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REFLECTIONS ON INDIA'S EMERGENCE
IN THE WORLD ECONOMY

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Sunandan Ghosh

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ABSTRACT

This paper attempts to capture how India embraced the world economy against the backdrop of the evolving domestic and international economic policy environment. We begin with a brief overview of the evolution of India's development policy framework. Next, we attempt to understand why India failed to join the league of 'Asian Miracle' economies that embarked upon a phenomenal growth path during 1960s, 70s and 80s. This is followed by a quantitative presentation of the process of India's integration with the world economy that was effectively set in motion only after a turnaround in its policy regime in the 1990s. Finally, we conclude that India's post-colonial policy thrust on public funded higher education and research in science & technology, creating a strong base of human capital and technological capability, acted as the key drivers of India's economic emergence during the last couple of decades.

Keywords: Indian Economic Development, Development Policy, Trade and Openness

JEL Classification: N15, O21, O24

I. Introduction

This paper attempts to examine the coordinates of India's emergence as a key player in the world economy. In the history of the world economy, the rise of different nations as economic power hubs at different points in time may be traced back to various factors, going beyond the conventional economic parameters commonly underscored by economic development theories. One could identify distinct (and often unique) social, economic and geo-political explanations for the economic emergence of each nation in the world economy. The prosperity of Britain in its colonial heydays may have a very different genesis and explanation compared to the rise of the USA as an economic superpower in the twentieth century. In this paper, our objective is to unfold the mystery of India's economic emergence in the last couple of decades. Our intention is to capture how India embraced the world economy against the backdrop of the evolving domestic and international economic policy environment.

Our paper begins with a brief overview of the evolution of India's development policy framework in the post independent era. Next, we attempt to understand why India failed to seize the opportunity to be a part of the 'Asian Miracle' of the 1960s, 70s and 80s, when some of the labour surplus East Asian economies embarked upon a phenomenal growth path, unprecedented in human history. This section will posit India against her East Asian neighbours to give us a comparative Asian

perspective. This will be followed by a quantitative presentation of the process of India's integration with the world economy that was effectively set in motion much later, only after a turnaround in its policy regime in the 1990s. Finally, we discuss the key drivers of India's economic emergence into the world economy. We show that India's success may be attributed largely to its post-colonial policy thrust on public funded higher education and research in science & technology, creating a strong base of human capital and technological capability that proved to be the cornerstone of India's economic emergence during the last couple of decades.

II. Evolution of India's Development Policy Framework¹

The conventional discourse on India's development policy has invariably confined itself to the paradigm of inward versus outward looking strategies, dividing it into two distinct regimes – import substituting industrialization extending till the 1980s, followed by a paradigm shift in 1991 towards a liberalized trade and industrial policy regime. We refrain from such a broad brush depiction of India's development policy evolution. We demarcate four distinct phases of India's development policy, distinguished by their guiding philosophies and compulsions.

II.1: Policy Planning Driven by Ideology: 1950s and 1960s

India followed an inward-looking development strategy and remained a virtually closed economy for almost four decades after its independence in 1947. The key goal was to achieve *self reliance* in all possible dimensions of economic activities of the nation.

According to Ray (2006), the immediate aspiration of independent India was perhaps to mimic the development trajectories of the 'advanced' industrialized nations, although very much within the framework of

1 This section draws largely upon a recent paper by one of the authors Ray (2015).

import substitution and self-reliance. It was perhaps important for Indian policy makers to signal to the rest of the world that India could do whatever the advanced nations can. Accordingly, diversification of industrial production base was given a high priority in India's planning with a view to achieving self reliance in the entire array of industrial production, from simple consumer items to sophisticated capital goods and heavy machinery. Indian planners paid little attention to the notion of comparative advantage and did not even hesitate to focus on highly complex and resource intensive activities like space research or nuclear technology.

This policy approach was perhaps a result of the hangover of prolonged colonial rule that fostered a process of "drain of wealth" through tripartite and unequal trading relations dictated by the British rulers. This hangover was reinforced by the contemporary scholarship on *dependency theories*² pioneered by the Latin American School of thought, highlighting notions of elasticity pessimism and in-equalizing trade. All this led to deep cynicism about trade and openness among the founding fathers of India's development policy. The goal was, therefore, to achieve 'self reliance' by doing away with all elements of dependence on the western world. However, the idea of *self-reliance* itself has gone through a metamorphosis in India's development policy that we shall discuss in due course.

The architecture of India's post colonial development policy framework was inspired by the soviet model of development. Indeed, India's 2nd Five Year Plan model closely resembled the one that Feldman developed for the Soviet Union in the 1920s. India's first Prime Minister Jawaharlal Nehru, with his Cambridge exposure, had a strong faith in socialist ideals, which left a significant imprint on India's post colonial development model. If we consider the Nehruvian era that extends

2 See, for instance, Prebisch (1950).

probably till the mid-1960s, we note that socialist sentiments went a long way in defining India's own understanding of development, both in terms of its means as well as its ends. There are several pointers to substantiate this claim.

Soviet style *Central Economic Planning* was the cornerstone of India's initial development strategy that aimed at a "socialistic pattern of development". There was lack of faith in the market and the role of the state was emphatically highlighted. Although a mixed economy was envisaged, there was a clearly assigned role earmarked for the private sector, primarily restricted to the consumer goods segment, and even that was subjected to pervasive regulatory control by the state. On the other hand, a progressively expanding list of priority sector industries was reserved for the public sector that was supposed to reach the "commanding heights" of the economy.

