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**The Past, Present and Future of Industrial Policy in India:
Adapting to the Changing Domestic and International Environment**
Ajit Singh

Industrial Policy

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**THE PAST, PRESENT, AND FUTURE OF INDUSTRIAL POLICY IN INDIA:
ADAPTING TO THE CHANGING DOMESTIC AND INTERNATIONAL
ENVIRONMENT¹**

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Introduction and overview

In the post-World War II period India was probably the first non-communist developing country to have instituted a full-fledged industrial policy. The purpose of the policy was to co-ordinate investment decisions both in the public and the private sectors and to seize the ‘commanding heights’ of the economy by bringing certain strategic industries and firms under public ownership.

This policy program was clearly greatly influenced both by close association of the top Indian leaders with Fabian Socialism and UK labor party thinkers like Harold Laski. It also drew inspiration from what was then regarded as highly successful Soviet planning for industrial development. Indeed, emulating the Soviet Union, industrial strategy in India was formulated and implemented in the form of five-year plans. This classical Indian state-directed industrialization model held sway for three decades, from 1950-1980. The model began to erode in the 1980s. Following a serious external liquidity crisis in 1991 the model appeared to be fundamentally changed, if not abandoned altogether.

The Indian industrial policy, as embodied in the five year plans, has long been the subject of intense criticism from the influential neo-liberal critics of the country’s development. As Bradford DeLong (2001) puts it:

The conventional narrative of India’s post-World War II economic history begins with a disastrous wrong turn by India’s first prime minister, Jawaharlal Nehru, toward Fabian socialism, central planning, and an unbelievable quantity of bureaucratic red tape. This ‘license raj’ strangled the private sector and led to rampant corruption and massive inefficiency. As a result, India stagnated until bold neo-liberal economic reforms triggered by the currency crisis of 1991, and implemented by the government of Prime Minister Narasimha Rao and Finance Minister Manmohan Singh, unleashed its current wave of rapid economic growth – growth at a pace that promises to double average productivity levels and living standards in India every sixteen years.

This echoes *The Economist’s* harsh assessment of the overall Indian record for the first four decades of Indian independence

The hopes of 1947 have been betrayed. India, despite all its advantages and a generous supply of aid from the capitalist West (whose ‘wasteful’ societies it deplored), has achieved less than virtually any comparable third-world country. The cost in human terms has been staggering. Why has Indian development gone so tragically wrong? The short answer is this:

the state has done far too much and far too little. It has crippled the economy, and burdened itself nearly to breaking point, by taking on jobs it has no business doing. (1991, p 9)

In the mainstream accounts of Indian economic development the move away from India's traditional industrial policy in 1991 towards liberalization, de-regulation, market orientation has been hailed as ushering in a new era of freedom from government controls and one which promises greater prosperity for the Indian people. This unshackling of the economy is credited with achieving the huge increase in India's trend rate of growth of GDP, from the so-called Hindu (Nehru-Mahalanobis) rate of 3 to 3.5% during 1950-80 to nearly 6 to 7% per annum over the last two decades. To fulfill its promise, it is suggested that further liberalization is required both in India's domestic economy and in its external economic relations (for example, further privatization, capital account liberalization, increasing foreign direct investment (FDI)). India is regarded as a major beneficiary of globalization by the international financial institutions (IFIs) but is considered to need to go further along this road. However, the present government led by Dr. Manmohan Singh, and including reformers with impeccable credentials in key economic positions (Chidambaram and Ahluwalia), is thought to be hindered in this process by its Communist party coalition partners.

This paper takes a rather different view on these matters; specifically, it presents analysis and evidence to support the following theses.

First of all, there has been far greater continuity both in the industrial policy framework over the last five decades and in the economic record than is suggested by the neo-liberal interpretations.

Secondly, the economic growth record of the Nehru-Mahalanobis period (1950-1980), in terms of aggregate statistics, does not reflect the structural achievements of this economic model especially in creating a scientific and technical infrastructure for a modern economy. Furthermore, in the neo-liberal analyses, the enormous internal and external shocks that the economy was subject to for a considerable part of this period (1965-1975), are totally ignored.

Thirdly, the relationship between the post Nehru-Mahalanobis industrial policy and the post-1980 record of faster economic growth is critically examined. Notwithstanding this acceleration in

economic growth, students of the current economic regime point to certain observed long term tendencies which suggest that such growth may not be sustainable. These tendencies include:

- Premature de-industrialization
- Slow pace of structural change despite fast growth of the economy
- Jobless growth in modern industry and services
- Hence, increase in ‘informality’ of the economy

Next, the relationship between growth of manufacturing and that of services in an emerging country like India will receive special attention here as it is an issue with enormous general significance for economic development. It will be discussed here within a Kaldorian framework. The main question to be considered is whether due to new technology such as ICT, services could be an additional engine of growth for the Indian economy.

Finally, far from abandoning industrial policy as a relic of the past, it is suggested here that the shortcomings of current economic developments as well as the structural issues outlined above provide fresh challenges, albeit in a different form for a vigorous industrial policy for the 21st century.

The arguments for the above are developed as follows. Section II outlines the Nehru-Mahalanobis model, its rationale, the case of its critics and its outcomes. Section III considers the important analytical issue of the turning points in Indian economic growth and their implications. Section IV explores the operation and effectiveness of Indian industrial policy in the post-Nehru-Mahalanobis period by considering the particular but extremely important case of India’s IT industry. This case derives its significance in part from the fact that IT is not only modern India’s flagship industry, it is also often regarded as being an example of the success of laissez-faire rather than that of industrial policy. Section V looks to the future and examines the conceptual issues involved in the analysis of industrial policy for a country like India under a liberalized global international economic regime. Sections VI and VII outline a fresh agenda for industrial policy in India for the 21st century. The former section considers issues connected with the phenomena of

current globalization and the new technological development paradigm, represented by the new information and communication technology. Questions concerning the updating of the old agenda will be taken up in section VII. Specifically, section VII documents the current issues of jobless growth, slow structural change despite fast economic growth, and hence increasing informality in the economy. It also highlights the seriousness of the distributional issues particularly in light of the anticipated fuller integration of the Indian economy with the world economy. It also provides *inter alia* an analysis of the role of services and IT services in particular in the future development of the economy. Finally, section VIII briefly draws lessons for other countries from India's industrial policy experience. For the sake of completeness, and because of the unique institutional position of the Planning Commission in India, an Appendix is provided that summarizes the functions, objectives and structure of the Commission.

The Nehru-Mahalanobis model: the classical Indian industrial policy framework 1950-1980

In keeping with the ideals of the top leadership, the Indian five-year Plans were designed to bring about economic and social development within a 'socialist' framework. The plans pursued multiple objectives of industrialization, raising per capita incomes and achieving equity in the distribution of gains from economic progress. They also sought to reduce the existing concentration of economic power and to achieve a better regional distribution of industrial development. As far as economic strategy is concerned, several elements were the most important during the 1950s, 1960s, and most of the 1970s. First, the Indian planners emphasized the role of heavy industry in economic development and sought to build up as rapidly as possible the capital goods sector. Second, the plans envisaged a leading role for the public sector in this structural transformation of the economy. Third, major investments in the private sector were to be carried out, not by the test of private profitability, but according to the requirements of the overall national plan. And lastly, the plans emphasized technological self-reliance, and for much of the period, an extreme inward orientation

in the sense that if anything could be produced in the country, regardless of the cost, it should not be imported.²

As is well known, the economic rationale for an industrial strategy biased towards capital goods was provided by P.C. Mahalanobis. In the Mahalanobis (1963) model, essentially that of a closed economy, the development of the capital goods industry emerges as the main constraint on economic growth. This model of internal technological and heavy industry development could be rationalized for an open economy of the size of India if one envisages slow rates of growth of the world economy and trade, and, perhaps, falling commodity prices in world markets. Alternatively, it could also be justified in more orthodox terms along the lines that India's dynamic comparative advantage was in industries like steel, for which the country had available the necessary raw materials in close proximity to each other (thus reducing the costs of transportation).

An important drawback of the heavy-industry-biased industrial strategy is that it conflicts with the employment objectives embodied in the five-year plans. The plans sought to square this circle by providing external (against foreign competition) and internal (against domestic competition) protection to a number of small-scale and cottage enterprises for which the capital-labor ratio was very low. Thus, for instance, domestic modern textile factories were limited in how much they could expand their output so that they would not compete with the high-cost products of the cottage industries.

