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India in the World Trading System: A Quantitative Assessment

India's participation in world markets declined steadily during the second half of the twentieth century, with only a marginal improvement following the reforms of the 1990s. Its share of world merchandise exports was 2.2 percent in 1948, higher than China's 0.9 percent or Japan's 0.4 percent. It fell to one-fifth its initial level, 0.5 percent, in 1983 and recovered only marginally to 0.7 percent in 2000. Japan, in contrast, progressively increased its share from 0.4 percent in 1948 to a peak of 10.0 percent in 1993. China's share first increased to a high of 1.3 percent in 1963, then fell to a low of 1.0 percent in 1973, later recovering dramatically after its opening to the world economy in 1978 to 4.0 percent in 2000.[1]

There is no widely accepted single quantitative indicator that captures the depth and degree of integration of a given country with the world economy, but the ratio of exports plus imports to GDP is a commonly used measure. India's ratio was a mere 16.6 percent in 1980, compared with China's 22.3 percent, Malaysia's 112.5 percent, South Korea's 75.5

1. These data are from World Trade Organization, *International Trade Statistics 2001*, table II.2. Chinese export growth is particularly impressive, given that China ceased to be a contracting party to the General Agreement on Tariffs and Trade (GATT) in 1950 and thus did not receive the most-favored-nation nondiscriminatory treatment from all Contracting Parties of the GATT. The United States accorded most-favored-nation status to China on an annual basis from the time of the reestablishment of diplomatic relations in the late 1970s until China's accession to the World Trade Organization in 2002.

percent, and Thailand's 54.4 percent.[2] India has become more integrated with the world economy since then, but not as much as its neighboring countries. India's trade ratio increased to 24.2 percent in 1999, while China's trade ratio more than doubled during the same period, increasing to as high as 49.2 percent.

India's inward orientation has had significant economic costs in lower overall growth and stagnating living standards. Japan's rapid export growth was associated with very rapid GDP growth and improvements in living standards. Its export sector became more efficient over time. Its image as a producer of low-cost, low-quality imitative products shifted to that of a world leader in producing high-quality high-technology goods. Though China's internal market is large, international trade has played a powerful instrumental role in its growth process. The country achieved an average annual growth rate of more than 10 percent during the period 1980–2000 (World Bank 2002, table 4.1), and its real GDP and exports have grown even more rapidly since 1980.

India's GDP growth rate, in contrast, averaged 3.75 percent a year from 1950 to 1980, putting it in the category of a low-income, slow-growing economy among the 41 "Third World" countries examined by Reynolds (1985). Its growth rate increased to 5.8 and 6 percent respectively during the 1980s and 1990s (World Bank 2002, table 4.1). Its growth in the 1980s, however, was fueled by unsustainable fiscal expansionism—a policy that culminated in a severe macroeconomic crisis in 1991.

The following sections describe the domestic policies and international circumstances that have shaped India's long period of insulation and its more recent efforts to become integrated with the world economy. We first outline the early phases of centralized planning of autarchic industrialization during the 1950–73 period and then examine the 1974–91 period of gradual deregulation in response to exogenous shocks. We analyze the background to, and politico-economic consequences of, the 1991 economic crisis, a major turning point in India's attitude toward the international economy. The crisis created an impetus and an opportunity for a series of important reforms to India's trade regime as well as increased openness to foreign capital flows. The final section focuses on the effects of the 1990s reforms on trade patterns, industrial efficiency, growth, employment, and poverty.

2. The international comparisons presented here are based on the data cited in GOI-MoF (1998). Of course, for small open economies, the trade ratio is expected to be high. The fact that a larger economy, China, had a trade ratio one-third higher than that of India had in 1980—even before the effects of its opening to the world economy in 1978—could be seen as indicative of India's insulation from world markets.

Economic Nationalism and Autarchic Industrialization, 1950–73

This was the period when the Indian leadership embarked on giving a concrete shape to the development strategy based on the pre-Independence vision of economic self-reliance and evolving a regulatory policy regime that became increasingly more restrictive and inward oriented toward the end.

Development Strategy

The origins of economic nationalism in India can be traced to the beliefs held by those fighting for independence from British rule. They perceived the British colonial policy of laissez-faire and free trade to be the major causes of India's economic underdevelopment. Their thoughts about economic development strategies and vision of a state-guided closed economy were heavily influenced by Soviet planning. They viewed international trade as a "whirlpool of economic imperialism" (Nehru 1946, 546) rather than as a positive instrument for achieving rapid economic growth.

We noted in chapter 1 that a formal underpinning for India's development strategy is provided by Mahalanobis (1955), the author of the Second Five-Year Plan (1956–61). His two-sector analytical model, almost the same as that of Fel'dman (1928) for the Soviet Union, rationalized the Second Five-Year Plan's emphasis on basic and heavy industry.

The strategy was implemented via a policy regime with two main goals. The first was to gain state control over the "commanding heights" of the economy through a progressive expansion of public ownership of the means of production. Basic and heavy industries were exclusively reserved for development in the public sector. Fiscal and monetary policy instruments were deployed to mobilize private financial savings for public investment. Life insurance companies and commercial banks were nationalized in 1955 and 1969 respectively. The government appropriated a very large part of the private deposits of commercial banks by setting high statutory liquidity and cash reserve ratio levels, which together preempted as much as 51 percent of deposits. Commercial banks were also required to allocate credit to specified priority sectors.

The second goal was to get the private sector to conform to plan priorities through quantitative restrictions on private investment, capital issues, and foreign collaborations, as well as imports of technology, capital goods, and intermediate inputs. At least three features of the policy regime distorted market price signals and the private sector's response to them.

First, the criteria for evaluating applications were broad, with significant room for discretion on the part of the licensing authorities. Bureaucrats were under constant pressure from politicians and license seekers.

Politicized decisions and corruption were inevitable outcomes. Second, although the authorities could deny a license to a private entrepreneur for an investment that he found profitable, they could not induce him to apply for a license and invest if he did not find it profitable, regardless of its worth from a social perspective.

Third, the authorities had no system to keep track of the implementation of the licenses granted. Licensees were not obliged to invest, and frequently would not invest, if there was the possibility of changes in the economic environment that would adversely affect the profitability of investments. Aggregate capacity to be licensed was also capped by plan targets, giving firms an incentive to take licenses and thus foreclose competition by preventing other firms from getting them. The link between capacity increases targeted in a plan and their actual realization through licensing became extremely tenuous.

The attempt to control market forces in the public interest and to direct the private sector to conform to priorities of the 5-year plans failed to serve the public interest and degenerated into a tool for political and other patronage dispensation. Licensing, by limiting capacity and awarding licenses to a chosen few, precluded competition in domestic markets for products manufactured by large-scale producers. The complex licensing procedures delayed licenses and created persistent supply shortages, which were accentuated further by restrictive trade policy (discussed below). Firms were able to sell practically anything that they produced in the domestic market and thus had little incentive to improve their international competitiveness and export industrial products.

India's international trade policy had the direct effect of limiting its participation in world trade. It sought to minimize imports by supporting indigenous production and according priority to domestic use in the disposition of production. Import tariffs, based on the recommendations of the Tariff Commission, were initially used to provide infant-industry protection to selected industries. The ambitious investment in heavy industries at the start of the Second Five-Year Plan (1956–61) led to a significant spurt in import demand and a rapid depletion of foreign exchange reserves, and it precipitated a balance of payments crisis in 1957.

Quantitative restrictions (QRs) on imports were initially imposed to meet the crisis but continued until early 2001 in varying intensities. Graded import tariffs (highest on "least essential" consumer goods, lower on industrial intermediate inputs, and the lowest on capital goods deemed "essential" for development) were also introduced in the 1960s in an effort to contain balance of payments deficits.

According to Reddy (1997), (nominal) exchange rate policy in India "has evolved from the rupee being pegged to the pound sterling until 1975, pegged to an undisclosed currency basket until 1992 and after a

year's experience with a dual exchange rate system to a market-related system by 1993." Joshi and Little (1994, chap. 11) provide a detailed discussion of the evolution until the reforms of 1991. Their econometric analysis for the period 1960–90 and an extension of it by Srinivasan (1998b) and Seddon and Srinivasan (2001) showed that India's supply of and demand for exports are both responsive in the long run to changes in the real effective exchange rate (REER) and that the relevant elasticities are more than adequate for a real depreciation to improve the current account—even with a *zero price elasticity of demand for imports*. They raise "the crucial question . . . whether the nominal exchange rate in India was managed in such a way as to produce the appropriate real exchange rate [with] the latter . . . defined as that value of the REER which would produce a sustainable current account deficit consistently with internal balance and low inflation" (Joshi and Little 1994, 280).

Joshi and Little do concede that determining the appropriate time path for the REER is a very complicated problem. But they get around it by restating it as one of determining the *direction of movement* of the REER, starting from an initial position that is deemed appropriate. Thus, unless there are permanent real changes in the internal environment that affect external competitiveness, the REER should be kept constant. Their assessment, with which we concur, is that Indian policymakers have been reluctant to vary the nominal exchange rate actively to manage the current account. In fact, until it was overruled by a decision of the World Trade Organization's (WTO's) Dispute Settlement Body in 2000, India continued to use QRs on imports as main tools for containing pressures on the current account balance by invoking the balance of payments exception under Article XVIII(B) of the General Agreement on Tariffs and Trade (GATT).

The main objective of India's exchange rate policy in the postreform era of managed float, according to Reddy (1997), is to ensure that economic fundamentals are reflected in the external value of the rupee. In practice, market interventions have been guided by three purposes: first, to redress excess volatility in exchange rate movements; second, to maintain an adequate level of foreign exchange reserves; and third, to contribute to the development of a healthy foreign exchange market.

Leaving aside the apparently successful management of the exchange rate in the short period of 9 years since 1993, it is fair to say that the period from 1947 to 1993 was one in which, except for occasional and dramatic episodes of devaluation (as in 1949 and 1966), there was no active use of changes in the nominal exchange rate as a tool of macroeconomic management. Indeed for most of this period, the exchange rate was overvalued.

The overvalued exchange rate provided cheap foreign exchange for priority uses (particularly by the government), discriminated against ex-

ports, and generated excess demand for imports restricted by QRs. Export subsidization measures were introduced to correct in part for the distortions. Several studies of these measures by Bhagwati and Srinivasan (1975), Rao (1985), and the World Bank (1992) showed that these policies were inadequate. The effective exchange rate (rupees per dollar) for exporters, inclusive of subsidies, was lower than that for the importers both in the aggregate as well as at the level of individual industries. The absence of correction for exchange rate overvaluation and its bias against exports even in nominal terms led to an export stagnation while boosting demand for imports.

The interlinked trade and exchange rate policies became more complicated as the government faced the task of financing the ever-growing import requirements of industrialization in the face of stagnant or slow-growing export earnings. Persistent deficits in the balance of payments were mitigated by increases in tariff levels and in the severity of QRs rather than by devaluation of the rupee.

Bilateral and multilateral external assistance (1955–80), barter trade agreements with Eastern Europe and the Soviet Union (1965–90), and external commercial borrowing and deposits by nonresident Indians (1980–90) also helped to prop up the exchange rate and limit the external payments deficit. The options of exchange rate adjustment and the aggressive use of trade policies to promote exports were not seriously considered.

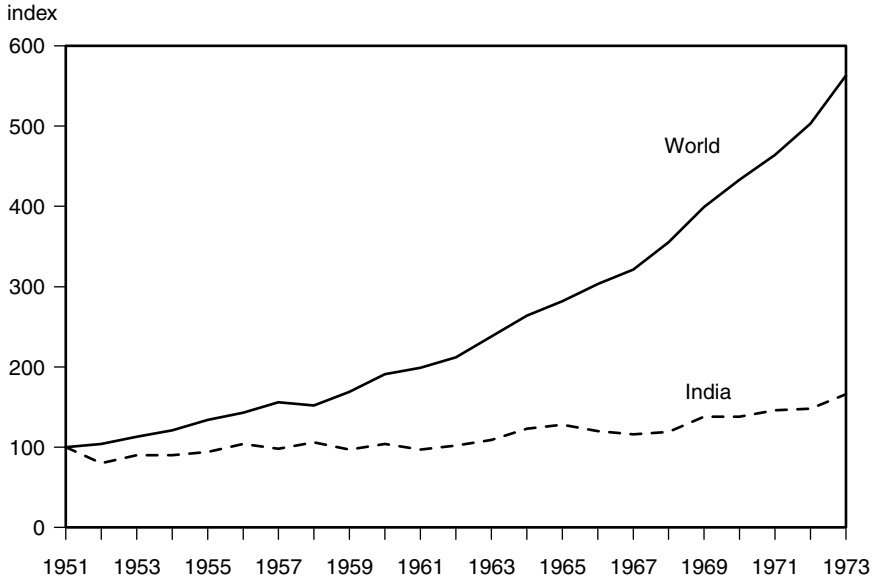
Economic Performance

India became increasingly insulated from the world economy under this development strategy. The volume of world exports expanded at an average rate of 7.9 percent annually from 1950 to 1973, but India's exports grew by only 2.7 percent annually. Figure 2.1 shows the widening gap during the period between world and Indian exports. The ratio of exports to GDP also showed a declining trend from a high of 7.3 percent in 1951 to the lowest level of 3 percent in 1965 and remained below 4 percent until 1973 (figure 2.2). A similar trend is also visible in the figure with regard to the ratio of exports plus imports to GDP.