India's post-colonial development strategy paid very little attention to trade. India's trade policy was characterized by pervasive import and exchange control, relying primarily on quantitative restrictions (QRs). From 1962 onwards, QRs were supplemented by increasing use of import duties. There was a pessimistic neglect of exports to begin with, but from the Third Plan (1961-62), there were some piecemeal and ad-hoc attempts towards export promotion through various export incentives (subsidies, fiscal incentives, and import entitlements). There was, of course, a temporary and short-lived trade-liberalization attempt during the devaluation of 1966 with an announced goal of eliminating/rationalizing export subsidies and liberalizing import licensing and reduction in import duties, but only to be followed by a reversal to the protectionist policy framework.³

Socialist ideals were also reflected in the deliberate policy attempts on several other fronts – (1) reduction of monopoly and

3. Wolf (1982).

concentration of economic power, (2) promotion of small scale sector that generates income and livelihood for the common man through a policy of industrial reservation, (3) balanced regional development through freight equalization policy to eliminate regional disparities in growth and development and (4) price controls, aimed at ensuring availability of certain “essential” (“crucial”) products at “reasonable” prices – fertilizer, cement, iron and steel, pharmaceuticals.

Another area that deserves special attention in India’s development policy during the Nehruvian era is its concerted focus on social sector policies, driven by the ideals of the so-called *Nehruvian Socialism*. The need for a proactive role of the government in the provision of merit goods like health and education was clearly highlighted. An elaborate public health care system and infrastructure was envisaged and created during this period. Likewise, government funded higher education and research, especially in the fields of science and technology, was emphasized with the creation of an elaborate network of public funded colleges and universities as well as other institutions of higher learning in science, technology and management.

II.2: Deeper Penetration of Self Reliance: 1970 – 1985

The decade of 1960s witnessed several changes in the global political economy scenario. Two neighbourhood conflicts (1962 China and 1965 Pakistan) exposed the ground realities of India’s limited military capabilities and the consequent vulnerabilities against global forces and alliances. Moreover, the acute food crisis of 1966 revealed India’s economic vulnerability vis-à-vis the USA, when it withdrew its food aid to India under PL480. This was followed by an acute currency crisis and a major devaluation of the rupee.

Despite being one of original founders of the non-aligned movement in a bipolar world, India slowly started aligning with the Soviet Union, both in strategic and economic fronts. There was urgency

to rapidly march towards the goal of self-reliance, both economic as well as strategic. India's achievement of nuclear capability in 1974 was a clear step in this direction. This was also a period when private capitalists were emerging as a powerful class in India, as an outcome of its original vision of a mixed economy. This class had vested interest in protecting their business from international competition and a policy of self reliance and import substitution was in perfect harmony with their narrow self-interest. The policy of license-raj had already created a rent-seeking vested interest among bureaucracy. Against this backdrop, India's development policy framework tilted towards deeper penetration of self-reliance in every sense of the term. However, with the private capitalist class now being allowed to operate more pervasively, the initial policy goal for the public sector reaching the "commanding heights" of the economy, was substantially diluted. Nevertheless, industrial licensing continued in full steam. With a change in the political regime in 1977, there was an announced intention to relax licensing policies but it never quite materialized and was promptly reversed in 1980.

This period also witnessed a passage of several legislative acts that have a direct bearing on India's development model. These include the Foreign Exchange Regulation Act (FERA) of 1973 intended to restrict and regulate the operations of foreign (multinational) companies in India, the Monopolies and Restrictive Trade Practices (MRTP) Act of 1970 to prevent the concentration of economic power in hands of a few rich, the Patent Act of 1970 granting only process patent *for chemical substances including pharmaceuticals* with a reduced duration of 7 years from the date of filing or 5 years from the date of sealing whichever is lower and placing the burden of proof on the plaintiff in case of infringement.

All these acts introduced in the 1970s, in conjunction with several other policy initiatives towards active promotion of indigenous

technology creation and adoption, resulted in a policy framework that took the goal of *self reliance* beyond mere manufacturing capabilities to technological *self reliance*. Given the protectionist environment, considerations of costs and quality as per global standards were not considered to be of much relevance during this phase of India's development model.

Another important dimension of this deepening of *self reliance* during this era was evident in India's strive towards attaining self-sufficiency in food grains production. India's *green revolution* was made possible through the Government's concerted effort and investment in agricultural research and extension services.

II.3: Policy Ambivalence and Sporadic Reforms: 1985 – 1990

The flipside of this protectionist policy regime soon revealed itself in the form of inefficiencies of various kinds. For example, the Indian industry, protected from foreign competition, was reluctant to adapt itself to the fast changing global technology frontier and hence, in the process, became inefficient with regard to global standards of cost and quality. India's industrial sector was characterized by very high effective rates of protection and associated domestic resource costs. The country settled at a "Hindu" rate of growth (2-3 percent p.a.) and was branded by development scholars as a growth laggard in the world.⁴

From the mid 1980s, with a young leader taking over as prime minister with a dynamic appeal, along with his team of technocrat advisors, a technological view of development was getting imprinted in India's development policy framework. It was realised that the ability to produce a wide range of objects is of little value if it is not matched by the ability to produce them efficiently. This may require opening up the doors to latest global technologies, even if it entails a deviation from the original policy framework of inward looking industrialisation. At

4 Lal (1988).

the same time, global scholarship on development strategy was also going through a metamorphosis, fuelled by the trumpeting of the success stories of East Asian economies that had adopted an outward oriented industrialization strategy. There was some serious re-thinking about India's development path among Indian scholars and policy makers, albeit with a lot of scepticism and hesitation.

Although this period marked the beginning of India's liberalization policy, the policy response was at best feeble and sporadic. There was an attempt to liberalize particular aspects of the control system without affecting the system itself in any fundamental way. These attempts have, arguably, been piecemeal and ad-hoc and lacked a comprehensive programme of reforms that some of the other inward looking economies had already adopted (including China from 1978).