In implementing this industrial strategy, and particularly in making the private sector conform to the requirements of the plans, the government used a wide variety of measures. The most important of these were:

- Industrial licensing: For much of the period, this entailed that any enterprise which wished to manufacture a new article or sought a substantial expansion of its existing capacity had to obtain a license from the relevant government authority.
- Strict regime of import controls

- Subsidization of exports through special measures
- Administered prices
- Investments by multinationals were generally subject to strict controls.
- Jawaharlal Nehru was an architect of new institutions in all spheres, including notably those for the development of scientific and technical infrastructure, which latter blossomed into the information and communications technology industry.

It is also important to observe that the above economic strategy chosen by the Indian leadership was by no means the only feasible one available. In the public debate that took place at the time of the formulation of the early five-year plans, two leading Indian economists, Vakil and Brahmananda (1956) advocated an alternative, more orthodox strategy. After the war, the country had emerged as one of the leading exporters of textiles in the world. Vakil and Brahmananda favored concentration on textile exports, on the development of light industries, and reliance on market forces to achieve industrial development. This kind of alternative strategy was deliberately shunned by the Indian leadership in favor of state-planned industrialization.

This industrial policy framework, as noted earlier, has been subject to intense criticism, particularly by neo-liberal economists, including highly distinguished Indian scholars such as Srinivasan and Bhagwati. Isher Ahluwalia (1991) has best summed up the adverse consequences of this Indian model in the following terms:

- Barriers to entry into individual industries that limited the possibility of domestic competition;
- Indiscriminate and indefinite protection of domestic industries from foreign competition;
- The adverse effects of protecting small-scale industries and regional dispersal of growth on the choice of the optimal scale of production;
- Barriers to exit by not allowing firms, even when they were non-viable to close down, and the failure to move the resources to an alternative growing industry;

- Administrative hurdles inherent in a system of physical controls;
- Increased incentives for rent-seeking activities that resulted in dampening entrepreneurship;
- Little or no incentive to upgrade technology.

Other critics (for example, the World Bank) have added to this formidable list:

- Adverse effects of universal credit rationing through the nationalized banking system;
- Poor performance of public sector enterprises.

The first generation debate between the proponents of the model, for example Chakravarty (1988), and the aforementioned critics were examined in detail in Singh (1991). He concluded that on a long-term view of Indian economic development over the last four decades as a whole, contrary to *The Economist*, the record was far from being disastrous. It was clearly not outstanding-it was about average for the developing countries of Asia (the most successful of the three developing continents). Importantly, further analysis suggested that the mediocrity of the outcome was mostly due to the extraordinary and far-reaching economic shocks sustained by the economy during the decade 1965-75. These shocks included the effects of the two wars with Pakistan in 1965 and 1971, suspension of foreign aid for various periods following each of the wars in 1965 and 1971, the economic effects of the earlier war with China in 1962, drought in the late 1960s, maxi-devaluation of the rupee around the same time and oil price-rise in 1973-74. In this context, it is a credit to the Indian system that these shocks were contained by prudent macro-economic policies even though it resulted in slower long-term growth for almost ten years, 1965-75. India ended the 1970s with low inflation and a healthy balance of payments position. Indian economic management of these shocks compares favorably with the experience of Latin American countries during the debt-crisis of the 1980s.

Turning Points in India's Industrialization and Growth Record:

Economic historians identify two major turning points in Indian GDP growth during the 20th century. The first and most important one occurred around the early 1950s and a second around 1980. The latter is not quite as important as the former in a hundred year perspective but is far more so if the shorter and more recent time-span of the last half century is considered. These turning points have been the subject of great controversy both in statistical and economic terms. However, there is now fairly wide consensus, as indicated above, on the statistical identification of the two main breaks in long-term economic growth. The early 1950s trend-break relates to the fact that there was a big increase in long-term economic growth in the second half of the 20th century (independent India) compared to the first half (British- ruled India). The GDP growth rate in the second half was ten times faster than in the first half – nearly 5% per annum during 1950-2000, compared with 0.5% per annum during 1900-1950.³

In relation to the current economic, intellectual and ideological battles it is the second turning point of the early 1980s that is more significant. What is at issue is whether or not the acceleration in the Indian economic growth during the last two decades was a consequence of liberalization of the economy or due to other causes. The essential difficulty here for those who advocate liberalization and globalization as the solution to the problems of the Indian economy, and regard import substitution industrialization under state direction as the main reason for its poor or under-performance, is that the trend growth rate began its rise in the early 1980s rather than in the early 1990s. Serious liberalization, particularly in trade and foreign investment occurred only in the 1990s; it could not therefore be easily regarded as a cause of the trend increase in economic growth which began a full decade before such liberalization

If the trend increase in long-term economic growth in the early 1980s cannot be attributed to external liberalization which the then-finance minister Dr. Manmohan Singh instituted in 1991, how can it be explained? There are at least two plausible explanations, not mutually exclusive, which are

particularly promising. One is the suggestion that, although in the 1980s there was very little external liberalization, there was, nevertheless, very considerable de-regulation of the domestic investment regime; there were also other important domestic reforms including some liberalization of the financial sector. These reforms, together with changes in the fiscal and monetary policy stance of the government, were sufficient to help raise the long-term growth rate⁴. It must also be emphasized that these internal liberalization measures were adopted in response to the reports of a half a dozen high-level government committees, which highlighted the negative outcomes of the investment regime and over-regulation of the economy. In that sense, the reform of industrial policy in the 1990s was endogenous to the Nehru-Mahalanobis model.

The second plausible thesis is that the institutions which had been established in the post-independence period, particularly those in the field of science, technology and higher education, took longer than anticipated to produce results which would be reflected in GDP growth. It is important to emphasize that, India's achievement in science and technology which came to be recognized throughout the world in the last 15 years or so, was accomplished by following an educational path dictated by the country's own political economy rather than by implementing policies advocated by the World Bank. Under World Bank policies, India would have been obliged to give primacy to primary and secondary education rather than to tertiary and higher-level education. The country did the contrary, mainly because of the influence of the urban middle-classes in policy making and their desire for their offspring to have college education. Although the education standards in these colleges left a lot to be desired, they nevertheless helped produce a huge supply of university graduates in scientific and technical subjects. These colleges, often established by private sector initiatives, were complemented by the Government establishments of elite institutions, such as the IITs, which are world-class. This educational strategy, although in conflict with 'human development,' has clearly not harmed the long-term growth rate of the economy. Indeed, it laid the foundations for later Indian successes in information technology and other areas (Rodrik, 2006).

India's technological success is not limited to the IT industry. Its corporations have been successful in a variety of industries, including in particular, pharmaceuticals and auto components. It is widely recognized that the country also has broad-based technological capability as evidenced by the fact that India is one of the three countries in the world (Japan and US being the other two) that has built super-computers on their own. It is one of the six countries in the world to launch satellites.

That India's impressive technical and scientific infrastructure was quintessentially established by the government is well acknowledged. How this was done, and is being done, will be illustrated in this paper by considering the case of the IT industry, which was mentioned earlier, is a much disputed case regarding the effectiveness or otherwise of the government's industrial policy.

Industrial policy and IT

The growth of a modern, highly export-oriented IT industry is the arena of one of the main controversies concerning the effectiveness of Indian industrial policy. It is argued in some quarters that the outstanding achievements of the IT industry, to be outlined below, are due to its "benign neglect" by the government.⁵ As the industry was a relatively late-comer on the scene in India, it is thought to have been spared the bureaucratic inefficiencies of heavy government intervention of the Nehru-Mahalanobis period of 1950-1980. Further, it is argued that the industry has been successful precisely because its evolution in the 1990s and 2000s has coincided with the overall liberalization of the Indian economy as a result of reforms ushered in by Dr. Manmohan Singh in 1991.

There is, however, a large body of analysis and evidence that suggests that this characterization of benign neglect by the government is grossly inaccurate and misleading.⁶ Before reviewing this literature, it may be useful to briefly indicate some of the achievements of the Indian software industry particularly in relation to exports. Of the 316 Indian software companies that had

acquired international quality certification by 2002, 85 were assessed at SEICMM level 5, the highest attainable level. This compares with 42 other companies from the whole of the rest of the world. In addition, software exports from India have been growing at a rate of 30% a year in the last three of four years, reaching US\$ 9.2 billion in 2003-2004 and \$12.2 billion in 2004-2005. Outsourcing to India by Fortune 500 firms increased from 300 in 2003 to 400 in 2004. Finally, the export intensity of software production in India is more than 70%. This compares with an overall export intensity of 10% for the whole economy.