The trends in rates of gross domestic savings (GDS) and gross domestic capital formation (GDCF) in this period are depicted in figures 2.3 and 2.4. The two rates were in balance from 1952 to 1955. Both rose from around 8 to 13 percent until the beginning of the Second Five-Year Plan in 1956. From 1956 to about the mid-1960s, both GDS and GDCF fluctuated. GDCF thereafter increased to about 17 percent of GDP in the decade 1965–75. The deficit of domestic savings over investment was financed mostly from concessional foreign aid.

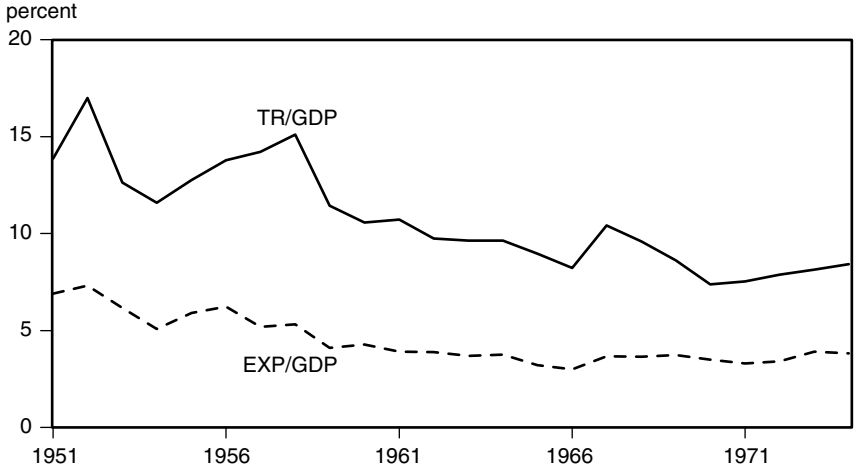
The average annual growth rate of GDP at constant 1993–94 prices was a respectable 3.87 percent from 1950 to 1964 in comparison with the vir-

Figure 2.1 Export volume indices for the world and India, 1951–73
(base: 1951 = 100)



Source: Authors' calculations.

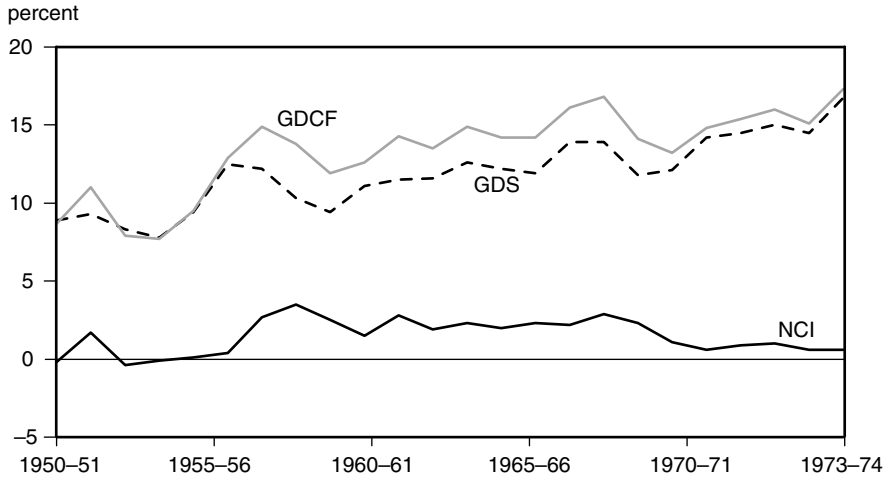
Figure 2.2 India's trade and exports as percentages of GDP, 1951–74



TR/GDP = trade (value of exports and imports) as a percentage of GDP
EXP/GDP = value of exports as a percentage of GDP

Source: CSO (2001a and 2001b).

Figure 2.3 India's gross domestic savings, gross domestic capital formation, and net capital inflow as percentages of GDP, 1950–51 to 1973–74



GDS = gross domestic savings
GDCF = gross domestic capital formation
NCI = net capital inflow

Note: NCI is net capital inflow as a percentage of GDP; it is the difference between GDCF and GDS as a percentage of GDP.

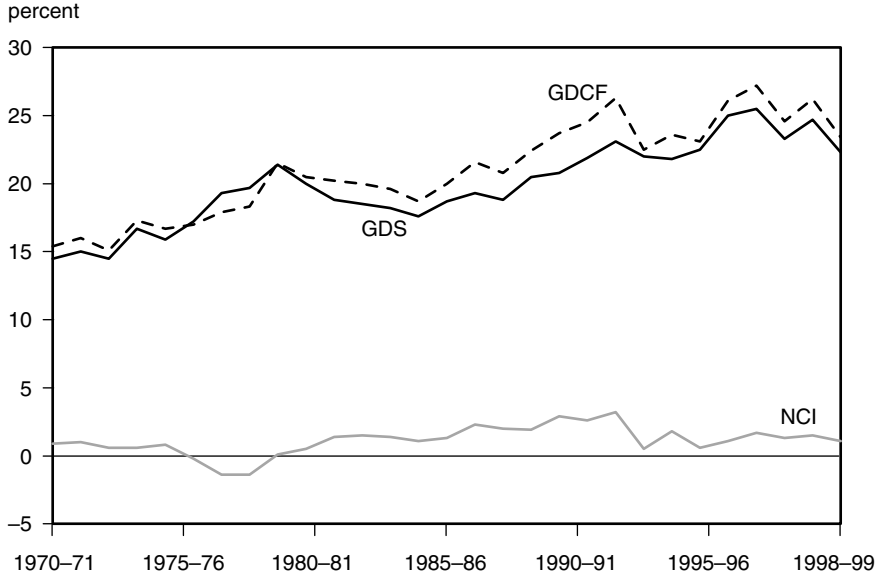
Source: CSO (2000b).

tual stagnation in real GDP during the first half of the 20th century.[3] Reductions in foreign assistance in the mid-1960s put great pressure to mo-

3. In retrospect, it appears that the mid-1960s would have been the right time to have shifted from import substitution to export orientation in policy. The spectacularly successful economies of South Korea and Taiwan embarked on their export-oriented growth strategy at this time. India's less costly import substitution had been completed and investment in infrastructure had matured by this time. The external environment was also favorable: a rising volume of world exports, steady growth with full employment in the industrialized countries generating labor scarcity, and the absence of any competitors except Japan for exports of labor-intensive manufactured products.

In the Indian context, detailed analysis pertaining to the 1950s by Singh (1964), who was to become finance minister in 1991, and Cohen (1964) and MacDougall (1964) had presented persuasive arguments in favor of export orientation. However, apart from the grip of economic nationalism that still persisted, exogenous events intervened. The war with Pakistan in 1965 resulted in the suspension of US foreign aid, which had provided major balance of payments support. Two successive and severe agricultural droughts during the period 1965–67 and the political fallout from the perceived failure of the June 1966 devaluation (which coincided with the high rate of inflation induced by harvest failure but which was blamed on the politically unacceptable devaluation) also derailed the process of deregulation that had started with devaluation (Bhagwati and Srinivasan 1975).

Figure 2.4 India's gross domestic savings, gross domestic capital formation, and net capital inflow as percentages of GDP, 1970–71 to 1998–99



GDS = gross domestic savings
GDCF = gross domestic capital formation
NCI = net capital inflow

Note: NCI is net capital inflow as a percentage of GDP; it is the difference between GDCF and GDS as a percentage of GDP.

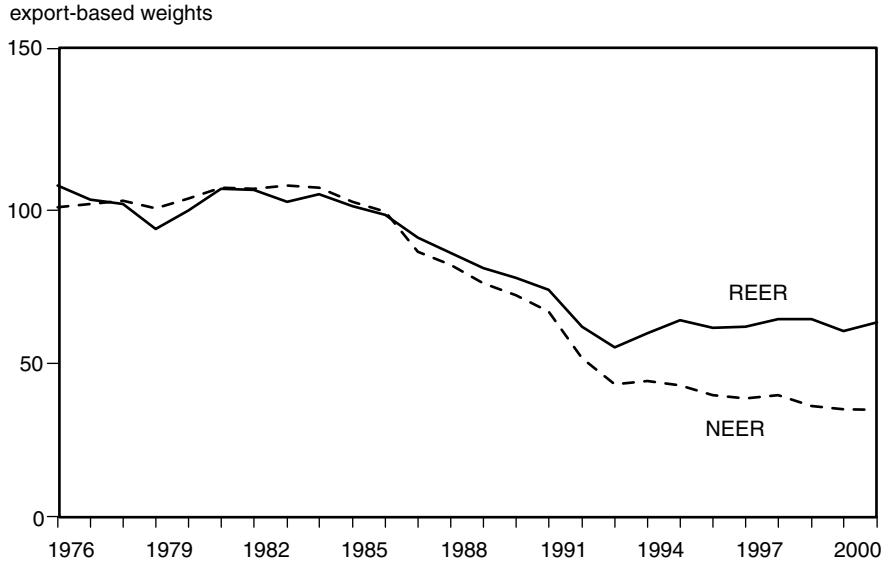
Source: CSO (2000b).

bilize domestic resources. However, these efforts had little effect on the aggregate growth performance of the economy. A broad sense of the efficiency of capital utilization can be gained from the implicit incremental capital output ratio (ICOR).[4] The realized ICOR during the first 15 years of planning turned out to be about 4.6 in comparison with the 3.0 assumed in the plan calculations.

The next decade from 1964, leading up to the oil price hike of 1973–74, saw an increase in average GDCF at constant prices from about 16.8 to 21.7 percent of GDP, but a lower GDP growth rate of 3.3 percent annually, and an implicit ICOR of as high as 6.6. Indian planners succeeded in domestic resource mobilization with the more than doubling of GDS and in-

4. Implicit ICOR is derived from an ex-post growth identity: the growth rate equals the rate of investment divided by ICOR.

Figure 2.5 India's real and nominal effective exchange rates, 1976–2000



REER = real effective exchange rate
NEER = nominal effective exchange rate

Source: Handbook of Statistics on the Indian Economy 2001, Reserve Bank of India.

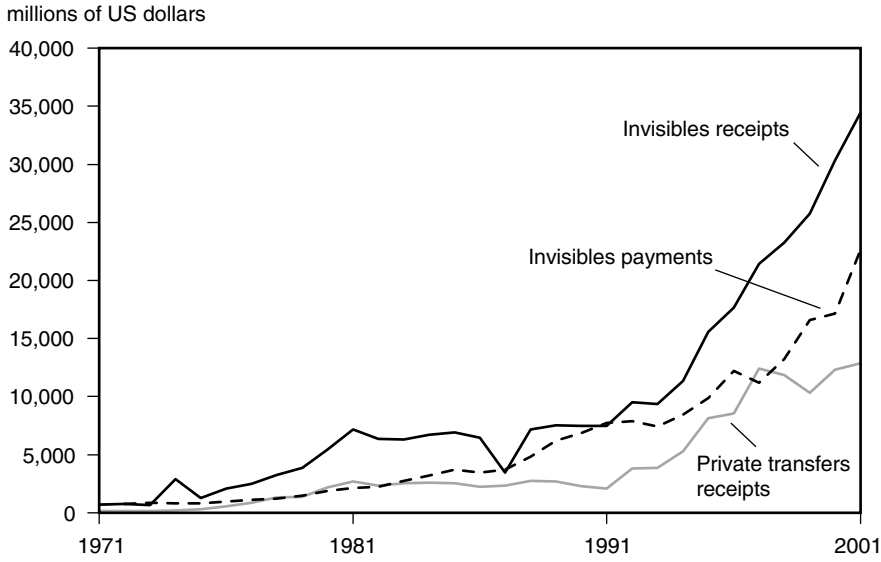
vestment rates during the years 1950–51 and 1980–81. Nevertheless, the lack of domestic and international competition resulting from industrial and trade policies took their toll on the efficiency of capital utilization. This was particularly unfortunate for a low-income country like India, where capital was scarce relative to labor.

Piecemeal Deregulation, 1974–91

The collapse of the Bretton Woods system of fixed exchange rates in 1971 and the oil price hikes of 1973 and 1979 brought about several changes in India's external-sector policies. India was almost totally dependent on oil imports, and the first oil price rise increased the current account deficit and led to a deterioration of the terms of trade. Still, the impact of the shock was not disastrous. India's current account deficit was initially very low—about 1 percent of GDP. Concessional foreign aid from international agencies also helped soften the immediate adverse impact.