II.4: Paradigm Shift: 1991 Onwards

The year 1991 marked a radical departure in India's development policy from inward looking industrialization to an outward oriented trade regime. This was precipitated by an exceptionally severe balance of payments crisis compelling India to borrow from the IMF. The massive economic reforms package adopted in 1991, consisting of short-term stabilization measures along with a longer-term programme of comprehensive structural reforms, was much wider and deeper than earlier piecemeal attempts. There was a complete paradigm shift in India's development policy that now emphasized not only on relaxation of government controls and greater integration with the world economy, but also a larger role for the private sector as the engine of growth in a free market framework nurturing competitive forces in order to boost efficiency. Interestingly, this paradigm shift in India's policy framework coincided with the Uruguay Round of negotiations culminating in the establishment of the World Trade Organisation (WTO). This ushered in a new era of WTO driven world order of globalization, against which we should try to understand India's economic reforms.

In terms of outcomes, the reforms process, over a period of time, put in place a trade regime compatible with the diktats of the WTO, with the removal of all quantitative restrictions on trade, reduction of tariff rates, market aligned foreign exchange rates with full current account and limited capital account convertibility and a liberal, transparent, investor friendly foreign direct investment (FDI) policy in place. On the industrial front, the reforms led to virtual elimination of industrial licensing and de-reservation. The number of sectors reserved for small-scale enterprises was drastically reduced. Most significantly, the role of the public sector was re-defined with the stated objective of disinvesting public sector units. Finally, the establishment of bodies like the Investment Commission and the National Manufacturing Competitiveness Council clearly highlight a major shift in the role of the government from 'control' to 'regulation' insofar as the industrial sector is concerned.

On the fiscal front, to achieve fiscal consolidation and stabilization, the *Fiscal Responsibility and Budget Management Act* was passed. This act enjoined the central government to eliminate its fiscal and revenue deficits in a phased manner in the medium term. In another significant move aiming to create a common market for goods and services in the country, a uniform system of VAT has been adopted and services sector (contributing to more than 50 percent of GDP) has been brought under the tax net in a comprehensive manner. Finally, subsidies on petroleum products are being progressively dismantled, by linking domestic retail prices to international prices. This has considerably reduced government expenditure on the petroleum account.

III. The Asian Miracle: A Lost Opportunity for India?

India had to wait for five long decades before it could make its presence felt in the world economy. Despite its illustrious history of an ancient civilisation dating back to 5000 BC and a rich cultural heritage,

intellectual and scientific capacities and enlightened leadership at the time of independence,⁵ India remained a poor under-developed nation for more than half a century. It is rather intriguing to note that much of the labour surplus Asia (East and Southeast, in particular) forged ahead with economic prosperity from the 1960s and 1970s, even though they started from a much lower base of economic and scientific capacities compared to India. Some of the economies in the East and Southeast Asia grew at rates, unprecedented in human history. By contrast, India remained stuck at low levels of growth rates of per capita income.

The extraordinary growth performance of East Asia, popularly known as the Asian Miracle, cannot be understood as an isolated regional phenomenon. Rather, it depicts an unfolding pattern of international specialization, where labour surpluses of Asia get integrated into the mainstream of world trade. Within labour surplus East Asia, the development of different national economies followed an orderly sequence – the so-called ‘flying geese’ pattern.⁶ “The initial leader Japan was followed by the Four Tigers (Korea, Taiwan, Hong Kong and Singapore), then by the three Cubs (Indonesia, Malaysia and Thailand) and finally by China and Vietnam. At each stage, rapid economic growth driven by labour-intensive manufactured exports produced a Stolper-Samuelson effect in the current leaders setting off a wage-explosion there. This drove labour-intensive industries out to the next tier of low-wage economies while the current leaders graduated to more sophisticated activities that were not however at the cutting edge of technology. The final destination of this migration of labour-intensive manufacturing was, of course, China. In part, this was due to its vast surplus of low-

5 By 1947, India had already produced two Nobel laureates (CV Raman in Physics and Rabindranath Tagore in Literature who also happened to be the first one to receive a Nobel prize in Literature outside the English speaking world), several civil servants, barristers, professors and scientists of global repute.

6 Akamatsu (1962).

wage labour (generating a Lewis effect).”⁷ The pattern of emergence of the Asian Miracle economies is captured in Table 1 which presents the GDP growth trajectories and the degree of openness in selected Asian countries.

Japan, the leader of the Asian Miracle, experienced an average GDP growth rate of 10.4 percent during the 1960s. This abruptly turned negative at the beginning of the 1970s and never regained its past levels. During the next two decades, the average rate of growth was only 4.3 percent. Since 1990, Japan’s growth rates further tapered off to less than one percent on an average.

Among the tigers, the growth spurt in Singapore and Hong Kong continued till 1981 while South Korea’s growth spurt lasted till 1991. The average growth rates achieved by these tigers were 9.3, 9.3 and 9.5 percents respectively, very close to the rates achieved by Japan.⁸ The three cubs also experienced growth spurts beginning in the 1960s continuing till 1996 before being hit by the East Asian currency crisis. The levels achieved by the cubs were much below that of the leader and the tigers, the average varying between 7.5 to 7.8 percents.

With regard to openness, with the exception of Japan and South Korea, all others were fully open economies and remained so throughout their period of growth explosion that began in the 1960s. Japan and South Korea started as virtually closed economies with trade-GDP ratios as low as 5 percent in 1960. However, both progressively opened up their economies over time, with their trade/GDP ratios steadily rising to the present levels of 30 percent and 90 percent respectively. Trade and openness were, therefore, at core of the Asian Miracle which integrated labour surplus Asia into the mainstream of world trade.