India's comparative advantage in software development lies entirely in the availability of low-cost skilled labor. An important issue is how these skills were accumulated. Arora et al (2001) report that the comparative salaries for software professionals in India were less than a tenth of those of their counterparts in the United States. For example, a programmer's salary in India was 6% of that in the US; a software developer in India, although comparatively high, was still 30% of that in the US.

This comparative advantage of cheap skilled labor did not arise spontaneously but was helped in fact established by the government. The latter took a number of broad as well as specific measures to cultivate the comparative advantage and helped the industry in other ways.

Firstly, a vast number of engineering colleges were established in both the public and the private sectors, particularly in the South of India where the state governments were highly entrepreneurial. These colleges provided education, including in IT, that was greatly subsidized by the state and central governments. Indeed, the tuition fees were waived in case of both public and private colleges. This constituted an indirect subsidy to the nascent software industry.

Secondly, the Nehru-Mahalanobis vision, referred to earlier, of creating a broad science and technology base to transform the Indian economy so as to bring about a greater degree of autonomous innovation and development was also fundamental in the development of the IT sector. This policy, as many scholars have pointed out, led to Indian scientists learning by doing in a conscious purposeful manner that had significant public as well as private benefits. Efforts that

were argued by many to be tantamount to reinventing the wheel, in the event made a major contribution to national development. This occurred not only in relation to IT but also in the case of the growth of the biotechnology and pharmaceutical industries. As the late Sanjaya Lall memorably put it, the Indian scientists and engineers not only mastered the know-how of modern technology, but also excelled in its know-why.

Thirdly, the government's indirect measures significantly helped the industry. Specifically, the government's role in the establishment of Bangalore as a hub attracting the bulk of India's scientific and technological activity was salient to the development of the IT industry. Bangalore first became a centre for cutting-edge defense industries (MIG aircraft production, rocket technology for launching domestically-made satellites, giant computers, among other things). The reason Bangalore was favored as a site was because of its distance from India's perceived antagonists, Pakistan and China. Thus, the government's development of a high technology critical mass of market opportunities and people in and around Bangalore greatly facilitated the emergence of an internationally competitive software sector.

In addition to these extremely important infrastructural factors for the development of the software industry, the government also took suitable specific measures to encourage exports from the sector at each stage of its development. NASSCOM, the highly respected Indian software industry association, fully acknowledges that the government has played a major role in the development of India's IT sector:

The software and services industry has received immense support from the government both at the central and state level. This support, in the form of tax incentives and other benefits has been instrumental in the growth of software and services exports from India. In addition to this, the government has established several task forces that have made far-reaching proposals for the development of this sector. Many of our recommendations for the government are in line with the overall thrust of these task forces (NASSCOM, 1999, as cited in Balakrishnan, 2006).

In sum, the IT industry progressed not in the context of benign neglect on the part of the

Indian government but through strategic attention by the government to the needs of the industry at each successive developmental stage.

In the general context of the development of science and technology in India, the IT story is instructive. Industrial policy during the last two decades, albeit in a new form, helped the country to develop a highly export-oriented software industry under liberalization and globalization.

Industrial policy in India's present and future: conceptual issues

Does the internal and external liberalization of the economy since 1980, and particularly the abandonment of the detailed regulation of private sector investment, mark the end of industrial policy in India? The answer is no. Post-1980 industrial policy changed form and became much more pragmatic. Basically instead of planning inputs and outputs for each firm and each industry, the government adopted indicative planning. However, it did not abandon instruments of industrial policy instruments such as very high tariffs by international standards and restrictions on portfolio and foreign direct investment.

It will be argued here that, in the new circumstances, with the opportunity to exploit India's acknowledged lead in the IT industry, as well as other structural challenges facing the economy mentioned in the Introduction, a further change in the industrial policy is called for. This does not constitute going back to the Nehru-Mahalanobis model, but, to meet the new challenges and opportunities, it should be a much more vigorous approach than the present one.

It is important to appreciate that industrial policy in India, as in the classic case of post-war Japan, needs to be considered in a broader context of overall development of the national economy. To some extent this is already the position taken by the Planning Commission. Policy has not just been confined to upgrading the *industrial* structure and promoting its industrial revolution in a broad⁷ sense, but has instead provided an overall integrated direction for the development of the whole economy. An important goal of Indian planning has always been, and continues to be, to

achieve as high a growth rate as possible, which is compatible with a desired current account balance. Further this ought to be subject to distributional considerations that, as will be argued in the next section, cannot simply be left as an after-thought but must become an integral part of the planning exercise.⁸

India today has an enviable framework for the conduct of comprehensive industrial policy in the broad sense. Many of the necessary institutions required such as the Planning Commission are in place and have broad acceptance among all the political parties and the Indian people. This is one of the reasons why this essay has not concerned itself with the normal starting point of any economic discussion of industrial policy in terms of market failures and externalities. As Dosi et al. have noted in the introduction to this volume, when considering experience regarding achieving long-run dynamic economic efficiency, market failures and coordination problems are ubiquitous in capitalistic economies, whether developed or developing; these are not minor exceptions as is often implied in orthodox writings. That planning and industrial policy are well embedded in the Indian political economy is a major advantage compared, for example, with Latin American countries who have no such heritage (see Ocampo, 2005 and other chapters in this volume).⁹

A main issue for the future of industry planning in India is what functions, old and new, should the Indian Planning Commission focus on in the years ahead. The Commission must clearly change with the times and continue to be able to provide forward looking visions of the economy and the society. In this context, it is interesting to reflect on the evolution of industrial policy in Japan and in South Korea. In Japan, the Ministry of International Trade and Industry, the traditional government agency which spearheaded the highly successful industrial policy of that country in the 1950s and 1960s continues to operate but without the coercive powers it had during that period. On the other hand, the Korean government on its joining the OECD in the early 1990s, ostentatiously abolished its Planning office. Many observers ascribe the Korean crisis of 1997-98 in part to this abandonment of the planning function which meant that the time inconsistency between foreign exchange inflows and outflows could not be foreseen and resolved in time (Chang, 2003 and Singh,

2002).

In the Indian case, there is a continuing need to guide the country's industrial revolution towards abolishing poverty, providing employment and work to all those who wish to have them and raising living standards of a billion people while maintaining democracy. The precise role of industrial policy and economic planning in India today and in the future should depend on an analysis of the constraints on the country's industrialization and economic development, which will be outlined below (See also Rodrik, 2006).

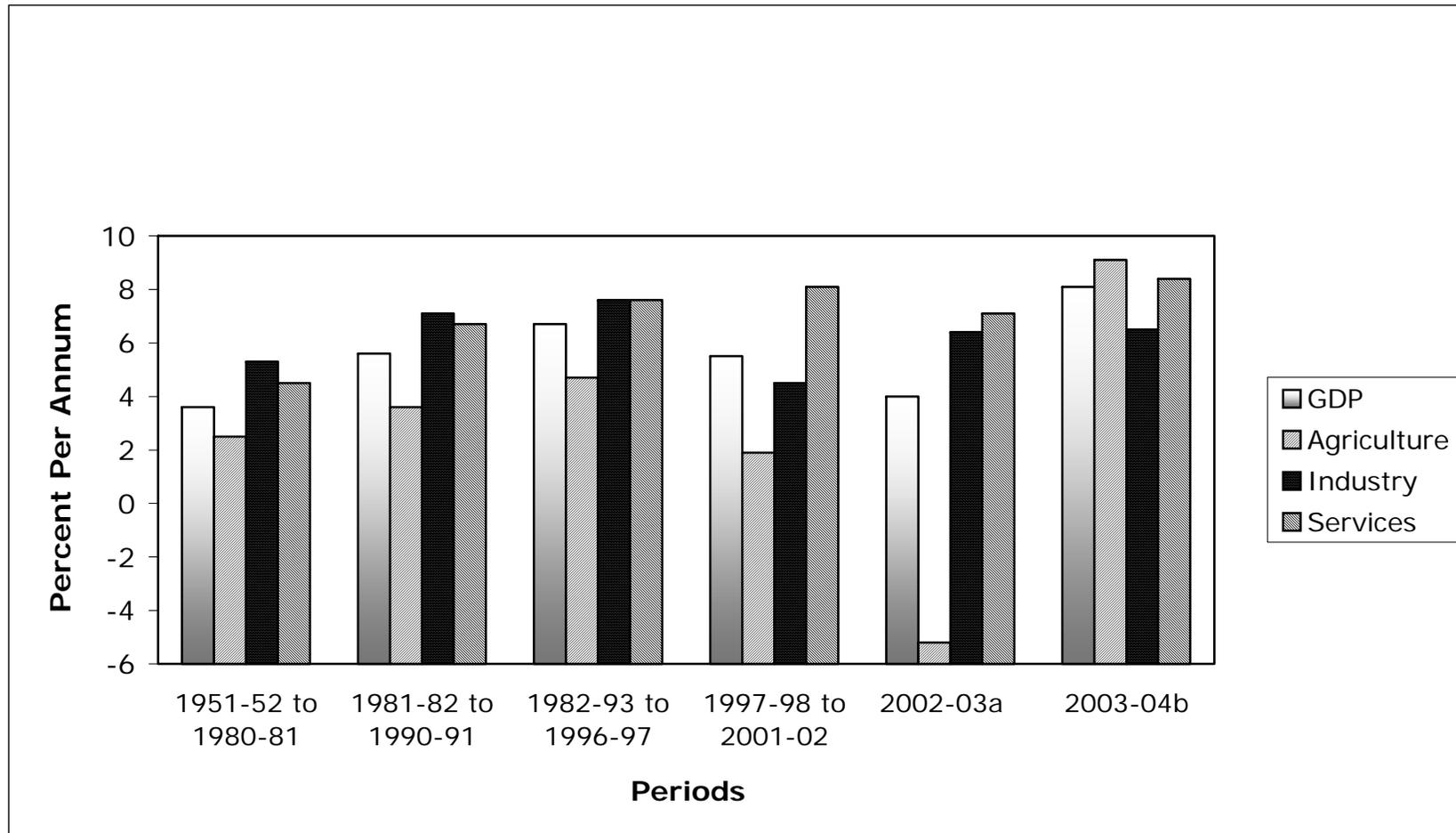
The new frontiers for industrial policy in India