These exogenous shocks turned out to be favorable for India's economy in several ways. First, even without an active nominal exchange rate policy, some REER depreciation (figure 2.5) resulted from linking the ex-

Figure 2.6 India's receipts from private transfers and invisibles



Source: Authors' calculations.

change rate of the rupee initially with the UK pound and later with an undisclosed basket of currencies. The exchange rate of the pound and other currencies depreciated with respect to the US dollar, and the rupee also depreciated in tandem. This arrangement allowed the rupee to depreciate as the pound-dollar exchange rate increased. It avoided an explicit formal exchange rate devaluation, which would have been politically unacceptable after the perceived failure of the devaluation of the rupee in June 1966 (see Bhagwati and Srinivasan 1975). The de facto devaluation of the rupee slowed, however, when the exchange rate was linked to a basket of currencies because these currencies no longer depreciated with respect to the dollar.

Second, the steep hikes in international oil prices led to massive income transfers to the oil-rich Persian Gulf countries that favorably spilled over into the Indian economy in two ways. One, the newly affluent oil-producing nations provided ideal markets for India's exports of agricultural products because of locational advantage. Two, the Organization of Petroleum Exporting Countries development efforts generated demand for middle-level skills that was met by the migration of Indian workers. The migrants' remittances to their families at home (a major component of private transfers in the invisible account) averaged $185.8 million during the period 1971–75 and rose sharply to an annual average of $1.9 billion in the next 10 years (figure 2.6).

These earnings contributed to increases in foreign exchange reserves in the second half of the 1970s and helped the country finance the increased cost of oil after the second oil price hike of 1979–80 without resorting to enhanced import controls. Figure 2.6 also shows the invisible receipts and payments, which indicate that a major source of surplus on the invisible account in most years has been receipts from private transfers.

The first half of the 1970s also saw the discovery and exploitation of oil in the Arabian Sea near Bombay that reduced oil imports. During the mid-1970s, a succession of favorable agricultural harvests in combination with an agricultural price policy that offered attractive prices to producers resulted in an accumulation of public stocks of food grains that provided a cushion against potential food price inflation. Armed with comfortable public stocks of food grains and foreign exchange reserves, the government did not adopt contractionary policies in response to the second oil-price hike in 1979–80. Instead, it relaxed counterproductive regulations on domestic and international transactions during the 1980s.

These actions were based on the recommendations of several official committees that looked into possibilities for the simplification, rationalization, and liberalization of the policy regime. The committees included one on import and export policies, another to examine a possible shift from physical to financial controls, and a third on industrial policies. They recommended cautious and selective deregulation and rationalization.

Relaxation of industrial licensing consisted of several measures. Licensees were permitted to diversify in interrelated areas without seeking a fresh license. A minimum efficient scale of capacity was announced for several industries. Automatic expansion of already licensed capacity and production in excess of the licensed capacity were allowed without penalty under stipulated conditions. Public-sector term-lending institutions were also established to provide convertible debt finance for private-sector projects. These measures provided limited but additional flexibility to the private industrial units in adjusting supplies to changes in market demand.

Trade policy was set for 3-year terms to reduce the uncertainties of year-to-year policy changes. The export-import policy began to be announced for 3-year periods in place of the annual or semiannual statements before 1985. Complexity, however, persisted. As in the past, the import-licensing system divided imports into three categories, in ascending order of "essentiality": consumer goods, intermediate goods (raw materials, components, and parts), and capital goods. Imports of nonessential consumer goods were banned, whereas those seen as essential (food grains, edible oils, sugar, and certain drugs and pharmaceuticals) were imported exclusively through state agencies.

Other imports were divided into the following categories: nonpermissible (banned), limited permissible (with mandatory certification from another agency regarding essentiality as well as mandatory clearance from

the controller general of imports and exports, or CGI&E), automatic permissible (without mandatory certification but with clearance from CGI&E), and open general license (without certification, without clearance from CGI&E). An elaborate administrative machinery was established for the allocation of permissible imports by sector of use (private and public), by type of goods (consumer, intermediate, capital), and by industries and categories of firms within industries. Sixty items came to be canalized by public-sector agencies. Licenses to import items (e.g., dried fruits) that fetched substantial price premiums on the domestic market were granted to exporters as an incentive.

Not all profitable exports were allowed. The 1988–91 policy statement mentioned nonpermissible (67 products) and restricted exports (105 products). The crucial difference between the import and export policies, however, was that importing an item not on one of the lists was illegal, whereas exports of anything were legal, except the 172 items on the list.

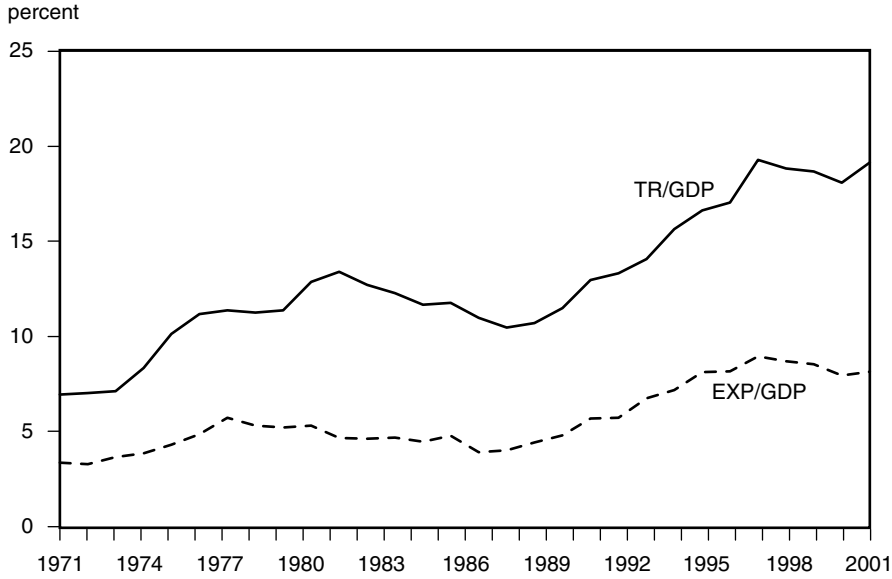
The selective deregulation of the policy regime did not change its basic character. There was indeed some rationalization (reducing distortions) and extension of coverage of export incentives. This rationalization involved simply substituting one form of control for another in some cases and even increased the regime's restrictiveness in others. Apparent tariff levels actually increased as procedural simplifications of QRs on imports shifted mostly noncompetitive importable items from nonpermissible (or automatic permissible) lists to the open general license category with high tariffs. These measures did not fully offset the handicaps faced by exporters, and the profitability of selling on the domestic market remained consistently higher than selling on the international market.

In sum, the policy regime remained distorted and restrictive in character, despite some piecemeal deregulation, until 1991.

India's exports increased over this period of piecemeal reforms, but this was more due to a real exchange rate depreciation mostly as a result of exogenous forces than due to an active policy of nominal devaluation or due to explicit policy reforms aimed at reducing trade barriers. Growth performance was also distinctly better in the 1980s than in the earlier period. This surge in growth, however, was supported on the demand side by unsustainable fiscal policies, and it ended with an economic crisis in 1991.

Although the trade control regime continued to penalize exportable activities despite deregulation, Indian exports in dollar terms doubled from $8.9 billion in 1985–86 to $18.1 billion in 1990–91. The export ratio showed an upward trend after 1986, following the flattening in the first half of the decade (figure 2.7). Although the growth in volume of world merchandise exports slowed down from nearly 8 percent a year during the period from 1951 to 1973 to 2.7 percent a year between 1973 and 1986, the growth in the volume of India's merchandise exports in the latter period increased to 4.4 percent from 2.8 percent in the earlier period. During the period

Figure 2.7 India's trade and exports as percentages of GDP, 1971–2001



TR/GDP = trade (value of exports and imports) as percent of GDP
EXP/GDP = value of exports as percent of GDP

Source: CSO (2001a and 2001b).

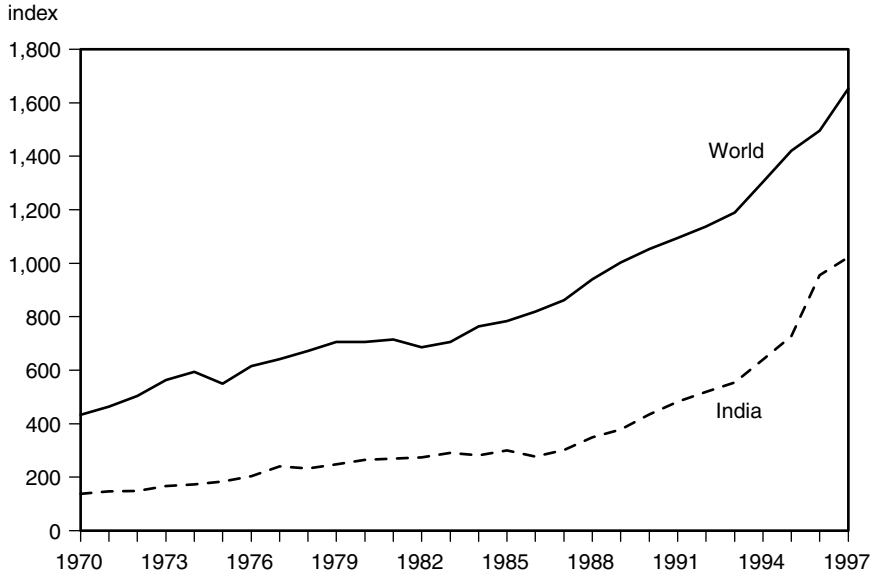
1986–91, India managed to keep pace with the resumption of growth in world merchandise exports (figure 2.8).

Two factors contributed to this outcome. First, there was a cumulative depreciation in REER to the extent of 26.9 percent between 1984 and 1990, compared with 7.6 percent appreciation in the previous 6 years (see figure 2.5).[5] Second, there was a resumption of growth in the volume of world exports after 1986, when the world economy completed its adjustment to the two oil-price hikes. The sensitivity of Indian exports to REER changes has been pointed out by Joshi and Little (1994), Srinivasan (1998b), and Seddon and Srinivasan (2001).

The average annual growth rate of GDP at constant (1993–94) prices increased to 5.7 percent in the 1980s from just 3.75 percent from 1950 to 1980. Efficiency of capital use improved as well, with a fall in the average implicit ICOR from 5.7 during the period 1950–80 to 3.7 in the 1980s (table 2.1).

5. Index of REER in figure 2.5 (downward movement reflecting depreciation) is based on India's exports to 36 partner countries as weights and base 1985=100.

Figure 2.8 Export volume indices for the world and India, 1970–97 (base: 1951 = 100)



Source: Authors' calculations.

This growth performance proved to be unsustainable. The piecemeal deregulation did contribute to greater capacity utilization, but did not go far enough to improve India's international competitiveness. Export volume growth, at about 6.5 percent a year during the 1980s, was not much higher than output growth of 5.7 percent a year. The increased production was absorbed by increased domestic demand, which was stimulated by fiscal expansion.

The gross fiscal deficit of the central government as a proportion of GDP averaged 3.2 percent during the first half of the 1970s and 4.3 percent during the second half.[6] It increased continuously in the 1980s to 7.8 percent by 1990–91 (see figure 2.9). This movement coincided with an increase in the cost of public borrowing, as interest rates rose from low and administered values in the earlier period to higher and variable market-determined levels later. Rising fiscal deficits crowded out private investment, and inflationary pressures started asserting themselves.