7 Guha and Ray (2004).

8 Data for the fourth tiger Taiwan was not available.

Table 1: Growth and Openness of Asian Economies

Countries	Period	Average growth rate of GDP	Openness Index: (Trade/GDP ratio)
Japan	1961 – 1969	10.4	Steadily increased: 5% in 1960 30% now
	1970 – 1991	4.3	
	1992 – 2013	0.8	
Singapore	1961 – 1981	9.3	Fully open throughout 150% – 450%
	1982 – 1997	7.9	
	1998 – 2013	5.3	
Hong Kong	1969 – 1981	9.3	Fully open throughout 150% – 450%
	1982 – 1997	5.9	
	1998 – 2013	3.4	
Korea, Rep. of	1961 – 1991	9.5	Steadily increased: 5% in 1960 90% now
	1992 - 2013	5	
Indonesia	1961 - 1967	2	Open throughout: Hovering around 50% rising to 65% now
	1968 – 1996	7.5	
	1997 – 2013	4	
Malaysia	1961 – 1996	7.7	Open to highly open: 100% – 170%
	1997 – 2013	4.5	
Thailand	1966 – 1996	7.8	Open to highly open: 50% – 160%
	1997 – 2013	3	
China	1961 – 1978	4.7	Opened up in 1979: steadily increased 30% – 70%
	1979 – 2013	9.9	
India	1961–1984	3.8	Opened up in 1991: Below 15% till then, and thereafter steadily rising to above 50%.
	1985–1994	5.3	
	1995–2002	5.8	
	2003–2010	8.3	
	1995–2010	7.1	
	2010–2013	5.5	

Source: Authors' calculations based on data from World Development Indicators

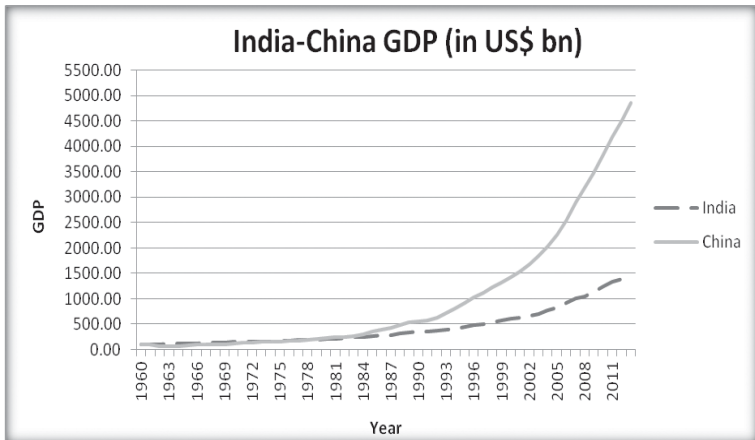
After East Asia, it was the sleeping dragon China that took off in the 1980s, again propelled by rapid expansion of labour intensive manufactured exports. China opened up its economy in 1979 and its trade GDP ratio steadily rose from 30 percent to 70 percent. China's growth explosion was imminent as soon as it opened up. The average growth rate of GDP during 1961-1978 stood at 4.7 percent and it doubled during the period 1979-2013 at 9.9 percent. This spectacular growth performance of China, spanning over more than three decades, surpasses the miraculous achievements of all East Asian star performers, including Japan. As we noted above, the Stolper-Samuelson process⁹ that was setting in for other Asian Miracle economies and eventually eroded, at least in part, their low labour cost advantage, was delayed in the case of China which enjoy almost a Lewisian "unlimited supply of labour". No wonder, China continues to dominate the global market for labour intensive mass manufactures!

Despite its bulging population, where was labour surplus *India* in this Asian Miracle? When the rest of Asia, including the late riser China was bubbling with export driven growth, India continued with its autarkic trade policy regime that created strong anti-export bias in the relative incentive structures (Wolf 1982, Bhagwati and Srinivasan 1975). As a result India could never experience the Asian Miracle, driven by rapid expansion of labour intensive manufactured exports. India got settled at a low rate of GDP growth averaging 3.8 percent till mid-1980s. With its sporadic attempts to liberalise trade restrictions from 1985, there was some improvement in its growth performance with average rate of 5.3 percent during 1985-1994, but nothing compared to the phenomenal growth rates experienced by its East Asian neighbours during the Asian Miracle.

9 According to the Stolper and Samuelson (1941) theorem, a rise in the price of a commodity leads to a rise the price of the factor used more intensively in the production of that commodity.

Comparing GDP trajectories of India and China (Figure 1), we note that the paths nearly overlap till early 1980s, when China begins to forge ahead after opening up its economy in 1979, leaving India hovering at the same level for another decade or two. India opened up only in 1991 and takes off much later than China. Even after taking off, India has never been able to match up with Chinese growth rates. As indicated in Table 1, during 1995-2010, India achieved an average growth rate of 7.1 percent, somewhat comparable to the growth spurt experienced by the three cubs. It was only in some of the years between 2005 and 2010 that India achieved growth rates exceeding 9 percent matching that of the Asian tigers. But even during this period (2003-2010) the average growth rate was barely 8.3 percent, much below China's average of 9.9 percent sustained over 35 long years after its opening up. In other words, India's growth performance clearly indicates that it could not come on board the spectacular Asian Miracle.¹⁰

Figure 1: GDP Paths of China and India



Source: World Development Indicators

¹⁰ One could, of course, argue that the Asian Miracle was not an unmixed blessing. Many of these countries following an outward oriented policy got severely hit by the East Asian Currency Crisis of 1997 and suffered a major setback in their growth process (with the exception of China), whereas India remained by and large insulated from such external shocks.

In common discourse, India's inability to join the miraculous growth experience of the Asian Miracle economies has been solely attributed to its inward looking trade regime. However, if this was indeed the case, one would naturally expect India, with low labour cost advantages, to surge ahead and flood the global markets for labour intensive mass manufactures after it was forced to open up its trade in 1991. But this never happened. By the time India's policy shift took place, competition in the global mass market in labour intensive manufactures had intensified and India had already lost out in the race against the East and Southeast Asia. It was the conquest of this market that propelled China's boom of the nineties.¹¹

The Asian Miracle was indeed a lost opportunity for India! But this did not prevent India from charting out its own trajectory of emergence in the world economy that transgressed simple labour cost advantage. In the following section, we explore how India could capitalise on these new vistas and opportunities to emerge as a major player in the world economy.