There is an important new, as well as an old, agenda for the country's Planning Commission. The new agenda arises in response to globalization and technological change, particularly with respect to information technology. Relevant issues arising from these new phenomena will be examined in this section and those related to the old agenda but requiring updating will be examined in the following section.

I first take up the question of the role of services versus manufacturing in the evolution of the Indian economy in the recent period. There are important analytical questions here which require continuing research as these have salient policy implications for employment, work and the general well-being of the Indian people. A main issue which has come up during the last decade is the fact that Indian economic growth seems to be led more by services than by manufactures. Contrary to previous historical evidence, for countries at India's level of economic development, the growth of manufacturing has normally been faster than that of services and of GDP growth. The rapid growth of services, as well as the failure of the formal manufacturing sector to create net new jobs despite fast economic growth, has convinced many Indian economists that the high aggregate growth rates of the recent period are fragile. Thus, it is suggested that the recorded growth rate of more than 8% per annum for the last three years is in some sense unreal because it is

in large part due to fast growth of services rather than being primarily generated by the contribution of rapid manufacturing growth.

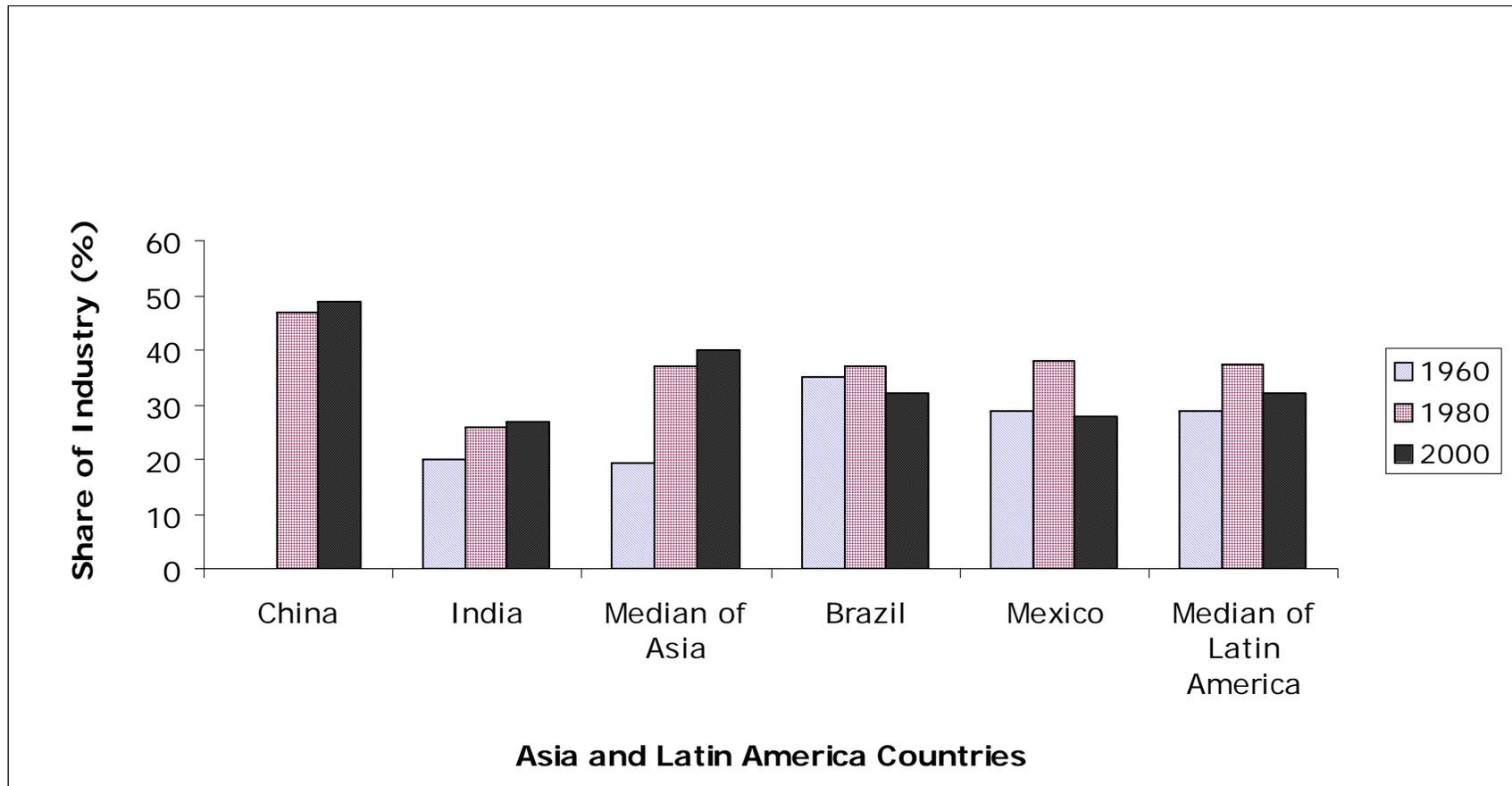
Figure 11.1: Growth of GDP and Major Sectors in India: 1950-51 to 2003-04



Sources: CSO; Economic Survey 2003-04 (Based on Acharya, 2004)