6. Recall footnote 1 of chapter 1.

Table 2.1 Indicators of aggregate economic performance for India, 1951–55 to 2001–02

Series number[a] (1)	Year[b] (2)	Rate of GDCF at current prices[c] (3)	Rate of GDS at current prices[d] (4)	Rate of net capital inflow (+) at current prices[e] (5)	Rate of GDCF at constant 1993–94 prices (6)	Rate of growth of GDP_{FC} at 1993–94 prices[f] (7)	Implicit ICOR (column 6/7) (8)
1	1951–55	8.96	8.74	0.22	14.72	3.85	3.83
2	1956–60	13.22	11.10	2.12	19.02	3.38	5.63
3	1961–65	14.22	11.96	2.26	19.28	5.00	3.86
4	1966–70	15.00	13.18	1.82	22.04	2.90	7.60
5	1971–73	15.50	14.67	0.83	21.00	1.90	11.05
6	1974–80	18.46	18.60	–0.14	22.73	3.40	6.69
7	1981–85	19.70	18.36	1.34	20.72	5.66	3.61
8	1986–90	22.60	20.26	2.34	21.96	5.84	3.75
9	1990–91	26.30	23.10	3.20	25.40	5.30	
10	1991–92	22.50	22.00	0.50	22.00	1.30	
11	1992–93	23.60	21.80	1.80	22.90	5.10	
12	1993–94	23.10	22.50	0.60	23.10	5.90	
13	1994–95	26.00	24.80	1.20	26.40	7.30	
14	1995–96	26.80	25.10	1.70	27.20	7.30	
15	1996–97	24.50	23.20	1.30	25.10	7.90	
16	1997–98	25.00	23.50	1.50	26.40	4.80	
17	1998–99	23.00	22.00	1.00	25.40	6.60	
18	1999–2000	24.30	23.20	1.10	26.70	6.0 (P)[g]	
19	2000–01	24.00	23.40	0.60	26.30	4.0 (Q)[g]	
20	2001–02	—	—	—	—	5.4 (RA)[g]	

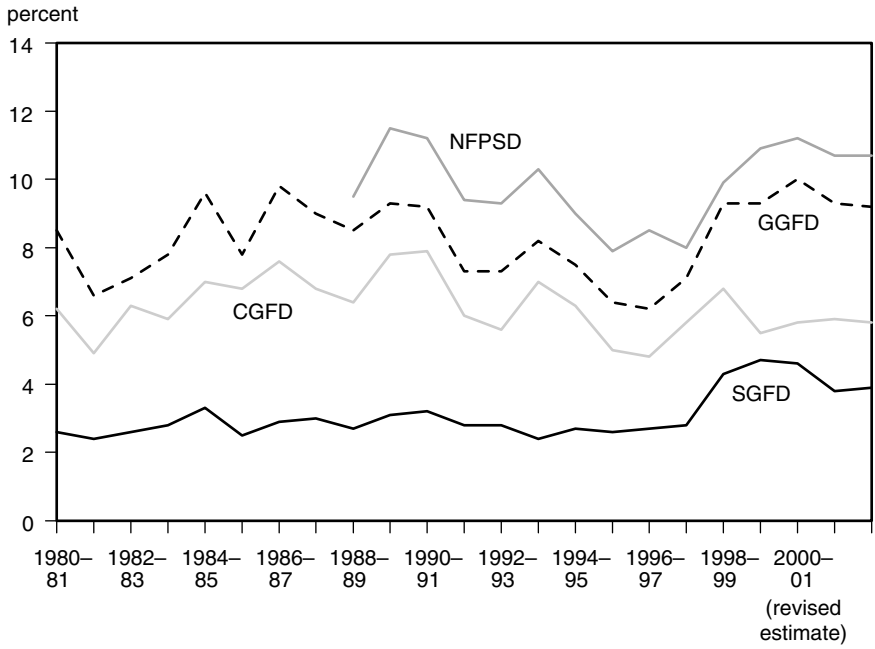
GDCF = gross domestic capital formation
GDS = gross domestic savings
ICOR = incremental capital output ratio

a. Lines 1 to 9 and 19 to 20 are simple averages of the annual figures.
b. 1951 refers to fiscal year (April–March) 1950–51 and so on.
c. Rate of GDCF = gross domestic capital formation as a percentage of GDP at market prices.
d. Rate of GDS = gross domestic savings as a percentage of GDP at market prices.
e. Rate of net capital inflow = net capital inflow (+) / outflow (–) as a percentage of GDP at market prices. This equals the difference between the rate of GDCF and the rate of GDS.
f. Rate of growth of GDP_{FC} = rate of growth of GDP at factor cost at constant 1993–94 prices.
g. P means a provisional estimate, Q means a quick estimate, and RA means a revised advance estimate.

Sources: CSO (2001a, 2001b); Press Information Bureau, "Revised Estimates of Annual National Income and Quarterly Estimates of Gross Domestic Product, 2001–02," Press Note, June 28, 2002.

Political and external factors exacerbated the tenuous fiscal situation. Frequent changes in the central government toward the end of the 1980s created political uncertainty and eroded confidence in the government's ability to manage the economy and maintain stable economic policies. With the collapse of the centrally planned economies of Eastern Europe and the Soviet Union, barter trade with these economies broke down. The

Figure 2.9 India's gross fiscal deficit as a percentage of GDP



CGFD = central government fiscal deficit
GGFD = gross government fiscal deficit (central and states combined)
NFPSD = nonfinancial public-sector debt
SGFD = state governments fiscal deficit

Source: Data provided by the World Bank.

Gulf War of 1990 hit India hard. First, the war-induced oil-price rise substantially increased the import bill. Second, stranded Indian migrant workers had to be repatriated, and these costs added to invisibles imports at the same time that the loss of their remittances reduced invisibles earnings. This deteriorating balance of payments added to the fiscal problems.

The Crisis of 1991: A Turning Point

The current account deficit rose to a record 3.2 percent of GDP in 1990, and debt-service payments amounted to as much as 35.3 percent of current foreign exchange receipts (table 2.2). Foreign exchange reserves were down to a level barely enough to finance imports for 2½ months. Short-term debts amounted to a dangerously high level of 146.5 percent of

Table 2.2 Selected indicators of the external sector for India, 1990–91 to 2000–01

Series number	Indicator	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01
1	Growth of exports (DGCI&S)	9.2	–1.5	3.8	20.0	18.4	20.8	5.3	4.6	–5.1	10.8	21.0
2	Growth of imports (DGCI&S)	13.5	–19.4	12.7	6.5	23.0	28.0	6.7	6.0	2.2	17.2	1.9
	(a) excluding petroleum, oil, and lubricants	3.4	–21.9	12.0	11.2	29.5	28.3	–0.2	15.5	8.0	3.0	–5.9
3	Exports/imports (balance of payments percent)	66.2	86.7	77.6	84.8	74.8	74.0	69.7	69.7	72.1	67.8	75.8
4	Import cover of FER (months)	2.5	5.3	4.9	8.6	8.4	6.0	6.5	6.9	8.2	8.2	8.6
5	Percentage growth rate of volume index of total exports	11.0	7.5	6.9	15.5	13.7	31.3	7.2	–6.3	3.4	15.5	22.2
6	Percentage growth rate of volume index of total imports	4.4	4.1	23.7	16.7	24.1	26.1	–0.6	9.8	14.6	9.5	–1.0
7	Percentage growth rate of volume index of imports of machinery and transport equipment	–9.3	–3.6	34.6	25.0	130.1	15.2	–13.6	–21.3	1.6	7.9	3.6
8	Short-term debt/FER (percent)	146.5	76.7	64.5	18.8	16.9	23.2	25.5	17.2	13.2	10.3	8.2
9	Debt-service payments as a percentage of current receipts	35.3	30.2	27.5	25.6	26.2	24.3	21.2	19.1	18.0	16.2	17.1
As a percentage of GDP_{MP}												
10	Exports	5.8	6.7	7.1	8.3	8.4	9.2	8.9	8.7	8.3	8.4	9.8
11	Imports	8.8	7.7	9.4	9.8	11.1	12.3	12.7	12.5	11.5	12.4	13.0
12	Trade balance	–3.2	–1.0	–2.3	–1.5	–2.8	–3.1	–3.8	–3.8	–3.2	–4.0	–3.2
13	Invisibles balance (net)	–0.1	0.6	0.6	1.1	1.8	1.6	2.7	2.4	2.2	3.0	2.6
14	Current account balance	–3.2	–0.3	–1.7	–0.4	–1.0	–1.7	–1.2	–1.4	–1.0	–1.1	–0.5
15	External debt	28.7	37.7	36.6	33.8	30.9	27.0	24.5	24.3	23.6	22.2	22.3
16	Debt-service payments	2.8	3.0	2.9	3.1	3.4	3.4	3.2	2.7	2.6	2.5	2.9

FER = foreign exchange reserves
DGCI&S = Director General of Commercial Intelligence and Statistics
GDP_{MP} = GDP at current market prices

Note: Rupee equivalents of balance of payments components are used to arrive at GDP ratios. Percentages and growth rates shown in the upper panel are based on US dollar values except rows 5 to 7, which are based on quantum indices published by DGCI&S.

Sources: Reserve Bank of India, *Handbook of Statistics on the Indian Economy,* 2001, for rows 1, 2, 2(a), and 5 to 7. Government of India, Ministry of Finance, *Economic Survey* 2001–02 and earlier years, for remaining rows.

foreign exchange reserves by the end of March 1991. The rate of inflation soared, exceeding 10 percent in 1990. Expectations of an imminent devaluation of the rupee led to the withdrawal of deposits by nonresident Indians. A specter of default on short-term loans and a downgrading of India's credit rating loomed.

Although the external payments crisis provided the immediate impetus for change, other political factors had been pushing India toward radical policy reforms. First, the country's cautious and limited deregulation of the 1980s had delivered more rapid growth. Although this growth turned out not to be sustainable, it made further liberalization of the policy regime politically acceptable. Second, the collapse of the Soviet Union not only eroded crucial external support for India's position on matters of its security and national interest but also reduced the country's access to defense supplies on concessional terms.

More important, the collapse of the world's leading centrally planned economy undermined India's faith in central planning. Several perceptive observers—some in government (see Jha 1980 and Dhar 1990), others independent academics (the earliest being Bhagwati and Desai 1970 and Bhagwati and Srinivasan 1975)—had drawn attention to the fact that state controls on economic activity and inward orientation had cost India dearly in slow growth. Their voices would have continued to be ignored had it not been for the collapse of the Soviet Union and, equally important, China's spectacular growth after the 1978 reforms that opened its planned economy to the rest of the world and allowed a greater role for markets. The fear of being left behind by China led policymakers to realize that this crisis, unlike the earlier ones, could not be handled without bringing about radical changes in the economic policy regime.

The severity of the economic crisis of 1991 provided an opportunity for the government to undertake major microeconomic policy reforms of long-standing restrictive domestic investment and international trade policies even though it did not have an absolute majority in Parliament. Until then, those who received economic rents from the discretionary control regime, predictably, resisted change. As long as there was no economic pressure to force the government's hand, those in power did not wish to take a politically risky task of changing the status quo. The 1991 crisis demonstrated clearly that the status quo was not a viable option.

As we discuss below, the reforms indeed heralded a major change in the country's development strategy. India gradually abandoned the use of quantitative controls in economic management in favor of market-based instruments. There was a decisive move away from inward orientation and toward greater integration with the global economy. Finally, the reforms signaled a shift away from an overstretched, overextended, rigid, and inefficient public sector and toward greater reliance on the private sector.

The hallmark of the pre-1991 policy regime was that there were few economic activities except for those in agriculture and the unorganized

sector that could be undertaken without government permission. The Indian economy was correctly regarded as one of the most regulated economies in the world. The post-1991 policy regime, in sharp contrast, restricted the requirement of government permission for private investment to a few explicitly specified activities. All other activities were implicitly left free from the purview of government approval.

The Immediate Response to the Crisis

Manmohan Singh, a professional economist and an experienced technocrat, assumed charge of the finance portfolio after the mid-1991 parliamentary elections and immediately began the process of macroeconomic stabilization. The gross fiscal deficit of the central government fell from 7.9 percent of GDP in 1990 to 5.6 percent by 1992, nonoil imports declined by 22 percent in 1991, and the current account deficit dropped from 3.2 percent of GDP in 1990 to 0.3 percent in 1991. The stock of short-term debt was reduced from 146.5 percent of foreign exchange reserves in March 1991 to 76.7 percent by 1992 and 64.5 percent by 1993 (table 2.2). Real GDP growth dipped from 5.6 percent in 1990 to 1.3 percent in 1991 during this period of fiscal contraction but recovered quickly to 5.1 percent in 1992 (table 2.3).

Table 2.2 shows that most of the key indicators of the external sector had also improved by 1993. The import cover of foreign exchange reserves rose to more than 8 months from 2.5 months in 1990–91. The debt-service ratio fell from 35.3 percent in 1990–91 to 25.6 percent in 1993–94. The average current account deficit in the 1990s was about 1 percent, compared with more than 2 percent in the 1980s. Private capital inflows increased as external assistance organized by the World Bank and International Monetary Fund decreased. In 1991, nearly 78 percent of $3.9 billion in total capital inflows came from external assistance. In contrast, non-debt-creating private capital inflows formed a little more than half of the total $10.2 billion in capital inflows in the period 1999–2000 (table 2.4).

The fiscal situation showed less progress. The gross fiscal deficit of the central government drifted downward in the first half but climbed upward in the second half of the 1990s, and inflation fell into the single digits. But the fiscal position of the states deteriorated progressively (figure 2.9).