IV. The Story of India's Emergence Post-1991

Before getting down to the nitty-gritty of India's economic emergence, we examine the trajectories of GDP and openness for India over the entire period of 1960-2013. Estimating an exponential growth function, we find that India's GDP grew at an average rate of 4.9 percent during the entire period. Using the methodology proposed by Bai and Perron (1998, 2003) for estimating multiple structural breaks in linear models, we find that there are two structural breaks in India's GDP path – the first one in 1989 and the second one in 2000.¹² In other words, it was from the late-1980s that India could eventually escape the "Hindu" equilibrium stagnation. While the average growth rate in the period

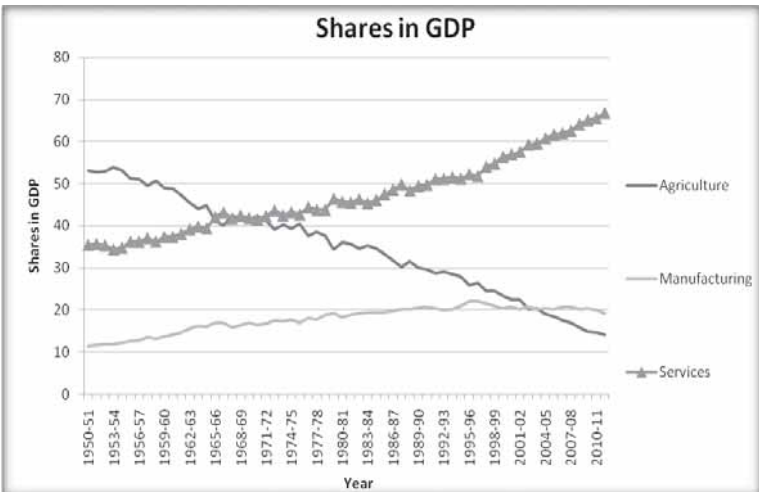
11 Guha and Ray (2004).

12 See Table A1 in the Appendix.

1961-1988 was only 3.7 percent, it shot up to 6.4 percent during 1989-2013. In fact, the period 2000-2013 experienced an average growth rate of 7.2% - a growth rate almost similar to those of the Asian Cubs during their heydays.

Alongside this growth trajectory if we analyse the composition of India's GDP (agriculture, manufacturing and services) in Figure 2, we fail to observe the associated structural transformation in the framework of the conventional paradigm of phases of development *a la* Chenery and Syrquin (1975). The Indian model seems to have skipped the middle phase of an expanding manufacturing sector as the share of manufacturing remained low and almost stagnant throughout India's development transition. From an agriculture dominated economy to begin with, India straight away jumped to an economic structure, with a transition period of two decades or so, where services assumed the lead role right from the mid 1970s. Its share in GDP rose to above 50 percent in the 1990s. Presently, services account for a whopping 67 percent of India's GDP.

Figure 2: India's GDP Composition

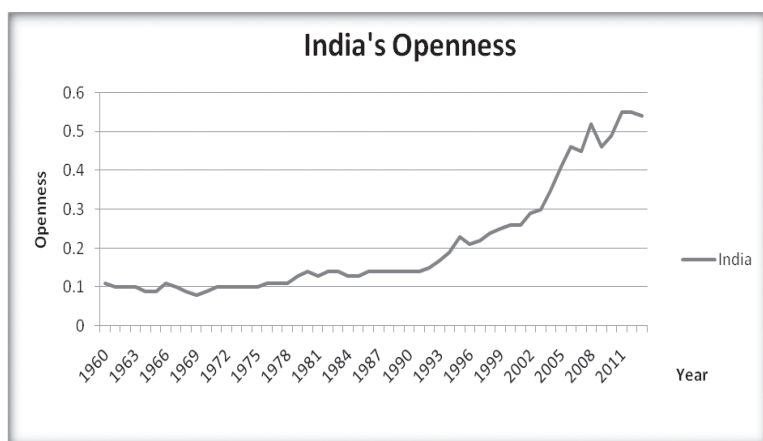


Source: Authors' calculations based on data from Reserve Bank of India.

It was from the mid-1980s that India started experimenting with policy reforms and trade liberalisation during its brief period of policy ambivalence (1985-1990) as described earlier. However, in the trajectory of India's openness as reflected in its trade/GDP ratio, we identified endogenous structural breaks in 1992 and 2003 using the same Bai-Perron methodology. In fact, the real shift in India's path of openness can be traced back to India's opening up in 1991 when India's trade/GDP ratio jumped from 0.14 in 1991 to 0.23 in 1995. Figure 3 clearly demonstrates that India openness index started moving steadily upwards only from the early 1990s.

Therefore, in India's case, contrary to the Asian Miracle experiences, improvement in growth seems to precede the turnaround in openness. Does this really mean India's economic transformation had little to do its integration with the world economy resulting from its comprehensive policy reform initiated in 1991? This may be a hasty conclusion. India

Figure 3: India's Openness



Source: Authors' calculations based on data from World Development Indicators

posted average growth rates of 6.1% during the period 1992-2000 and 7.4 percent during 2003-2013 as compared to 4.1% during 1989-1991. Hence, for India, the two trajectories of growth and openness exhibited similar patterns and went hand-in-hand to mark the beginning of India's economic emergence in the beginning of this new millennium. Like the Asian Miracle economies, trade and openness therefore proved to be the cornerstone of India's economic emergence. However, unlike the Asian Miracle, export of labour intensive mass manufactures was not the driver of growth in this case.

IV.1: Evolving Trade Structure

To unfold the story of India's economic emergence, we now examine India's trade structure, as it evolved over the past 50 years.

India's trade structure reflects highly diversified export (and import) bundles, consisting of 160-180 items (at the SITC three digit level of disaggregation) during the entire period of 1962-2013. However, over these 52 years, one can identify a clear shift in India's export pattern. Initially India's export basket was dominated by low value added primary goods and natural resources like tea, coffee, spices, cotton, leather, hides and skins, tobacco, iron-ore and concentrates, crude vegetable materials, other crude minerals, woven textile fabrics etc. However, new items began to emerge in India's export basket from the 1980s and the 1990s, leading to a shift towards high value added and skill intensive manufactures like petroleum products, medicinal and pharmaceutical products, organic chemicals, road motor vehicles etc. In order to capture this structural change in India's export pattern in a quick and simple manner, we focused on those export items whose share in India's total exports exceeds one percent in any particular year and clubbed them in five categories as presented in the Table 2.