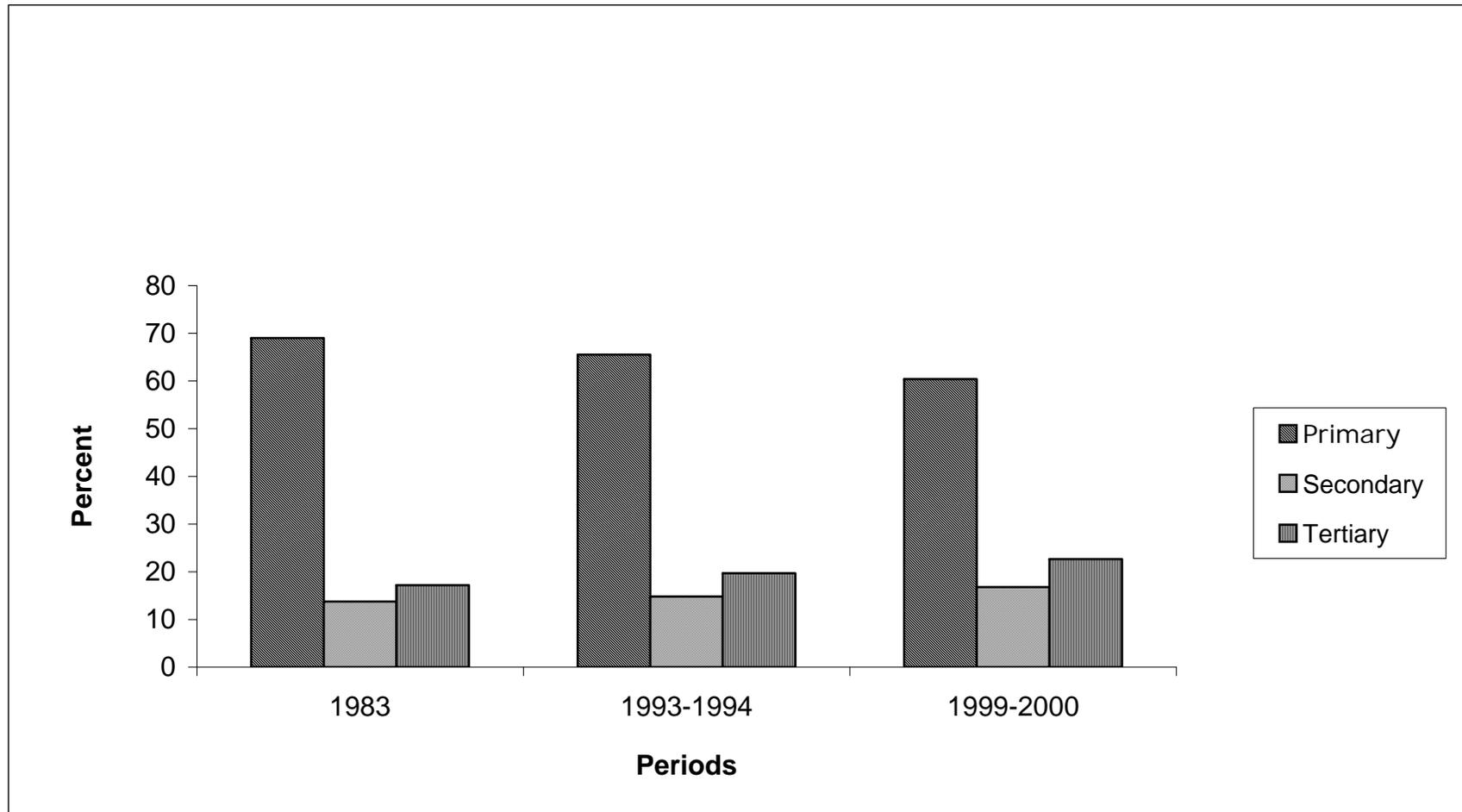
Notes: a: Quick Estimates; b: Advance Estimates for 2003-2004

Figure 11.2: Share of Industry in GDP: India, China, Brazil, Mexico and Other Countries



Source: World Development Report, (1982) and (2002)

Figure 11.3: Growth of Employment by Sectors in India: pre-reform and post-reform periods



Note: Based on Joshi (2004)

IT, services, and manufacturing

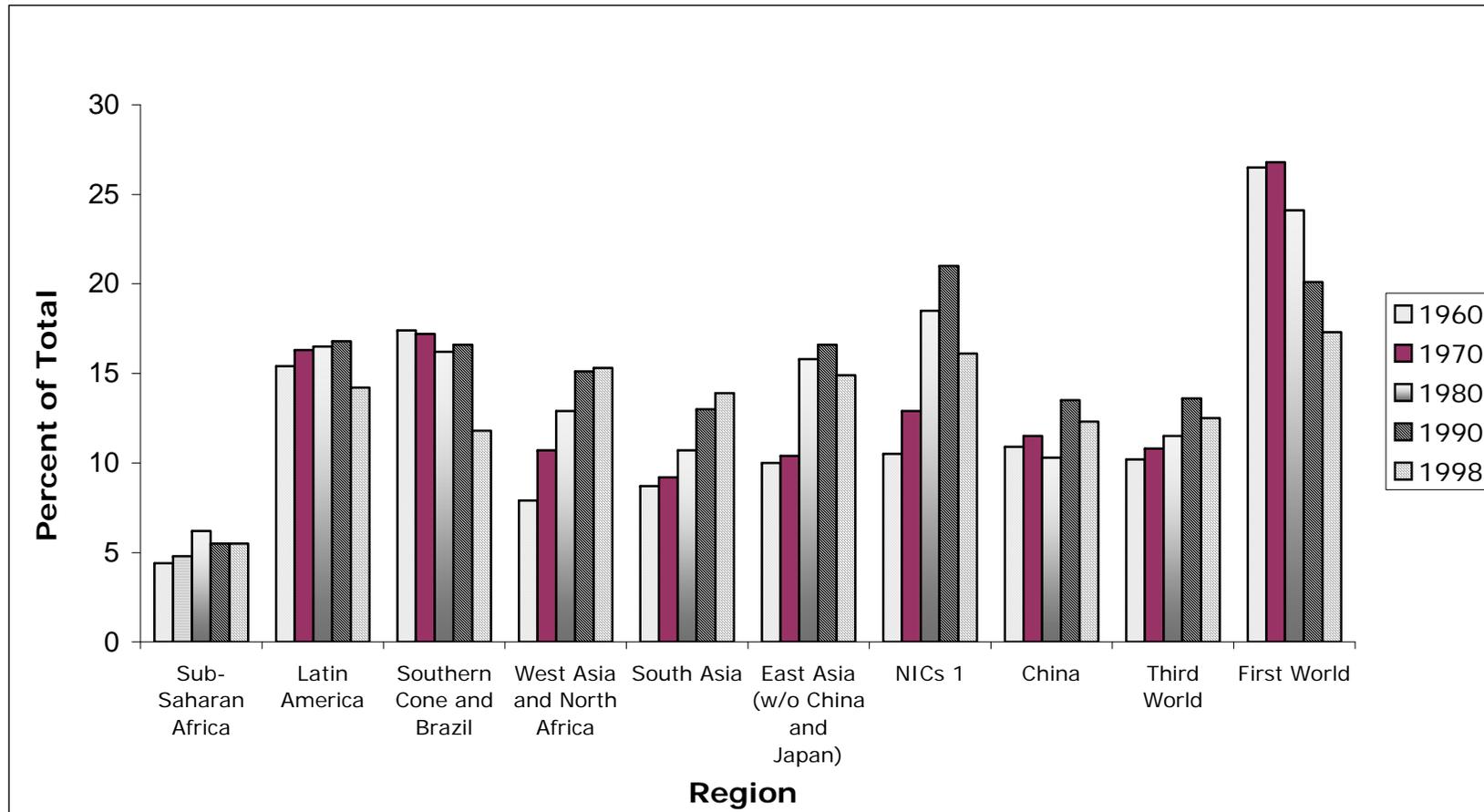
Figures 11.1 to 11.3 provide some of the basic empirical information bearing on these issues. Figure 11.1 indicates that in both the periods 1950-1980 and 1980-1990, the growth rate of industry in India was faster than that of either services or agriculture. However, during 1980-1997, the growth rates of industry and services were more or less equal, with both exceeding agricultural growth. However, Figure 11.1 suggests that services have been growing faster than either industry or agriculture since 1997.

It is normal to indicate the pace of structural change in a developing country by the growth in the share of industry in the country's GDP. Economic history suggests that, when a country begins to industrialize, its share of employment and output in manufacturing rises until a very high level of per capita income is reached, when the share of manufacturing begins to decline. In these terms, Figure 11.2 compares the pace of structural change in the Indian economy with that of other large developing countries in Asia and Latin America. The graph provides information on the share of industry in GDP in a sample of nine Asian and nine Latin American countries. However, so as not to overload the graph the data is displayed only for China and India and the median for Asian countries; in case of Latin America the information is provided for Brazil and Mexico and the median for Latin American countries. The graph suggests that between 1960 and 2000, even though it started at a low level, the share of industry in Indian GDP rose only by seven percentage points. Most of this increase took place between 1960 and 1980 and there was only a marginal improvement of one percentage point between 1980 and 2000. For China, the comparable data is available only for the period 1980-2000. The share of industry is much higher in China than in India but the growth in China's share of industry in GDP during the last two decades is not all that much different from that of India (which to some extent one would expect because of China's starting point being much higher). However, Figure 11.2 also suggests that Brazil and Mexico albeit with higher per capita incomes than that of India have lower proportions of output emanating from the

industrial sector in 2000 compared with 1980. There has similarly been increasing share of services in GDP in most of these countries.