Longer-Term Reforms

Stabilization measures to tackle the immediate macroeconomic crisis naturally focused on aggregate demand management alone. Once the crisis eased, the deeper problem of perverse microeconomic incentives for private economic agents that had been generated by the highly restrictive and heavily distortionary policy regime of the pre-1991 period had to be

Table 2.3 India's GDP growth, 1981–2001 (percent per year, at constant 1993–94 prices)

Sector or measure	1981–90 average	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000[a]	2000–01[b]
GDP at factor cost	5.75	5.6	1.3	5.1	5.9	7.3	7.3	7.9	4.8	6.6	6.0	4.0
Agriculture and allied	4.4	4.1	–1.5	5.8	4.1	5.0	–0.9	9.6	–2.4	7.1	0.5	–0.2
Mining and quarrying	8.6	10.7	3.7	1.2	1.4	9.3	5.9	0.5	9.8	1.3	3.5	3.3
Manufacturing, of which	7.0	6.1	–3.6	4.1	8.5	11.9	14.9	9.7	1.5	2.5	4.4	6.7
Registered	7.9	5.0	–2.3	3.1	11.5	14.4	14.7	10.8	–1.0	1.9	4.0	6.9
Electricity, gas, and water	9.0	7.4	10.4	7.0	7.4	9.4	6.8	5.4	7.9	6.4	6.7	6.2
Construction	4.8	11.8	2.1	3.5	0.6	5.5	6.2	2.1	10.2	6.1	8.2	5.3
Services, of which	6.5	5.3	4.8	5.4	7.7	7.1	10.5	7.2	9.8	8.2	9.7	4.8
Public administration and defense	7.0	1.3	2.1	4.9	2.6	1.3	6.8	4.1	14.5	10.3	12.2	4.3

a. Provisional estimate.
b. Quick estimate.

Sources: CSO (2001a, 2001b); Press Information Bureau, "Revised Estimates of Annual National Income and Quarterly Estimates of Gross Domestic Product, 2001–02," Press Note, June 28, 2002.

Table 2.4 Composition of capital account inflows to India, 1990–91 to 2000–01

Variable	1990–91	1991–92	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01
Total capital inflows (millions of US dollars)	7,056	3,910	3,876	8,895	8,502	4,089	12,006	9,844	8,565	10,242	9,023
Of which:											
(1) Non-debt-creating inflows (percent)	1.5	3.4	14.3	47.6	57.9	117.5	51.3	54.8	28.2	50.7	56.6
a. Foreign direct investment (percent)	1.4	3.3	8.1	6.6	15.8	52.4	23.7	36.2	29.0	21.2	26.0
b. Portfolio investment (percent)	0.1	0.1	6.2	41.0	42.1	65.1	27.6	18.6	–0.8	29.5	30.6
(2) Debt-creating inflows (percent)	83.3	77.5	39.9	21.3	25.0	57.7	61.7	52.4	62.7	29.5	69.3
a. External assistance (percent)	31.3	77.7	48.0	21.4	17.9	21.6	9.2	9.2	9.6	8.8	4.7
b. External commercial borrowings[a] (percent)	31.9	37.2	–9.2	6.8	12.1	31.2	23.7	40.6	50.9	3.1	44.5
c. Short-term credits (percent)	15.2	–13.1	–27.8	–8.6	4.6	1.2	7.0	–1.0	–8.7	3.7	1.2
d. NRI dollar deposits[b] (percent)	21.8	7.4	51.6	13.5	2.0	27.0	27.9	11.4	20.3	20.9	25.7
e. Rupee debt service (percent)	–16.9	–31.7	–22.7	–11.8	–11.6	–23.3	–6.1	–7.8	–9.4	–6.9	–6.8
(3) Other capital[c] (percent)	15.2	19.1	45.8	31.1	17.1	–75.2	–13.0	–7.2	9.1	19.8	–25.9
Total (1 to 3)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Stable inflows[d] (percent)	84.7	112.9	121.6	67.6	53.3	33.7	65.4	82.4	109.5	66.8	68.2

NRI = nonresident Indians

a. Refer to medium- and long-term borrowings.
b. Includes NRI deposits.
c. Includes delayed export receipts, advance payments against imports, loans to nonresidents by residents, and banking capital.
d. Stable inflows are defined to represent capital inflows excluding portfolio flows and short-term trade credits.

Source: Reserve Bank of India, *Handbook of Statistics on the Indian Economy,* 2001.

reformed as well. There were three major areas of reform: domestic industrial investment policy, foreign investment regulations, and foreign trade.

Liberalization of Industrial Investment

The industrial policy statement of July 1991 abolished the requirement of prior government approval for all private investments except those in 18 industries and allowed large industrial houses to expand, diversify, and merge without prior government approval.[7] Only 421 of the 9,227 approvals granted between 1988 and 1991 for industrial investment to domestic firms would have required approval under the post-1991 policy (World Bank 1992). This comparison does not take into account the number of the rejected applications that could have been automatically approved under the new policy. The pre-1991 restriction of foreign investment to certain priority sectors (then only 40 percent of equity) was relaxed, with automatic approval granted to new foreign investments of up to 51 percent of equity and permits for foreign technology agreements in 34 core sectors. Permission for foreign investment outside the domain of the automatic route was also granted liberally in most cases.

Indian firms in good standing have also been allowed (since February 1992), with government approval, to issue equity and convertible bonds abroad through Global Depository Receipts (GDRs) and American Depository Receipts (ADRs) respectively in European and US capital markets. Registered foreign institutional investors have also been permitted to purchase limited numbers of equity and debt securities directly on the local market since September 1992.

The effective deregulation, however, is not as marked for foreign private investment as for domestic private investment. Of the 1,637 approvals on foreign investment during the 2-year period 1988–90, as many as 888 (nearly 54 percent) would still have required government approval under the post-1991 policy (World Bank 1992). Thus, in comparison with the liberalization of industrial investment by domestic firms, foreign private investment was not liberalized to the same extent.

Trade and Exchange Rate Reforms

The pre-1991 trade and exchange rate regime protected domestic manufacturing industries through restrictive import policy. Sixty-five percent of all imports (and 90 percent of manufacturing imports) were subject to nontariff barriers (NTBs) in 1990. The import-weighted average tariff was 87 percent, and the unweighted average tariff rate was 128 percent, with

7. Several of the industries on the list of 18 restricted industries were included on it for environmental or security reasons, whereas others were put on it because investment in these would require imports and thus worsen the balance of payments.

a wide dispersion of 41 percent (table 2.5)—the highest tariff rate was 355 percent.[8] Customs revenue in 1990–91 accounted for as much as 4 percent of GDP and about 71 percent of the customs revenue accrued from tariff rates ranging between 60 and 110 percent (World Bank 1992). The net results were a bias against exports and distortions in the allocation of resources.

In 1991, the nominal exchange rate of the rupee was devalued by 22.8 percent relative to a trade-weighted basket of currencies. The resulting effective devaluation was only 16.3 percent because the Indian inflation rate was higher than that in trading partner countries. Temporary measures to deal with the balance of payments (e.g., foreign exchange licensing, import compression, export-linked imports, and a dual exchange rate system introduced in the context of the external payments crisis of 1991) were withdrawn soon thereafter. Market forces began to play a larger role in determining the exchange rate when partial convertibility of the rupee for current account transactions (i.e., convertibility under IMF Article VIII) was introduced in 1993.

The deliberate depreciation of the rupee undertaken to correct prereform overvaluation got eroded in the second half of the 1990s despite some adjustment during the East Asian crisis. Extension by Seddon and Srinivasan (2001) of Srinivasan's (1998b) work on the relationship between exports and the exchange rates finds that the negative elasticity of exports with respect to exchange rate movements did not change significantly from the 1980s to the 1990s. We can thus attribute at least part of the slowdown in the US dollar value of exports in the last 4 years of the 1990s to REER appreciation.

All export subsidies and most of the QRs on intermediate and capital goods imports were withdrawn in 1991. The long list of imports subject to QRs and other restrictions was replaced in 1991 by a considerably narrower (though still long) list of mostly consumer goods. The office of the chief controller of imports and exports was superseded by that of the director general of foreign trade, whose principal mandate is to *promote* exports rather than *control* both imports and exports. The ambit of periodical export and import policy was extended from 3 to 5 years.

The level and dispersion of tariffs have been reduced in phases. In the prereform period (about the end of 1980s), QRs protected goods amount-

8. These figures are from A. Panagariya, "Doha and India: Retrospect and Prospect," *Economic and Political Weekly* 37, no. 4: 279–84 (January 26–February 1, 2002). There is no single satisfactory way to measure protection for domestic import-competing industries from a variety of simultaneous import restrictions. Thus, NTBs, when binding, provide unlimited protection without reference to costs. An import-weighted average tariff rate tends to understate the degree of protection, especially when prohibitively high tariff rates are common. An unweighted average partially corrects for this bias but does not take account of differing impacts of nonuniform tariff rates on imports. The standard deviation of tariff rates gives an idea of the degree of distortions in relative prices resulting from nonuniform tariff rates.

Table 2.5 India's tariff structure, 1990–91 to 1999–2000 (percent; standard deviation in parentheses)

Sector	1990–91[a]	1992–93[a]	1993–94	1994–95	1995–96	1996–97	1997–98[b]	1998–99	1999–2000
Mean									
Agricultural products	106	59	39	31	25.1	25.6	24.6	29.6	29.2
	(48)	(49)	(39)	(30)	(24.9)	(21.1)	(17.7)	(18.8)	(16.6)
Mining	n.a.	n.a.	71	48	30.0	24.8	24.4	29.4	26.6
			(24)	(25)	(15.6)	(11.9)	(11.9)	(12.3)	(12.1)
Consumer goods	142	92	76	59	45.4	45.4	39.8	45.9	42.9
	(33)	(42)	(36)	(33)	(26.0)	(27.1)	(20.5)	(20.7)	(18.9)
Intermediate goods	133	104	77	59	43.7	38.8	34.7	40.7	41.2
	(42)	(25)	(22)	(17)	(13.5)	(13.2)	(10.3)	(11.1)	(10.5)
Capital goods	109	86	58	42	33.1	33.8	29.7	35.3	35.3
	(32)	(26)	(24)	(20)	(12.4)	(12.2)	(9.4)	(10.2)	(8.2)
Import-weighted average									
Whole economy	87	64	47	33	27.2	24.6	25.4	29.7	30.2
Agricultural products	70	30	25	17	14.9	14.7	14.0	16.1	17.7
Mining	n.a.	n.a.	33	31	27.6	22.0	21.9	19.5	17.7
Consumer goods	164	144	33	48	43.1	39.0	33.8	39.3	32.1
Intermediate goods	117	55	40	31	25.0	21.9	26.1	31.5	31.9
Capital goods	97	76	50	38	28.7	28.8	24.7	30.1	32.2

n.a. = not available

a. In 1990–91 and 1992–93, mining is included in intermediates.
b. Figures for 1997–98 include the 3 percent special duty imposed in September 1997.

Note: The total customs duty is calculated as the sum of the basic customs duty, a surcharge of 10 percent on the basic customs duty, and the special additional duty. The special additional duty is levied on the value of imports as well as the basic duty value, the surcharge value, and the additional duty value.

Source: World Bank (2000a).

ing to as much as 93 percent of total tradable GDP and 90 percent of manufacturing (Pursell and Sharma 1996). Pursell and Sharma's study of 13 broad product categories in 26 developing countries found that India's actually applied rate ranked highest or second highest for all of the product categories as of 1993. India's average tariff rate in absolute terms was more than twice as high as the average of actually applied rates for all product categories. The post-Uruguay Round bound rate negotiated by India was invariably higher and for some products much higher than the average of the bound rates in the study after Uruguay. The average applied tariff rate of 51.6 percent for India for all of the product categories combined was not only the highest but also nearly three times as high as the average level of 19.2 percent for 28 developing countries.

The share of QR-protected goods in total tradable GDP had come down to 66 percent by May 1995, whereas that for manufacturing GDP dropped to 36 percent (most of it accounted for by QRs on consumer goods) by May 1996. The peak tariff rate was reduced to 45 percent in 1997 from 355 percent in 1990 and came down further to 35 percent in the budget for 2002–03. The finance minister announced in his budget speech on February 28, 2002, that by 2004–05 only two basic rates of customs duties—10 percent on raw materials parts and components and 20 percent on final products—would be levied (GOI-MoF 2002b).

It is interesting that China's import-weighted tariff after its accession to the WTO in 2002 was 6.8 percent on its *entire merchandise trade* (Ianchovichina and Martin 2002, table 3). It is much lower than India's current import-weighted tariff, as well as its projected rates. While standard deviation of tariff rates showed a steady decline, unweighted as well as import-weighted average tariff rates decreased during the 1990–96 period but began to rise again after 1996 (table 2.5, upper panel). The reduction in the standard deviation during the period 1990–99, indicative of a corresponding reduction in the degree of distortions in resource allocation, was greatest for intermediate and capital goods (from 42 to 10.5 and 32 to 8.2, respectively) and least for consumer goods (from 33 to 18.9). There has also been a decline in the number of exemptions (or use-based concessions) on tariff rates. The list of restricted or banned exports has been shortened significantly, and taxes on some mineral and agricultural exports have been abolished. Agriculture alone remained highly protected after the initial round of reforms; the mean 1995 share of 84 percent was only marginally lower than its prereform level of 94 percent. Quotas and stipulations of minimum export prices for agricultural exports persist.[9]

9. A Cabinet decision to remove quotas on wheat, wheat products, coarse grain, butter, and non-basmati rice was announced on February 5, 2002 (*Times of India*, New Delhi, February 6, 2002).