Table 2: Changing Pattern of India's Exports

1 Items that no longer feature in the one percent list	2 Items that remain in the list but with a declining share	3 Items that remain in the list with a low but steady share	4 Items that remain in the list with rising share	5 Items that are new
Fruits (051) Spices (075) Coffee (071) Tea and Mate (074) Tobacco (121) Crude Vegetable Materials (292) Leather (611) Leather Manufactured (612) Cotton Fabrics (652) Floor Coverings (657) Work of Art (896)	Iron Ore (281) Textile Fabric Woven (653) Made-up Articles (656) Clothing ex fur (841)	Fish (031) Rice (042) Feed Stuff for Animals (081)	Petroleum Products (332) Med & Pharma (541) ^{##} Textile Yarn and Threads (651) Pearls etc (667) Machinery Non-electrical (719) Electric Power and Switch (722) Road Motor Vehicles (732) Jewellery (897)	Organic Chemicals (512) [#] Plastic Materials(581) [*] Chemical Materials (599) ^{**} Universals(674) Copper (682) Telecom Equipments (724) Aircraft (734) Ships and Boats (735)

* Plastic Materials (581) was there throughout but its contribution was insignificant before 1993

** Chemical Materials (599) was there throughout but its contribution was insignificant before 1991

Organic Chemicals (512) was there throughout but its contribution was insignificant before 1987

Med & Pharma (541) was there throughout but its contribution was insignificant before 1977

The two major items that dominated India's exports during the 1960s and 1970s are tea and mate and woven textile fabrics. The former contributed to more than 10 percent of total exports (as high as 18.7 percent in 1962) but eventually disappeared from list, in spite of its natural comparative advantage coupled with Geographical Indication in Darjeeling Tea. Woven textile fabrics contributed to more than 13 percent of India's total export on an average till mid 1970s, but subsequently the share has been consistently declining falling below 1 percent since 2005. Apart from these, other traditional items that had moderate shares in total exports in the initial decades, like coffee, spices, fruits, tobacco, crude vegetable materials, leather, cotton fabrics, iron ore, other crude minerals, floor coverings, made-up articles etc. have either disappeared or are almost on the verge of disappearing from the export basket.

Fish, rice and feed stuff for animals are the only traditional items which still contribute to around 1.5-2.5 percent of the total exports throughout the period. Cotton is another item that needs to be highlighted. Its share has never been more than 2 percent and it has been disappearing from the list periodically. However, it may be of interest to note that its share is displaying a rising trend from 2001 and has re-entered the list from 2010. The only item that not only retained but improved its position in this low value-added category is textile yarn and threads. The share of textile yarn and threads grew at a rate of 1.4 percent on an average over the 52 year period.

The shift in India's export pattern becomes evident when we focus on the last two columns of Table 2. Presently India's export basket is dominated by petroleum products which contribute to more than 15 percent of total exports on an average over the last ten years (with an export share as high as 20.2 percent in 2013).¹³ The other prominent

13 It may be pertinent to note that crude and partly refined petroleum has been India's major import item accounting for 35 percent of total imports at present. This not only serves India's energy requirements but also act as an intermediate input into India's major export item – petroleum products.

item in India's exports is pearls and precious and semi-precious stones. This item has been contributing to 12.5 percent on an average since late 1970s.

Items like organic chemicals, plastic materials, chemical materials and universals, plates and sheets of iron have made their entry into this group of prominent contributors since late 1980s. In particular, the share of organic chemicals in India's total export has been 3.5 percent on an average since mid 1990s. Medicinal and pharmaceutical products emerged as a prominent item in the late 1970s and its share has been consistently rising since then reaching 4 percent at present.

India has been exporting non-electric machinery, electric power machinery and switch and road motor vehicles right from the beginning. However, the shares of these three items have been increasing consistently. In particular, road motor vehicles have registered an average growth rate of 5.3 percent over this period of 52 years and its present share is about 4 percent of the total exports.

Finally Table 2 also captures India's evolving comparative advantage in technology intensive items like telecom equipments, aircrafts and ships and boats. The shares of these items are increasing consistently since their entry in India's export basket from mid 1990s, although the shares are still rather low (currently at just above one percent).

A couple of other items require special mention at this point. Jewellery became a prominent export item since early 1990s. The export share of this item has increased at an average rate of 8.2 percent and it has contributed to 4.6 percent of the total exports on an average over the last ten years making it a major export item at present. Clothing materials became a prominent export item in the late 1960s and then turned out to be a major one in the following years. Particularly during the period 1985-2003, clothing material contributed to a whopping 13 percent of the

total exports on an average. Subsequently, however, the share started declining rapidly reaching nearly 5 percent at present.

Work of art entered the export basket as a prominent item in early 1970s. It remained so till 1986 after which it abruptly vanished from India's exports. Copper presents an interesting story of reversal of trade pattern for India. India used to import Copper till 1997 but has started exporting the same from 2005.

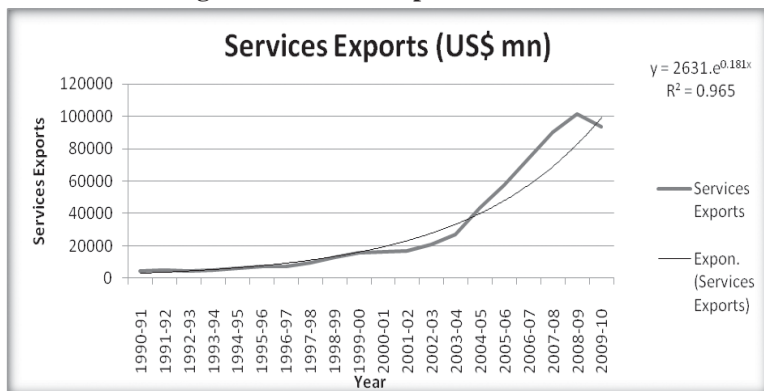
Finally, we would like to note that there are several items like organic chemicals, plastic materials, non-electrical machinery, electric power machinery and switch, telecom equipments and ships and boats that are prominently featuring in both export and import baskets of India in the recent years, perhaps reflecting intra-industry trade, although at the three digit level of disaggregation one cannot conclusively arrive at this reflection.