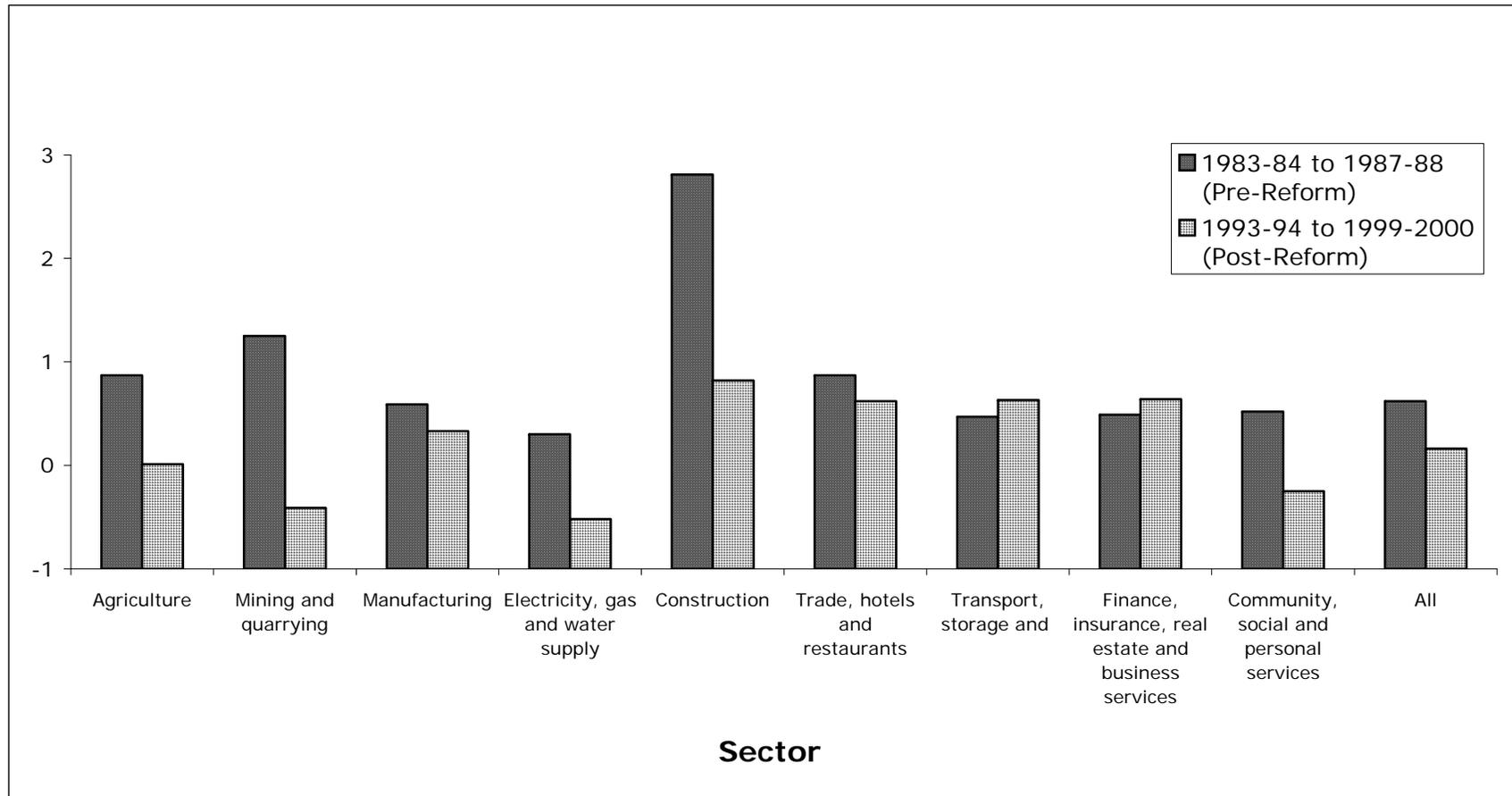
To supplement the data on the growth of value added, Figure 11.3 provides basic information on the expansion and share of employment by sectors in the Indian economy over the last 20 years. The table indicates the share of primary sector in total employment was much greater than in GDP - more than 60% compared with 27% for GDP (the figure for agriculture). If de-industrialization is defined in terms of a fall in the share of industry in total employment, the Indian economy strictly speaking did not de-industrialize in the 1980s or in the 1990s. The data underlying Figure 11.3 suggests that there was a small increase overall in the share of secondary sector in employment from 13.8% in 1983 to 16.8% in 1999-2000. This compares favorably with the record of other developing countries including China, as suggested by Figure 11.4. This figure provides evidence of de-industrialization in the above sense in several developing countries. Indeed, Palma (2004) suggests that during the 1990s, de-industrialization has been beginning at an increasingly lower level of per capita income compared with the earlier period.

Figure 11.4: Employment in Manufacturing: Developing Regions and China



Source: Calculations made using statistics from the ILO Databank. Regional averages are weighted by economically active population (Based on Palma, 2004)

Figure 11.5: Sectoral Employment Elasticities in India: pre-Reform and post-Reform Periods

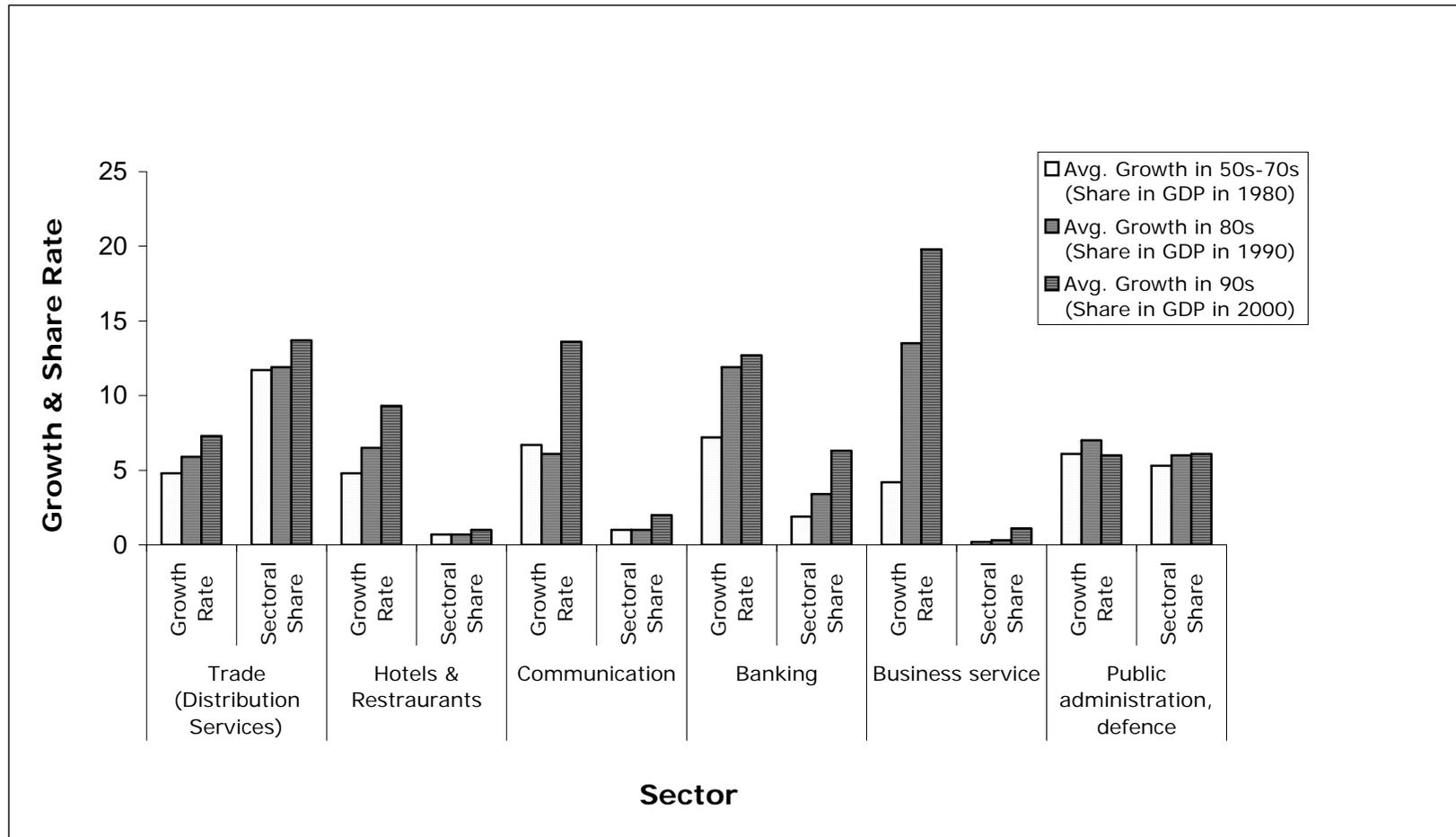


Source: Report of Special Group on Targeting Ten Million Employment Opportunities Per Year over Tenth Five Year Plan, Planning Commission, May, 2002, p.158 (Based on Seema Joshi, 2004)

Figure 11.5 provides information on changes in employment elasticities between the pre-Reform period (1983-84 to 1987-88) and the post-Reform period (1993-94 to 1999-2000) in different sectors of the Indian economy.¹⁰ The figure indicates a sharp fall in the overall employment elasticity of aggregate output in the country from 0.6 to 0.16 between the two periods. Significantly, this suggests that there has been a sizeable reduction in employment elasticity in agriculture, manufacturing and construction. However, Figure 11.5 also indicates that there are a number of service industries including finance, insurance, real estate and business services which have recorded a trend increase in employment elasticity in the post-Reform period.