The latest Export-Import Policy Statement for 2002–07, announced on March 31, 2002, proposes to remove all QRs on exports except for a few sensitive items.

There were also several changes in NTBs on imports. The monopoly of government agencies on most canalized imports was abolished as of April 2001. Domestic content requirements on foreign investors have been removed. The official government preference for domestic producers in procurement has been dropped. Table 2.6 documents coverage on NTBs in the late 1990s.

The available evidence, albeit scanty, on international comparisons of tariffs is presented in table 2.7. The unweighted average and maximum tariffs can be treated as crude indicators of openness across countries. A comparison across 13 developing countries for 1994 by Chopra et al. (1995) showed that India had the second highest level of the maximum tariff (65 percent), next only to Egypt, and the highest level of average tariff (55 percent). The average tariff level, in contrast, ranged between 10 and 15 percent for Argentina, Brazil, Chile, Malaysia, South Korea, and Thailand.

World Bank (2000a, annex table 6.3) provides the sectoral shares of imports affected by NTBs.[10] NTBs covered 95 percent of the imports in sectors covered in the study in 1988, compared with 24 percent in 1999.[11] NTB coverage varied across sectors—from 56 percent in consumer nondurables to 27 percent for consumer durables, 16 percent for basic goods, and 14 percent for capital goods in 1999.

There has been some reversal of this liberalizing trend in recent years, however, particularly in the case of intermediate goods. The tariff on these increased from 21.9 percent in 1996 to 31.9 percent in 1999 (table 2.5, lower panel). A more recent international comparison at the economywide level for 2000 or thereabouts shows that India has the highest weighted average tariff rate of 28.5 percent with nearly all (93.1 percent) tariff lines attracting tariffs exceeding 15 percent (World Bank, *Global Development Finance 2002: Analysis and Summary Tables*, table 6.6). India also reserved itself some room to raise applied tariffs by binding tariffs at much higher rates than those being applied as part of the Uruguay Round agreement. Mostly, peak tariff rates replaced the removal of QRs in two installments in April 2000 and April 2001 mostly on consumer goods. Six hundred of

10. This is a less satisfactory indicator than the QR-protected shares of tradable GDP, because imports are directly affected by the QRs as well as by tariff rates.

11. Annex table 6.3 in World Bank (2000a) presents two estimates, which vary because of the method of dealing with different types of NTBs. For each method, the weighted as well as the simple (unweighted) average is presented. Because the direction of change does not differ, we present only one set, namely, the weighted average where all NTBs have been assigned an equal weight of 100 percent.

Table 2.6 Types of nontariff barriers (NTBs) imposed on India's imports, 1996–2001
(number of tariff lines, 10-digit level)

	As of April 1, 1996		As of April 1, 1997		As of April 1, 1998		As of April 1, 1999		As of April 1, 2000		As of April 1, 2001	
Type of NTB	Number of lines	Percentage share	Number of lines	Percentage share	Number of lines	Percentage share	Number of lines	Percentage share	Number of lines	Percentage share	Number of lines	Percentage share
Prohibited	59	0.6	59	0.6	59	0.6	59	0.6	59	0.6	59	0.5
Restricted	2,984	29.6	2,322	22.8	2,314	22.7	1,183	11.5	968	9.5	479	4.7
Canalized	127	1.2	129	1.3	129	1.3	37	0.4	34	0.3	n.a.	n.a.
SIL	765	7.6	1,043	10.2	919	9.0	886	8.7	226	2.2	n.a.	n.a.
Free	6,161	61.0	6,649	65.1	6,781	66.4	8,055	78.8	8,854	87.3	9,611[a]	94.7
Total	10,096	100.0	10,202	100.0	10,202	100.0	10,220	100.0	10,141	100.0	10,149	100.0

n.a. = not available
SIL = Sterlite Industries (India) Limited

a. Includes 29 tariff lines shifted to state trading.

Note: Tariff lines are per the Harmonized System of India Trade Classification for exports and imports.

Source: Ministry of Finance, Government of India, *Economic Survey,* 2002, box 6.3, p. 142.

Table 2.7 International comparison of tariff barriers

Country	Year	Simple mean tariff (percent)	Standard deviation	Import-weighted mean tariff (percent)	Percentage share of tariff lines with tariffs above 15 percent
India	1990	79.0	43.6	49.6	97.0
	1999	32.5	12.3	28.5	93.1
Bangladesh	1989	106.6	79.3	88.4	98.2
	2000	21.3	13.6	21.0	51.8
China	1992	41.0	30.6	33.2	77.6
	2000	16.3	10.7	14.7	4.2
Indonesia	1989	21.9	19.7	13.0	50.3
	2000	8.4	10.8	5.2	11.2
South Korea	1988	14.8	5.3	10.5	12.5
	1999	8.6	5.9	5.9	0.7
Malaysia	1988	17.0	15.1	9.4	46.7
	1997	9.3	33.3	6.0	24.7
Nepal	1993	21.9	17.8	15.9	58.9
	2000	17.9	20.9	17.7	18.7
Pakistan	1995	50.9	21.5	46.4	91.4
	1998	46.6	21.2	41.7	86.3
The Philippines	1989	28.0	14.2	22.4	77.2
	2000	7.6	7.7	3.8	8.8
Sri Lanka	1990	28.3	24.5	26.9	51.7
	2000	9.9	9.3	7.4	22.0
Thailand	1989	38.5	19.6	33.0	72.8

Source: World Bank, *Global Development Finance 2002: Analysis and Summary Tables*, table 6.

nearly 800 of the 1,556 tariff lines (mostly consumer goods) under various restrictive lists of imports in April 1999 were freed by April 2000 and the remaining by April 1, 2001 (table 2.6).[12]

Despite wide-ranging trade liberalization during the past decade in comparison with the pre-1991 situation, Indian tariff rates continue to be much higher than those in the rapidly growing countries of East and Southeast Asia.

12. QRs have been replaced by often peak tariff rates. According to a calculation by the Indian Planning Commission, the weighted average duty on consumer goods increased from 37.4 percent in 1999–2000 to 56.2 percent in 2001–02 and 67.1 percent in 2001–02, that on agricultural products from 24.4 percent (1999–2000) to 58.7 percent (2000–01) and 57.7 percent (2001–02). See GOI-PC (2001b).

By the way, the term "peak tariff rate" as used in Indian official documents is peculiar because the same documents often cite individual tariffs that exceed the peak!

Outcomes of Reforms

India has had some limited success in attracting foreign direct investment (FDI) since the reforms of the 1990s. FDI (based on Indian definition and data source) has increased from an annual average of only about $200 million between 1985 and 1991 to a peak of $3.6 billion in 1997 and has slowed down since then to under $2.5 billion (table 2.8). Recent data suggest that FDI inflow increased by 66 percent to $4.06 billion in 2001–02 compared with $2.46 billion in 2000–01 (*The Hindu*, National Section, July 24, 2002; http://www.hinduonnet.com/thehindu/2002/07/24/stories/200207240434110.htm).

FDI flows remain highly regulated. Seven-tenths came from the nontransparent case-by-case discretionary approval route of the Foreign Investment Promotion Board and very little through the automatic route open mostly for infrastructure and other industries deemed essential by the policymakers. In addition, the relatively more stable component of private foreign investment accounted for only 43 percent of *total* nondebt private flows (comprising FDI and portfolio flows), which amounted to $38.9 billion during the 9-year period 1992–2000.

Data from Indian and international sources do not exactly match in magnitude because of definitional differences, though broad trends are similar. They are relevant for placing the Indian performance in an international perspective. This is attempted in tables 2.9 to 2.13 for different types of long-term capital flows.

Total long-term resource flows to developing countries more than doubled after 1992 and peaked at $341 billion in 1997 before declining in the aftermath of the Asian currency crisis (table 2.9). FDI flows to developing countries (table 2.10), after showing a dramatic rise from $47 billion in 1992 to $172.5 billion in 1997, slowed down considerably during the next 3 years. Portfolio investment flows to developing countries (table 2.11) have been fluctuating from year to year, but in magnitude have been much less important than FDI. Official debt flows to developing countries (table 2.12), somewhat higher in magnitude than portfolio flows, varied between $30 and $56 billion without showing any trend. Finally, private debt flows to developing countries (table 2.13), which have been replacing official debt flows in financing infrastructure investment, more than doubled between 1992 and 1996 before slowing down to a trickle in 1999 and 2000.

Indian policymakers have sought these long-term external resource flows to complement domestic resources. How did India perform in international comparisons? A large share (from 24 to 34 percent) of FDI—the dominant and relatively most stable component in long-term resource flows to developing countries—went to China in the 1990s. The peak Indian share was just 2 percent in 1995 and again in 1997. India's share of the more fluctuating private portfolio investment was, interestingly, higher than its share of FDI, but even in this component, barring 4 out of

Table 2.8 Foreign investment inflows to India by various categories (millions of US dollars)

Type of investment	1992–93	1993–94	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01[a]	Cumulative, 1992–93 to 2000–01
A. Direct investment	315	586	1,314	2,144	2,821	3,557	2,462	2,155	2,365	16,894
RBI automatic route	42	89	171	169	135	202	179	171	454	15,354
SIA/FIPB route	222	280	701	1,249	1,922	2,754	1,821	1,410	1,456	11,815
NRIs (40 and 100 percent)	51	217	442	715	639	241	62	84	67	
Acquisition of shares[b]	n.a.	n.a.	n.a.	11	125	360	400	490	362	
B. Portfolio investment	244	3,567	3,824	2,748	3,312	1,828	–61	3,026	2,760	21,248
FIIs[c]	1	1,665	1,503	2,009	1,926	979	–390	2,135	1,847	
GDRs/ADRs[d]	240	1,520	2,082	683	1,366	645	270	768	831	
Offshore funds and others	3	382	239	56	20	204	59	123	82	1,072
Total A + B	559	4,153	5,138	4,892	6,133	5,385	2,401	5,181	5,125	38,142
Share of SIA/FIPB in FDI	70.5	47.8	53.3	58.3	68.1	77.4	74.0	65.4	61.5	69.9
Share of FDI in total	56.4	14.1	25.6	43.8	46.0	66.1	102.5	41.6	46.1	44.3

n.a. = not available
FDI = foreign direct investment
FIIs = foreign institutional investors
GDRs/ADRs = Global Depository Receipts and American Depository Receipts
NRIs = nonresident Indians
RBI = Reserve Bank of India
SIA = Secretariat for Industrial Approval
FIPB = Foreign Investment Promotion Board

a. Preliminary estimate.
b. Acquisition of shares in foreign direct investment relates to the acquisition of shares of Indian companies by nonresidents under section 29 of the Foreign Exchange Regulation Act and section 5 of the Foreign Exchange Management Act of 1999.
c. FII portfolio investments represent fresh inflow/outflow of funds by FIIs.
d. GDRs/ADRs represent GDR amounts raised abroad by Indian corporates.

Source: Ministry of Finance, Government of India, *Economic Survey,* 2001–02, and earlier years.

Table 2.9 Total long-term resource flows to selected developing countries, 1990–2000 (billions of US dollars)

Country or group	1990	1992	1993	1994	1995	1996	1997	1998	1999	2000[a]
All developing countries	99.3	153.7	220.9	222.4	260.2	306.6	341.4	336.7	271.8	261.1
India	4.719	5.204	7.264	8.722	4.437	7.450	6.925	7.621	3.355	9.928
China	10.082	23.969	44.434	47.847	51.902	54.745	65.407	45.299	42.550	60.525
Indonesia	5.901	7.945	3.622	9.594	12.901	15.560	11.588	–0.420	–4.685	–9.156
Thailand	4.672	4.175	8.226	4.888	10.638	14.228	9.777	9.381	5.399	–0.525
Malaysia	1.184	6.093	10.923	8.680	10.542	12.031	9.187	5.695	3.618	3.411
South Korea	1.351	7.753	8.603	12.244	13.045	19.359	22.383	13.199	9.361	13.875
Percentage share of India in all developing countries	4.75	3.39	3.29	3.92	1.70	2.42	2.03	2.26	1.23	3.80
Percentage share of China in all developing countries	10.15	15.42	20.11	21.51	19.95	17.86	19.16	13.45	15.65	23.18

a. Preliminary estimate.