By and large, the metamorphosis of India's manufactured exports basket is evident from Table 2. Standard labour intensive and resource based manufactures, some of which featured in India's export basket in the initial periods, have been losing out in the recent years, while high-end knowledge and skill intensive items are emerging as the new flag bearers of India's emergence in the world economy. One must, however, note that India is yet to become a major player in global merchandise exports with its share in total world merchandise exports remaining as low as 1.66% in 2014 (WTO, 2014). It is in the export of commercial services that India has made some kind of a mark, contributing to 3.25% of global exports. The appearance and subsequent domination of services exports, therefore, must be highlighted as a key feature of India's evolving trade structure.

As we have already noted above, services sector has been the largest and fastest growing sector in the Indian economy, contributing to 67 percent of its total GDP. Naturally, this lead sector is also emerging

as the driver of its integration with the world economy through exports. Unfortunately, data on service trade for India is not available too far back in time.

Figure 4: Services Exports from India

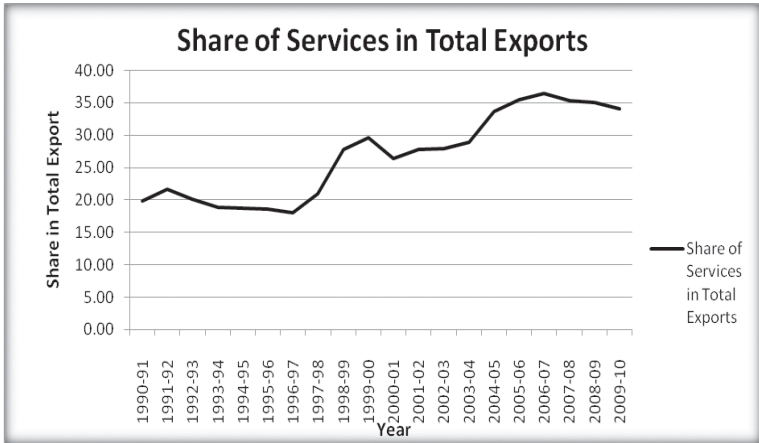


Source: Authors' calculation based on data from Reserve Bank of India

Figure 4 shows how services exports from India grew exponentially from 1991 at a rate of 18 percent per annum.¹⁴ Figure 5 depicts that in 1991 exports of services already started accounting for a significant share (one fifth) of India's total exports. This share rose to one-third in the recent years. According to the World Development Indicators, services exports accounts for a significant 7.8 percent of India's GDP. Looking at the composition of services exports from India (Figure 6), IT and ITES have the lion's share (70 percent). Travel services and transport services together account for another 25 percent.

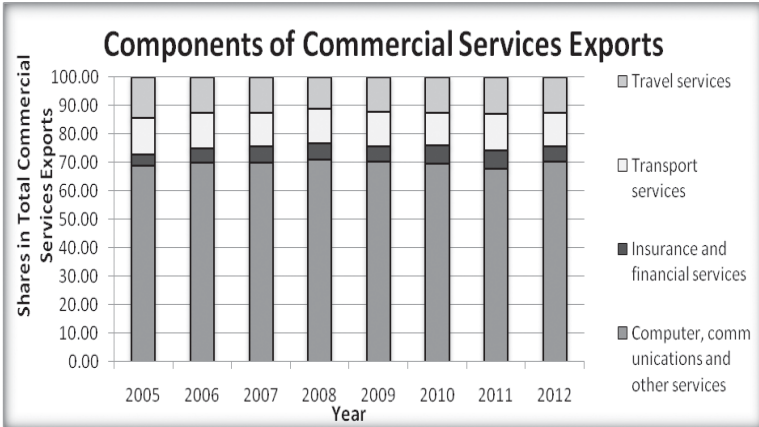
14 RBI reports services exports data only from 1991.

Figure 5: Share of Services in India's total exports



Source: Reserve Bank of India

Figure 6: Compositions of Services Exports from India



Source: World Bank

IV.2 Drivers of India's Take-off

Unlike the rest of labour surplus Asia, India could not capitalise on its low labour cost advantage to embark on a growth path driven by labour-intensive mass manufactures. Fortunately, the advantage

conferred by low labour costs is pervasive, transgressing the narrow realm of traditional labour-intensive mass manufactures into new industries and services like software, information technology (IT) and IT enabled services (ITES), biotechnology (BT) and pharmaceuticals, where knowledge inputs prove to be the key source of comparative advantage.

India's opening up in the 1990s coincided with a new era where these knowledge-intensive sectors began to dominate the world economy. India's could successfully exploit these opportunities on account of several distinct advantages.

First, India's post colonial policy emphasis on expanding public funded higher education resulted in creation of an extensive network of publicly funded colleges and universities throughout the length and breadth of the country. Such indiscriminate expansion of higher education naturally resulted in enormous quality variations and heterogeneity in the levels of higher education in the country. Nevertheless, through this India could create a large base of university-educated middle class, translating its labour abundance into skill abundance that eventually proved to be a key pillar of India's economic emergence where skill intensive manufacturing and services played a dominant role.