Figure 11.6 displays information assembled by Gordon and Gupta (2004) on the growth of services in recent decades in the Indian economy. The figure suggests that it is not only the IT sector in services which has experienced fast growth in the last decade, but so have many other service sub-sectors grown faster than GDP, the fastest growth being recorded in business services, communication, banking services, hotels and restaurants and community services. However other services such as public administration, defense, real estate, storage, transport and personal services did not register any acceleration in growth in the 1990s (Gordon and Gupta, 2004).

Figure 11.6: Growth Rates and Sectoral Shares of Services in the Indian Economy



Based on Gordon and Gupta (2004)

Turning to the IT sector itself, although the sector has grown at a much faster rate, its quantitative significance in the overall picture of the economy is rather limited. The sector accounts at present for less than 1% of GDP; it employs less than one million people in a total labor force of 450 million. The IT sector makes however a very important contribution to the balance of payments, accounting for 20% of India's exports, which is expected to rise to 30% by 2010.

It will be appreciated that, despite the IT sector's fast growth and hence its potential for creating jobs, it will be able to *directly* employ only educated people.¹¹ Joshi (2004) notes that only 5% of India's relevant age group receive a college education. The employment needs of the uneducated masses are unlikely to be met directly by IT industry. To put things in perspective, it may also be noted that in 1999-2000 only, 8% of the Indian labor force was employed in the organized sector and 92% was absorbed by the informal un-organized sector. There is also evidence that a large proportion of informal sector workers are engaged in tertiary activities especially in large cities.¹²

In detailed analyses Dasgupta and Singh (2005 and forthcoming) suggest that despite low direct contribution of the ICT sector to employment, it is as much an engine of growth as manufacturing. These two studies suggest that the growth of both manufacturing and services is closely related to the growth of GDP. In the Kaldor type structural analysis of economic growth,¹³ it is often argued that the high correlation between GDP growth and the growth of services is not due to any independent causal relationships between these two variables but rather due to the fact that the growth of services depends largely on the growth of manufacturing. However this argument, although it may be applicable to certain services such as retailing and transport, is hardly relevant to services such as those of ICT. The latter may be regarded as causing the expansion of manufacturing sector rather than the other way round. Dasgupta and Singh's research suggests overall that while manufacturing will continue to be the main engine of economic growth for low-income countries, the ICT services constitute an additional engine of growth. Like manufacturing,

ICT services are subject to static and Kaldor's dynamic economies of scale, have positive spill-over effects on all sectors of the economy and help relax at the macro-economic level the balance of payments constraints.

The main policy implication of these analyses is that India should take advantage of its strength in ICT and use it extensively in all areas of the economy in order to upgrade manufacturing, agriculture as well as services, to compete effectively in the world economy. This would enable the economy to maintain the desired current account balance at a higher growth rate than before. However the introduction of ICT into various areas of the economy would require new institutions and social arrangements, which is one of the major new tasks facing the Indian Planning Commission during the next ten years.

Globalization and income inequality

Turning to the phenomena of globalization, the country faces a host of difficult problems both in the short term and long term. This is in part due to the fact the Indian economy has been one of the most protected economies in the world with some of the highest import duties and non-tariff barriers to trade. Tariffs since 1991, and much more so recently, have been dramatically reduced and other non-tariff trade barriers have also come down as a consequence of India's membership of the WTO. There are, moreover, huge opportunities and challenges for the country in relation to the liberalization of agricultural products currently under negotiations at the WTO. Similar freeing of trade and services is also being negotiated at the WTO. Preparing the country for this gigantic task of integration with the world economy, so as to minimize the losses of integration and maximize the gains, is an important task that will require urgent attention from the Planning Commission as well as other public and private organizations.

However, globalization also has more subtle longer term implications that need the Commission's attention, namely distribution of the gains and losses from globalization. The main

visible gainers from globalization are the vast Indian urban middle-class which is numerically very large in absolute terms but proportionately quite small, perhaps 100 million people, which amounts to less than 10% of India's population. Whether or not there has been a reduction in poverty in the period since 1991 is still a matter of academic dispute. There is, however, more consensus on the evidence which suggests that income inequality has been increasing rather than falling during the last decade. Cornia et al. (2004) sum up the available evidence on changes in income inequality since liberalization of the economy in 1991: As follows "In sum, the experience of the 1990s points to a moderate rise in both urban and rural inequality, a larger rise in overall inequality due to a widening of the average urban-rural gap, and a decline in the poverty alleviation elasticity of overall growth." (Ravallion and Datt, 1999)

The effects of globalization on income distribution have been compounded by the information technology revolution. The latter has led to a digital divide, in part because its main beneficiaries are the English speaking elite. As mentioned earlier only 5% of the Indian population is conversant with English, which of course means that in a population of over a billion, there are as many as 50 million English speakers in India. If globalization is to succeed in India with its democratic polity, the question of participation in the digital economy and in the distribution of the gains from the new technology will have to be squarely faced at the national level. The Indian Planning Commission is a body ideally suited to this task as it currently plays a major role in the distribution of resources between states. It is a body that mediates in inter-state conflicts on this issue. This expertise should help the Commission to provide a national forum for discussion and debate and consensus formation on the issue of ensuring that the countryside shares in the wealth created by information and communications technology.

Updating the old agenda

Apart from the above issues arising from ICT and globalization, there are important parts of the old

agenda of Indian industrial policy which will need to be addressed urgently and on a continuing basis. First, there is the extremely important question of infrastructure where India is thought to be much behind not only China, but also other countries in the region. Indian infrastructure spending on roads, railways, ports and airports etc., is about 6% of GDP and is considered by the government itself to represent a short-fall of at least another three percentage points. The Planning Commission, recognizing the enormity of this task, suggests that it can only be done by creating a partnership with the private sector. This would require the creation of suitable new institutional arrangements if this type of public-private partnership is to succeed.

There are similarly other parts of the old industrial policy agenda that need to be thought afresh. In this context a main issue is that of the efficiency of the public sector. During the last fifty years India has created a vast public sector without much thought being given to its micro-economic efficiency. This is not just a question of loss-making public sector production units (PSUs) but rather the issue of efficient functioning of all non-profit making public institutions including colleges, schools and hospitals. A lack of rigor and a sense of mission are lacking in most public institutions. These require public audit committees including NGOs and representatives of other social groups to establish suitable norms of efficiency and to monitor each unit's progress. The government's recent introduction of the Freedom of Information Act should be helpful in this task.

Modern theory of economic development suggests that institutions are arguably the most important deep cause of the long-term increase in standards of living. India, because of its democratic system, rule of law and protection of property rights, is regarded by many scholars as being well ahead of China in its institutional development. Rodrik and Subrahmanian (2004) estimate that, given the level of Indian institutional development, the country's per capita income should be three times its present level. This suggests that India's institutional arrangements have become less effective over time and need to be revamped.¹⁴ A good example of this is the Indian civil service which, in many respects, is no longer as efficient as it was in the 1950s and 1960s, due

to politicization of the career and promotion prospects of civil service officers. It is therefore hardly surprising that many civil servants have lost self-confidence and are demoralized. They need both to be motivated and, as servants of the people, imbued with a sense of accountability. Indeed, the reform of the civil service is essential for meeting the government's short and medium term goals, including delivering health and education to India's villages, but it is also necessary for the long-term development of the country's economy. Hence, an important task for the Planning Commission in the years ahead will be to re-examine India's institutional arrangements.