Sources: World Bank (2000b); World Bank, *Global Development Finance 2002: Analysis and Summary Tables.*

Table 2.10 Foreign direct investment flows to selected developing countries, 1990–2000 (billions of US dollars)

Country or group	1990	1992	1993	1994	1995	1996	1997	1998	1999	2000[a]
All developing countries	24.3	47.1	66.6	90.0	106.8	130.8	172.5	178.3	184.4	166.7
India	0.162	0.277	0.550	0.973	2.144	2.426	3.577	2.635	2.169	2.315
China	3.487	11.156	27.515	33.787	35.849	40.180	44.236	43.751	38.753	38.399
Indonesia	1.093	1.777	2.004	2.109	4.346	6.194	4.677	–0.356	–2.745	–4.550
Thailand	2.444	2.113	1.804	1.366	2.068	2.336	3.895	7.315	6.213	3.366
Malaysia	2.333	5.183	5.006	4.342	4.178	5.078	5.137	2.163	1.533	1.660
South Korea	0.788	0.727	0.588	0.810	1.776	2.326	2.844	5.412	9.333	9.283
Percentage share of India in all developing countries	0.67	0.59	0.83	1.08	2.01	1.85	2.07	1.48	1.18	1.39
Percentage share of China in all developing countries	14.35	23.68	41.31	34.72	33.57	30.72	25.64	24.54	21.02	23.03

a. Preliminary estimate.

Sources: World Bank (2000b); World Bank, *Global Development Finance 2002: Analysis and Summary Tables.*

Table 2.11 Portfolio investment flows to selected developing countries, 1990–2000 (billions of US dollars)

Country or group	1990	1992	1993	1994	1995	1996	1997	1998	1999	2000[a]
All developing countries	3.70	14.10	51.00	35.20	36.10	48.90	30.10	15.60	34.50	50.90
India	0.105	0.241	1.840	4.729	1.517	4.938	2.116	0.342	1.302	2.117
China	0	1.194	3.818	3.915	2.807	3.466	8.457	1.273	3.732	22.198
Indonesia	0.312	0.119	2.452	3.672	4.873	3.099	0.298	0.250	1.273	0.379
Thailand	0.449	0.004	3.117	–0.538	2.154	1.551	–0.308	2.341	2.527	10.044
Malaysia	0.293	0.385	3.700	1.320	2.299	4.353	–0.489	0.592	0.522	0.542
South Korea	0.518	3.045	6.029	2.525	3.559	3.700	1.257	4.096	12.426	7.784
Percentage share of India in all developing countries	2.84	1.71	3.60	13.43	4.20	8.99	7.03	2.19	3.77	4.16
Percentage share of China in all developing countries	0	8.47	7.49	11.12	0.80	7.09	28.10	8.16	10.82	43.61

a. Preliminary estimate.

Sources: World Bank (2000b); World Bank, *Global Development Finance 2002: Analysis and Summary Tables.*

Table 2.12 Official debt flows to selected developing countries, 1990–2000 (billions of US dollars)

Country or group	1990	1992	1993	1994	1995	1996	1997	1998	1999	2000[a]
All developing countries	55.90	54.30	53.40	46.00	54.10	30.30	40.70	53.40	47.40	35.30
India	4.044	4.158	3.823	1.664	–0.811	–0.508	–0.911	3.946	1.517	4.979
China	6.346	11.095	12.500	9.808	12.371	10.725	11.138	2.497	2.038	1.769
Indonesia	0.422	2.647	1.198	2.081	0.951	–0.595	0.594	3.243	0.605	–0.297
Thailand	–1.115	0.222	0.666	0.248	0.871	1.284	6.929	3.926	1.627	–0.038
Malaysia	–1.899	–1.095	0.444	0.286	2.450	0.264	1.699	0.489	0.686	0.869
South Korea	0.601	2.071	–0.266	1.562	2.191	3.300	11.989	9.760	–7.976	–10.983
Percentage share of India in all developing countries	7.23	7.66	7.16	3.62	–1.50	–1.68	–2.24	7.39	3.20	14.10
Percentage share of China in all developing countries	11.35	20.43	23.41	21.32	22.95	34.60	27.37	4.68	4.30	–0.84

a. Preliminary estimate.

Sources: World Bank (2000b); World Bank, *Global Development Finance 2002: Analysis and Summary Tables.*

Table 2.13 Private debt flows to selected developing countries, 1990–2000 (billions of US dollars)

Country or group	1990	1992	1993	1994	1995	1996	1997	1998	1999	2000[a]
All developing countries	15.700	38.200	50.000	51.200	63.300	96.500	98.100	89.400	5.600	8.200
India	–0.104	–0.053	0.565	0.744	1.023	0.545	1.594	0.208	–0.608	0.051
China	0	0.198	0.332	0	0.544	0.129	1.311	–2.558	–2.820	–2.144
Indonesia	3.791	3.105	–2.252	1.515	2.481	6.067	5.821	–3.826	–4.238	–5.050
Thailand	2.702	1.675	2.538	3.706	5.446	8.959	–0.827	–4.282	–5.034	–4.935
Malaysia	0.415	1.570	1.714	2.697	1.604	2.329	2.828	2.429	0.845	0.331
South Korea	–0.561	1.907	2.248	7.347	5.514	10.032	6.921	–6.073	–4.425	7.790
Percentage share of India in all developing countries	–0.66	–0.14	1.13	1.45	1.63	0.55	1.62	0.23	–10.86	0.62
Percentage share of China in all developing countries	0.0	0.52	0.66	0.0	0.86	0.13	1.34	–2.86	–50.36	–26.15

a. Preliminary estimate.

Sources: World Bank (2000b); World Bank, *Global Development Finance 2002: Analysis and Summary Tables.*

9 years covered in table 2.11, China's share has been higher. The same holds true for official flows. India fared better only in private debt flows. Not just China, however, but also even smaller Southeast Asian economies like Indonesia, Malaysia, and Thailand often managed to attract more in all the categories of long-term resource flows than India until they were hit by the recent East Asian currency crisis. In fact, even since the crisis, Thailand has continued to attract more FDI than India.

India's limited success in long-term capital inflows, particularly FDI, despite its declared intentions in this regard, might be attributed to three factors. First, heavy regulations have not completely gone after liberalization. Second, there is resistance to FDI by domestic industry in competing areas. Third, inadequacies in physical and legal infrastructure limit India's absorptive capacity, and hence its attractiveness to private foreign investors.

This assessment of India's limited absorptive capacity is confirmed by the Reserve Bank of India (RBI 2001, para. 6.52). Between 1992 and 2000, India received cumulative total net capital inflows of $79 billion. The cumulative current account deficit (averaging about 1 percent of GDP) during the same period works out to $36.5 billion, so that $42.5 billion was added to the foreign exchange reserves. Although some additions to reserves were indeed prudent, it is arguable that the still continuing additions—total reserves were close to $60 billion in mid-July 2002 (*The Hindu*, Business Section, July 28, 2002; http://www.hinduonnet.com/thehindu/2002/07/28/stories/2002072801351500.htm)—are excessive and reflects the poor domestic investment climate. Had the climate been more buoyant, more machinery, equipment, raw material, and components would have been imported, leading to a larger current account deficit during this period.

India's poor investment climate has resulted in lower corporate investment and lower overall growth since the period 1996–97. Leaving China aside, much smaller countries than India like Indonesia, Malaysia, and Thailand have absorbed larger magnitudes of net capital inflows in most years to step up investment and maintain higher growth rate. Even though the tempo of their growth suffered in the aftermath of the currency crisis, their living standards remained much higher than India's and they recovered quickly to resume their growth path. Their experience highlights the imperative of relaxing domestic constraints on absorptive capacity (to be discussed in chapter 5).

Effects on the Level and Composition of Trade

The aggregate value of exports (in US dollar terms) grew at an average rate of 19.7 percent annually from 1993 to 1995 before falling dramatically to average 1.6 percent a year during the period 1996–99. There has been some recovery since then, with growth rates being 10.8 and 21 percent respectively in the subsequent 2 years. Non-POL (mostly production

related) imports followed a similar pattern: growing at 23 percent in 1993–96 and falling to 7.8 percent in 1999–2000 but without recovery in the subsequent two years (GOI-MoF *Economic Survey* 2002a, table 2.1). Postliberalization growth of exports and imports encouraged competition and innovation in addition to shifting domestic resources toward higher-productivity uses.

Tables 2.14 and 2.15 present more disaggregated customs data on the commodity composition of merchandise imports and exports. Nonbulk imports[13] increased after reform as the share of canalized bulk imports[14] decreased from 40.5 percent in 1988–90 to 34.6 percent in 1998–2000. The reform-driven increase in domestic investment can be seen in the increase of the share of capital goods from 26.2 percent in 1988–90 to 27.3 percent in 1994–96. The share of capital goods in imports decreased, however, to 21.3 percent in the latest triennium for which data are available as a result of a slowdown in investment. The effect of remaining restrictions can be seen as well; there was very little change in the imports of machine tools that competed with domestic production. These imports remained under QRs even after liberalization. Trade liberalization appears to have encouraged exports in new areas, and export-related imports declined after the reform even as overall exports increased.

The "others" category of imports rose consistently throughout the 1990s. The effects of the reforms can again be seen in the changing composition of imports across subcategories. The share of coal, coke, and briquettes in total imports nearly doubled. This share, though small, is noteworthy; the increased share of imports reflected the steep reduction in import duties, which introduced external competition for the state monopoly Coal India Limited. Also, users (especially in coastal states) found that, compared with coke sold by Coal India, imported coke was cheaper and of a better quality.

Manufactured products accounted for a major share of the postreform rise in aggregate exports. Within this group, the share of leather, leather manufactures, and handicrafts declined steeply while the share of ready-made garments in exports remained stable. Exports of chemical and allied products (including pharmaceuticals), textile yarn, fabrics, and engineering

13. Following the pre-1991 policy, nonbulk imports are classified into three broad categories: capital goods; input items that are mainly export related; and a residual category, "others." These were controlled through various lists, such as limited permissible, automatic permissible, and open general license.

14. Bulk imports are classified into three broad categories according to the pre-1991 policy: petroleum, oil, and lubricants (POL), which constitute almost entirely importable universal energy inputs and are hence indispensable for growth; bulk consumption goods, which consist of agricultural commodities such as cereals, pulses, edible oils, and sugar that were imported to meet shortages arising out of domestic crop failures; and other bulk items, which are mostly noncompeting raw materials and intermediates such as fertilizer. These were deemed essential and hence canalized through the state-owned procurement agencies.

Table 2.14 Average imports to India of selected principal commodities, prereform and postreform triennia
(millions of US dollars; numbers in parentheses are percentages of the total, I + II)

Series number (1)	Commodity (2)	1988–90[a] (3)	1994–96[b] (4)	1998–2000[c] (5)	Ratio of 1994–96 to 1988–90 (6)	Ratio of 1998–2000 to 1988–90 (7)
I	**Bulk imports**	7,814.9 (40.5)	11,582.4 (39.2)	15,097.5 (34.6)	3,767.5 (36.7)	7,282.5 (29.8)
I.1	Petroleum, oil, and lubricants	3,298.2 (17.1)	6,402.4 (21.7)	8,348.2 (19.1)	3,104.2 (30.3)	5,050.0 (20.7)
I.2	Bulk consumption goods	1,000.2 (5.2)	813.5 (2.8)	2,100.7 (4.8)	–186.7 (–1.82)	1,100.5 (4.5)
I.3	Other bulk items, of which:	3,516.5 (18.2)	4,366.5 (14.8)	4,648.5 (10.6)	850.0 (8.3)	1,132.0 (4.6)
I.3.1	Fertilizers: crude and manufactured, of which:	706.5 (3.7)	1,187.0 (4.0)	1,193.1 (2.7)	480.5 (4.7)	486.6 (2.0)
I.3.1.1	Manufactured fertilizer	408.7 (2.1)	925.7 (3.1)	911.3 (2.1)	517.0 (5.0)	502.4 (2.1)
I.3.2	Iron and steel	1,235.1 (6.4)	1,134.9 (3.8)	1,164.5 (2.7)	–100.2 (–1.0)	–70.6 (–0.3)
II	**Nonbulk imports,** of which:	11,475.8 (59.5)	17,962.9 (60.8)	28,977.6 (66.3)	6,487.1 (63.3)	17,501.8 (71.7)
II.1	Capital goods, of which:	5,051.6 (26.2)	8,070.4 (27.3)	9,310.3 (21.3)	3,018.8 (29.4)	4,258.7 (17.5)
II.1.1	Machine tools	176.3 (0.9)	246.7 (0.8)	343.0 (0.8)	70.4 (0.7)	166.7 (0.7)
II.1.2	Machinery, except electrical and electronic	1,918.6 (9.9)	2,844.7 (9.6)	3,142.2 (7.2)	926.1 (9.0)	1,223.6 (5.0)

(table continues on next page)

Table 2.14 Average imports to India of selected principal commodities, prereform and postreform triennia
(millions of US dollars; numbers in parentheses are percentages of the total, I + II) *(continued)*