Secondly, India's commitment to creating a foundation in science and technology also proved crucially important. India has pursued a well-articulated technology policy providing the broad guidelines for technological development within the country. Thanks to this policy effort, India has been able to create and nurture technological capability, broadly defined as the capacity to select, absorb, assimilate, adapt, imitate and perhaps improve upon given (imported) technologies.¹⁵ Although India is yet to arrive at the frontiers of global technological advances, it has been able to create a niche for itself in inventing around process technologies to achieve a distinct competitive edge in some of the high tech and knowledge intensive areas, like IT and pharmaceuticals.

15 Lall (1987).

Finally, as noted by Guha and Ray (2004) apart from skills, knowledge, and S&T capacity, a key source of India's strength has been its "knowledge of English language which we had inherited from our colonial past" This has proved to be "an asset of incalculable value in an age of instant world-wide communication, basically in the English language." Thus, while China continues to dominate the vast world market for traditional labour-intensive manufactures, new vistas have opened up for India, where knowledge resources, as opposed to simple labour abundance, prove to be the key source of comparative advantage.

Given that India's emergence has centred on a limited number of specific sectors, an obvious question that arises is whether (and to what extent) it has been ignited by sector specific policies. We find quite a divergence among sectors in this regard. According to Ray (2015), India's success IT and ITES has largely been self driven that took off on its own, in response to the new global economic opportunities created by an IT driven global production structure in a globalised world. Of course, India's advantages in terms of skilled (university educated) manpower and English language naturally led to the flourishing of IT and ITES in India, even without any specific government policies towards IT in the initial phases. It is interesting to note that the National Policy on Information Technology was announced only in 2011, long after the successful emergence of India's IT sector.

In case of the pharmaceutical sector, however, the story is somewhat different. Here India could create a unique policy space for itself that fostered technological capability of the domestic pharmaceutical industry.¹⁶ Carefully designed targeted policy framework adopted in the 1970s helped this industry to become self reliant, initially only in manufacturing capabilities but eventually also in technological capability that helped this sector (the generic segment) compete successfully in global markets. From the 1970s, the pharmaceutical

16 Ray and Bhaduri (2014).

industry in India embarked on a new trajectory of technological learning in terms of process development through reverse engineering and reached new heights of process capabilities to “knock off” any new drug with a non-infringing process and market them at low prices. This phenomenon has been often referred to as the *process revolution* in the Indian pharmaceutical sector and India was now poised to make a major dent in the global generics market.¹⁷

V. Concluding Remarks

India’s emergence in the world economy, as it has unfolded in the last couple of decades, is based on a foundation of knowledge resources. But India is yet to make a successful transition towards a fully knowledge-driven economy, creating disseminating and using knowledge to enhance growth and development.¹⁸

Indeed, these assets and advantages (namely, educated workforce, technological capability and knowledge of English) that have fuelled India’s economic emergence are by no means permanent in character. With some effort, they can be replicated in other countries. As a matter of fact, some of the other emerging economies, like China and Brazil are catching up with India very fast on these assets. More seriously, these assets created by our colonial history and post colonial policy effort, can be damaged or destroyed by insipid policy.

Another key point to reflect on is the tragic neglect of *low-end* labour intensive mass manufactures in India’s economic progress that has been principally driven by rapid expansion of *high-end* knowledge intensive sectors. This raises two imminent questions: (1) *how high is India’s high end?* and (2) is this a sustainable model in a democratic structure?

On the first issue, ironically India’s high end is not quite so “high”. Ray (2009) shows that although India has demonstrated significant

17 Ray (2008).

18 World Bank (2005).

competitive strength in routine (though skill intensive) tasks like coding (in software) or process development (in pharmaceuticals), it has been lacking creativity and innovativeness to reach the global frontiers of technological advancement. India is yet to make a mark in cutting edge global technologies. For instance, it is noteworthy that despite India's global presence in the generic market and its declared effort to reach newer heights in Pharmaceutical R&D, we are yet to see a *new chemical entity* (drug) from India hitting the global market. Effectively then, India cannot compete with advanced nations in the truly high tech segments in terms of creating new technologies and ideas. India has created a niche for itself in the so-called lower-end activities of the high end sectors (like customized IT and ITES and generic medicines) that do require skills and technological capability that India has acquired, but it is yet to reach the levels of the league of technologically advanced nations. As we have shown above, in the framework of the conventional structural transformation paradigm, the Indian model of development seems to have skipped the middle phase of an expanding manufacturing sector. In the process, however, India completely lost out to other emerging economies (mainly China) in the low-end segment of mass manufactures. At the same time, it has not been able to compete with the technologically advanced nations in the truly high tech segment.

It is in the *lower end activities* of the *high-end sectors* that India has carved out a niche for itself in the global economy. India's success in this niche segment has created unprecedented opportunities for a limited section (creamy layer) of the society, mainly for the upwardly mobile English speaking, university educated urban elite – what has in popular parlance known as the *Great Indian Middle Class*. However, this can never be a truly inclusive strategy of economic development as it relies on an educated middle class as the key driver of growth in the midst of vast illiteracy and poverty. This creates extreme inequality and becomes a prescription for political volatility. This is surely not a sustainable development model, especially in a democracy.

To employ the billion strong population productively, it is essential to tap the potentials for labour intensive “low end” sectors (mass products) that create job opportunities for the masses. This may require a proactive policy framework that resolves infrastructure deficits and improves labour productivity through investments in health, education and technology. Ironically, the neo-liberal world order often dictates the retreat of the state from active engagement in many of these activities. Social sector allocations, in particular education, health and poverty reduction, often become the soft targets for public expenditure compression for fiscal discipline. This not only directly affects the poor in a material sense but also raises questions about the political viability and sustainability of India’s economic progress.

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Appendix

Table A1: Structural Breaks

Series	GDP	Openness
UDmax (critical value)	23.4054 (14.8500)	625.4882 (12.5900)
WDmax (critical value)	26.6551 (16.0700)	625.4882 (13.6600)
supF(l+1 l) (critical values for l=1, 2)	16.8150 (14.60, 16.53)	39.1761 (12.25, 13.83)
Break Dates	1989, 2000	1992, 2003

Critical values given are at 5% level of significance

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