Conclusion

This paper has taken a wide view of industrial policy, emphasizing the coordinating role of the government in various spheres. It has examined the country's past and present industrial policy and speculated about the role and content of future industrial policy. It also argued that the Planning Commission is a major institutional advantage for the Indian people. All political parties accept the Commission's important role in formulating industrial policy in a narrow sense and also in guiding India's on-going industrial revolution in a broad sense. It has been suggested here that industrial policy and planned economic development did not end with deregulation of India's comprehensive and strict investment regime for the private sector. The post-Nehru-Mahalanobis industrial policy has been more pragmatic and less interventionist, focusing more on coordination of economic activity and devising appropriate measures to further develop specific sectors (as illustrated by its role with respect to ICT). It is argued here that industrial policy and planning have a potential whole new agenda based on an update of old issues and the need to tackle new issues thrown up by evolving national and international circumstances. The foregoing analysis suggests that a central challenge for the Planning Commission is to exploit India's lead in ICT and its institutional surplus to raise the current 8% trend rate of growth to double-digit numbers while promoting equitable distribution of the fruits of economic progress. This would require imaginative applications of ICT

and further technological developments in agriculture, industry and services. The challenge to the Commission would be to help raised productivity growth while also increasing employment. This in turns requires the Commission to shift its emphasis from narrow industrial policy towards questions of distribution and employment, both of which have crucial economic and political dimensions.

What useful lessons can be learned from India's industrial experience over the last five decades? The most striking lesson would appear to be that it is possible for a large country to do exceptionally well in narrow GDP growth terms while following policies not at all approved of by the protagonists of the Washington Consensus. Of course, the IFIs claim that India's success was due to liberalization. Liberalization certainly has occurred in India, but this has been at a deliberately slow pace. During the last five decades India had exceptionally high tariff rates but, even under liberalization, these were maintained at a comparatively high level. Moreover, there were continued restrictions on the entry of multinationals as well as on portfolio investment.

Notwithstanding what, from a neo-classical standpoint, can be considered self-imposed rigidities, the Indian economy achieved very high growth rates in the last two decades. It has done immeasurably better than the Latin American countries which followed Washington Consensus policies. Looking to the future, it has been suggested here that to meet the challenge of globalization, of new technology, global warming, slow pace of structural change India will need a much more vigorous industrial policy than that it has followed in the last two decades. The Planning Commission will have to give greater weight to creating a national consensus on questions of distribution and the associated problem of employment. In an increasingly globalized and technologically advancing world, promoting industrialization and growth is a multi-dimensional complex task that requires coordination by the government at various levels. A main lesson to learn from India is the need to establish appropriate institutions to formulate and promote industrial policy and that these need to win wide social acceptance. The optimal industrial policy for other countries can be specified only by examining their past economic history, the kind of economic constraints with which they are faced, and the global economic environment, both current and

prospective. Industrial policy is concerned with charting a long-term sustainable path for the economy that is both feasible and ambitious.

Notes

- ¹ In writing this paper I have drawn on my previous research done either by myself or in collaboration with others. See Singh and Ghosh (1988), Singh (1995, 1998) Dasgupta and Singh (2007).
- ² However, during the late 1970s and in the 1980s, the concept of self-reliance was redefined in less stringent terms. It was interpreted to mean an 'economic base that is sufficiently strong and internationally competitive to generate the export earnings required to pay for needed imports of goods that cannot economically be produced domestically'. See further Byrd (1990).
- ³ See further, Bhalla (2004), Papola (2005).
- ⁴ There is a big debate on this issue. See further De Long (2001), Rodrik and Subramanian (2004), Ahluwalia (1988, 2002), Singh (1995,1998) and Sinha and Tejani (2004). See Kohli (2006) for an interesting political economy explanation of this issue.
- ⁵ A leading exponent of this view is a doyen of the Indian IT industry, Mr. Narayana Murthy (2005).
- ⁶ See, for example, an incisive analysis of the key issues by Balakrishnan (2006). The latter contribution is a main source of the statistics used in this section unless stated otherwise.
- ⁷ Industrial revolution in the broad sense refers to the large trend increase in growth that occurred in England and then in Europe in the 19th century as a consequence of industrialisation.
- ⁸ Some may argue that this is too broad a definition of industrial policy but in the case of a developing economy such as India, anything less comprehensive will be inadequate. If we consider the historical experience of Japan and Korea the exemplar East Asian 'industrial policy' economies, such a policy was considered an integral part of the planning process. Thus for example the textile remained for long a favoured industry in South Korea, not because of its high technology or skill-formation externalities, but for the reason that the industry made a major contribution to the country's balance of payments. Similarly, in Japan's industrialisation in the post world war II period the domestic interest rates were kept very low to encourage business persons to invest. Therefore industrial policy for economic development must be considered in a wide context. For a discussion of these issues see further Singh (1995), Rodrik (1995), World Bank (1989). It is useful in this context to also note that there is a revisionist literature on industrial policy in Japan and Korea that suggests that these policies were unsuccessful. However, this conclusion is normally arrived at by using a very limited definition of industrial policy which is not compatible either with historical evidence on the actual operation of such policies in exemplar East Asian economies, as well as their perceived logic.
- ⁹ A planned economy was supported by Indian businessmen even before the country gained Independence. The domestic Indian business groups had formulated the so-called "Bombay Plan" to guide the development of the economy, see Chakravarty (1988).
- ¹⁰ Employment elasticity of a sector is defined as the percentage increase in the rate of growth of employment in the sector for a given percentage increase in the rate of growth of production in that sector.
- ¹¹ Unless stated otherwise, reference to the IT sector refers to the design, development and production of software.
- ¹² The distinction between formal and informal sectors has a rigorous quantitative basis only with respect to manufacturing. In manufacturing any enterprise employing more than 10 people and using electricity is regarded as belonging to the formal sector, otherwise to the informal sector. The distinction between the two sectors is hazier in other areas of the economy. See further Dasgupta and Singh (2006).
- ¹³ In modern economics the main theoretical basis for the proposition that 'manufacturing is the engine of growth' in both developed and developing countries is the work of Kaldor (1967-68). See further Dasgupta and Singh (2005 and forthcoming).
- ¹⁴ For a recent analysis of the degeneration of the Indian civil service, see Appu (2006).

Appendix I

Composition and Functions of the Indian Planning Commission

The Indian Planning Commission was established in 1950 with the following statutory mandate to:

- a. Make an assessment of the material, capital and human resources of the country, including technical personnel, and investigate the possibilities of augmenting such of these resources as are found to be deficient in relation to the nation's requirement;
- b. Formulate a Plan for the most effective and balanced utilization of country's resources;
- c. On a determination of priorities, define the stages in which the Plan should be carried out and propose the allocation of resources for the due completion of each stage;
- d. Indicate the factors which are tending to retard economic development, and determine the conditions which, in view of the current social and political situation, should be established for the successful execution of the Plan;
- e. Determine the nature of the machinery which will be necessary for securing the successful implementation of each stage of the Plan in all its aspects;
- f. Appraise from time to time the progress achieved in the execution of each stage of the Plan and recommend the adjustments of policy and measures that such appraisal may show to be necessary; and
- g. Make such interim or ancillary recommendations as appear to it to be appropriate either for facilitating the discharge of the duties assigned to it, or on a consideration of prevailing economic conditions, current policies, measures and development programs or on an examination of such specific problems as may be referred to it for advice by Central or State Governments.

The high status of the Planning Commission within the government is indicated by the fact that the prime Minister has chaired the Commission since its establishment in 1950. Furthermore, the Deputy Chairman, who is the effective head of the Commission, has always been a member of the Cabinet.

The current membership of the Commission also comprises:

Dr. Manmohan Singh (Chairman and Prime Minister of India)

Shri Montek Singh Ahluwalia (Deputy Chairman)

Shri M.V. Rajashekharan

Dr. Kirit Parikh

Prof. Abhijit Sen

Dr. V.L. Chopra

Dr. Bhalchandra Mungekar

Dr. Syeda Hameed

Shri B.N. Yugandhar

Shri Anwar-ul-Hoda

Over time, the planning function of the Commission has undergone significant transformation. Like the Japanese Ministry of International Trade and Industry, the Indian Planning Commission attempts to build a long-term strategic vision of the future and helps to determine international economic priorities. In parallel, it has shifted from the specification of detailed, mandatory investment plans for the private sector to indicative investment planning, working out sectoral targets and stimulating the economy to grow in the desired direction.

In addition, the Commission (2006) ? other dimensions of evolution in its functions. Greater emphasis is now put on achieving efficiency of resource utilization, than on resource augmentation, though the latter is by no means neglected. The Commission also plays a mediatory and facilitating role in the allocation of resources between the central government and the states.

The Commission itself claims that, since the beginning, its approach to policy formation in the critical areas of human and economic ... has been holistic. It points to a lack of coordination between ministries with regard to social sector policies, relating to rural health drinking water, rural energy needs, literacy and environmental protection. It observes that this has resulted in a multiplicity of agencies. An integrated approach, the Commission argues, can lead to better results at much lower costs.

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