterring potential aggressors is a must and the known gaps in this area need to be filled expeditiously.

Similarly internal insurgency and social turmoil can also slow and/or disrupt growth and must be part of the national security objective. Government's role in supplying the required quantity and quality of Public and Quasi Public Goods & Services in all geographies across the nation, and to all groups and sub-groups of nationals, is critical to this objective.¹⁵ They are also a vital element of people's welfare and important for enhancing the quality of human capital required for sustaining growth. These public goods & services must not only be provided in an unbiased way, but must also be seen to be so provided. A public education campaign, to make both the public agents who supply these G&S and the public that is supposed to receive them, aware of their rights and responsibilities, is needed to attain the national security objectives.

6 Conclusion

At the beginning of the 1000 AD the average Indian was as prosperous as the average inhabitant of the World. The welfare of the Indian people, as measured by per capita GDP at purchasing power parity, fluctuated between 0.96 and 0.99 of the World average during 1 AD to 1500 AD. India's relative decline started around 1600 and accelerated after the Industrial revolution (1800s) as European productivity began to grow. Though the entry of UK companies into India could have introduced the scientific education and industrial revolution into India, Colonial rent extraction and promotion of UK exports kept Indian income and Welfare stationary while World incomes grew, thus leading to relative decline. With Independence in 1947 the speed of relative decline slowed. Unfortunately because of the adoption of a flawed UK model of Fabian socialism, India's income growth continued to lag behind that of the rest of the World, with the result that the gap between Indian's welfare and the rest of the World continued to expand: India's per capita GDP as a ratio of World Average reached its low point in 1979.

India began its "Catch-up growth" in the 1980s with the gradual reform of the failed economic policies of Fabian Socialism. India's per capita GDP at PPP had reached 32% of world average by 2010, starting from a low of 15% in 1980. Our projections suggest that India will take a decade to reach ½ of World average, two decades to reach 3/4th of World average and over three decades to equal World average. India's primary National objective must be to ensure that the Welfare of the average Indian as measured by per capita GDP at PPP is the same as that of the average World inhabitant by 2045.

The paper shows that if we are able to meet this objective, India will become a "potential Great Power" by 2030 and a "potential Super Power" by 2040. Thus the central tenet of India's National

¹⁵ Police, Judicial services, Roads, Public education and Basic education, Public Health, Sewerage, Sanitation and clean drinking water, sustainable irrigation and drainage systems, Urban land use planning. Regulatory systems to ensure transparent, impartial and effective functioning of these providers.

security doctrine must be to ensure an internal and external environment that facilitates and accelerates the achievement of this objective. An essential element (second objective) of this doctrine must be the production and development of Strategic technology, particularly Aero-space, sub-surface and cyber technologies, to accelerate the broader technological development of the economy. Taken together this means that we must acquire the capability and the credibility to deter both conventional and unconventional (asymmetric & terrorist) attacks on the Indian public, Indian economy and its land and sea frontiers.

Historically, China's per capita Income was between 1 and 1.1 times India's per capita GDP for almost two millennia between 1 AD and 1870. It was lower than India's for only a 100 years between 1880 and 1990, falling to a low of 0.7 of Indian per capita GDP in 1950. It had caught up again with India during the 1980s to equal India in 1992 and exceed it in 1993. China's per capita GDP at PPP (in constant 2005 international \$) was 2.4 times that of India in 2012. China's per capita GDP PPP is already more than 3/4th World average and is projected to equal it before the end of this decade. China is therefore very close to becoming a "potential Super Power." The most important challenge for India is therefore to start closing the huge and historically unprecedented gap between the income/welfare of the average Chinese and the average Indian. This requires us to restore per capita income growth to 6% and sustain it for a couple of decades.

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