Series number (1)	Commodity (2)	1988–90[a] (3)	1994–96[b] (4)	1998–2000[c] (5)	Ratio of 1994–96 to 1988–90 (6)	Ratio of 1998–2000 to 1988–90 (7)
II.1.3	Electronic goods	n.a.	1,297.6 (4.4)	2,381.4 (5.5)	n.a.	n.a.
II.1.4	Project goods	1,154.1 (6.0)	1,955.9 (6.6)	1,770.6 (4.1)	801.8 (7.1)	616.5 (2.5)
II.2	Mainly export-related items of which:	3,424.9 (17.8)	4,653.8 (15.8)	7,660.0 (17.5)	1,228.9 (12.0)	4,235.1 (17.4)
II.2.1	Pearls and precious and semiprecious stones	2,101.4 (10.9)	2,123.4 (7.2)	4,159.5 (9.5)	22.0 (0.2)	2,058.1 (8.4)
II.2.2	Organic and inorganic chemicals	1,098.7 (5.7)	2,024.4 (6.9)	2,839.6 (6.5)	925.7 (9.0)	1,740.9 (7.1)
II.3	Others, of which:	2,999.3 (15.5)	5,238.7 (17.7)	11,627.3 (26.6)	2,239.4 (21.8)	8,628.0 (35.4)
II.3.1	Coal, coke, briquettes, etc.	265.5 (1.4)	700.1 (2.4)	1,054.3 (2.4)	434.6 (4.2)	788.8 (3.2)
II.3.2	Miscellaneous “others”	1,036.9 (5.4)	2,747.3 (8.4)	8,222.7 (18.8)	1710.4 (16.7)	7,185.8 (29.4)
Total of I + II		19,290.7 (100.0)	29,545.3 (100.0)	43,695.1 (100.0)	10,254.6 (100.0)	24,404.4 (100.0)

n.a. = not available

a. Fiscal years 1987–88 to 1989–90: prereform triennium.
b. Fiscal years 1993–94 to 1995–96: triennium of rapid growth.
c. Fiscal years 1997–98 to 1999–2000: most recent available triennium.

Note: Midpoint-to-midpoint compound annual growth rates of total exports: 1988–90 to 1994–96, 11.12 percent per year over 6 years; 1988–90 to 1998–2000, 9.51 percent per year over 10 years.

Source: Reserve Bank of India, *Handbook of Statistics on the Indian Economy,* 2000.

Table 2.15 Average exports from India of selected principal commodities, prereform and postreform triennia
(millions of US dollars; numbers in parentheses are percentages of the total, I + II + III)

Series number (1)	Commodity (2)	1988–90[a] (3)	1994–96[b] (4)	1998–2000[c] (5)	Ratio of 1994–96 to 1988–90 (6)	Ratio of 1998–2000 to 1988–90 (7)
I	**Primary products**	3,428.7 (24.1)	5,795.7 (21.6)	7,006.6 (19.9)	2,367.0 (18.8)	3,577.9 (17.0)
I.1	Agriculture and allied products	2,610.2 (18.4)	4,778.5 (17.8)	6,052.8 (17.2)	2,168.3 (17.3)	3,442.6 (16.4)
I.2	Ores and minerals	818.5 (5.8)	1,017.2 (3.8)	953.8 (2.7)	198.7 (1.6)	135.3 (0.6)
II	**Manufactured products,** of which:	10,092.3 (71.0)	20,187.3 (75.4)	27,270.7 (77.3)	10,095.0 (80.3)	1,7178.4 (81.6)
II.1	Leather and manufactures	1,062.3 (7.5)	1,554.1 (5.8)	1,618.6 (4.6)	491.8 (3.9)	556.3 (2.6)
II.2	Chemicals and allied products, of which:	857.2 (6.0)	1,930.8 (7.2)	3,099.7 (8.8)	1,073.6 (8.5)	2,242.5 (10.7)
II.2.1	Drugs, pharmaceuticals, and fine chemicals	363.0 (0.3)	819.9 (3.1)	1,491.9 (4.2)	456.9 (3.6)	1,128.9 (5.4)
II.3	Engineering goods	1,583.8 (11.1)	3,645.7 (13.6)	4,920.8 (13.9)	2,061.9 (16.4)	3,337.0 (15.9)
II.4	Ready-made garments	1,597.6 (11.2)	3,181.2 (11.9)	4,347.7 (12.3)	1,583.6 (12.6)	2,650.1 (12.6)

(table continues on next page)

Table 2.15 Average exports from India of selected principal commodities, prereform and postreform triennia
(millions of US dollars; numbers in parentheses are percentages of the total, I + II + III) *(continued)*

Series number (1)	Commodity (2)	1988–90[a] (3)	1994–96[b] (4)	1998–2000[c] (5)	Ratio of 1994–96 to 1988–90 (6)	Ratio of 1998–2000 to 1988–90 (7)
II.5	Textile yarn, fabrics, made-ups, etc., of which:	1,123.7 (7.9)	2,902.6 (10.8)	4,109.2 (11.6)	1,778.9 (14.2)	2,985.5 (14.2)
II.5.1	Cotton yarn, fabrics, made-ups, etc.	861.8 (6.1)	2,115.8 (7.9)	3,058.4 (8.7)	1,254.0 (10.0)	2,196.6 (10.4)
II.6	Handicrafts, of which:	3,223.8 (22.7)	5,408.5 (20.2)	7,356.3 (20.8)	2,184.7 (17.4)	4,132.5 (19.6)
II.6.1	Gems and jewelry	2,742.8 (19.3)	4,590.4 (17.1)	6,303.6 (17.9)	1,847.6 (14.7)	3,560.8 (16.9)
III	**Petroleum products and others**	702.9 (4.9)	804.9 (3.0)	997.3 (2.8)	102.0 (0.8)	294.4 (1.4)
Total of I + II + III		14,223.9 (100.0)	26,787.9 (100.0)	35,274.6 (100.0)	12,564.0 (100.0)	21,050.7 (100.0)

a. Fiscal years 1987–88 to 1989–90: prereform triennium.
b. Fiscal years 1993–94 to 1995–96: triennium of rapid growth.
c. Fiscal years 1997–98 to 1999–2000: most recent available triennium.

Note: Midpoint-to-midpoint compound annual growth rates of total exports: 1988–90 to 1994–96, 11.12 percent per year over 6 years; 1988–90 to 1998–2000, 9.51 percent per year over 10 years.

Source: Reserve Bank of India, *Handbook of Statistics on the Indian Economy,* 2000.

goods increased from 25 percent on the average in 1988–90 to 41 percent in incremental exports between 1988–90 and 1998–2000 as import liberalization and exchange rate depreciation increased the profitability of selling on international markets.

Changes in Trading Patterns

India's trading patterns appear to have shifted as well in the postreform period (table 2.16). Exports of textiles—ready-made garments as well as more basic yarn, fabrics, made-ups,[15] and the like—to countries that imposed quotas under the Multi-Fiber Arrangement decreased in the 1990s. Exports of engineering goods became more concentrated in industrialized countries as outsourcing by Germany, the United Kingdom, and the United States increased. Bangladesh's share of engineering exports, meanwhile, decreased. Exports of chemicals and allied products have diversified, and the share of "other" countries has increased markedly.

Table 2.17 presents the changes in the direction of trade. Eastern Europe's share of imports and exports has predictably declined, as the share of non-South Asian Association for Regional Cooperation (SAARC)[16] Asian developing economies in trade has increased. The United States's and European Union's shares of exports have increased, but their shares of imports have declined. Neighboring SAARC countries account for a negligible share of trade, despite their proximity. The direction of India's trade reflects greater participation in the trade of the non-SAARC Asian economies, but unfortunately not with neighboring South Asia.

India's Exports in Asian Perspective

Table 2.18 presents international comparisons of incremental exports between the average annual levels for the 4 prereform years (1987–90) and 4 postreform years (1993–96) for Bangladesh, China, Indonesia, Malaysia, South Korea, Pakistan, Taiwan, and Thailand.[17] Exports are divided into five broad categories of extended manufacturing: resource-intensive products (mainly processed agricultural and mineral products); labor-intensive products (light manufactures); scale-intensive products (mostly homogeneous, standard quality) products; differentiated products (mostly machinery and transport equipment); and mainly high-technology, science-based products.[18]

15. The category "made-ups" includes such items as curtains, table linen, sacks and bags, and bed linen.

16. SAARC's members are Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka.

17. The discussion in this section is based on the findings of Tendulkar's (2000b) analysis of Indian export performance.

18. The classifications are based on the 3-digit Standard International Trade Classification.

Table 2.16 Percentage shares of major economies in exports of selected commodities

Economy	1988–90[a]	1994–96[b]	1998–2000[c]
Cotton yarn, fabrics, made-ups, etc.			
Germany	7.3	6.5	4.7
Italy	5.8	4.8	4.7
United Kingdom	10.8	10.4	7.0
United States	13.3	12.4	13.6
Quota countries	37.3	34.1	30.0
Bangladesh	8.6	11.1	6.1
Hong Kong	2.2	3.4	6.9
Japan	4.1	4.0	3.4
South Korea	2.4	3.2	4.1
Mauritius	1.1	2.7	3.0
United Arab Emirates	3.5	3.6	3.1
Others	40.9	37.9	43.4
Total	100.0	100.0	100.0
Total exports (millions of US dollars)	861.8	2,115.8	3,058.4
Annual percentage growth rate		16.1	13.5
Percentage share in total exports	6.1	7.9	8.7
Ready-made garments			
Canada	2.9	3.2	4.0
France	6.1	6.8	7.3
Germany	14.3	12.1	8.4
United Kingdom	10.9	9.8	7.7
United States	29.1	30.7	32.3
Quota countries	67.4	66.0	62.8
Commonwealth of Independent States	10.5	2.6	4.2
Italy	4.1	3.4	3.0
Japan	2.9	3.4	1.7
Netherlands	4.2	4.3	3.2
United Arab Emirates	2.0	3.8	8.1
Others	13.0	19.9	20.0
Total	100.0	100.0	100.0
Total exports (millions of US dollars)	1,597.6	3,181.2	4,347.7
Annual percentage growth rate		12.2	10.5
Percentage share in total exports	11.2	11.9	12.3
Export of chemicals and allied products			
Commonwealth of Independent States	31.8	8.2	4.6
Chinese Taipei	2.0	3.4	2.6
Germany	8.7	8.0	6.5
Hong Kong	2.4	3.6	3.9
Italy	2.5	2.8	3.1
Japan	2.7	3.0	2.5
Netherlands	2.6	3.9	4.4
United Arab Emirates	1.4	3.0	3.8
United Kingdom	4.2	4.3	5.2
United States	11.4	12.3	11.2
Others	30.3	47.5	52.2
Total	100.0	100.0	100.0
Total exports (millions of US dollars)	857.2	1,930.8	3,099.7
Annual percentage growth rate		14.5	13.7
Percentage share in total exports	6.1	7.2	8.8

(table continues on next page)

Table 2.16 Percentage shares of major economies in exports of selected commodities *(continued)*

Economy	1988–90[a]	1994–96[b]	1998–2000[c]
Engineering goods			
Bangladesh	3.8	4.2	2.8
Germany	2.7	4.3	4.4
Italy	1.0	1.5	3.0
Japan	3.9	3.7	2.2
Malaysia	1.3	2.9	2.8
Singapore	4.3	6.6	4.4
Sri Lanka	2.0	3.9	3.2
United Arab Emirates	2.2	4.5	6.3
United Kingdom	4.8	6.5	6.6
United States	9.9	13.7	17.6
Others	64.2	48.2	46.7
Total	100.0	100.0	100.0
Total exports (millions of US dollars)	1,583.8	3,645.7	4,920.8
Annual percentage growth rate		14.9	12.0
Percentage share in total exports	11.1	13.6	13.9

a. Fiscal years 1987–88 to 1989–90: prereform triennium.
b. Fiscal years 1993–94 to 1995–96: triennium of rapid growth.
c. Fiscal years 1997–98 to 1999–2000: most recent available triennium.

Note: Percentage shares relate to the triennial average level of exports given in the third-to-last row. Growth rates given in the second-to-last row are midpoint-to-midpoint compound annual rates (i.e., over 6 years for the first and over 10 years for the second postreform triennium with the prereform triennium base).

Sources: Reserve Bank of India, *Handbook of Statistics on the Indian Economy,* 2000; Reserve Bank of India, Annual Report, 2000.

India's share of world incremental extended-manufacturing exports was a tiny 0.8 percent (row 4 of table 2.18) compared with 5.8 percent for China, with shares ranging between 1.3 percent (Indonesia) and 3.5 percent (South Korea). The double-digit aggregate export growth rate of the early 1990s (noted earlier in this chapter), though impressive in relation to India's past performance, pales in significance beside the export growth rates of its neighbors China and Indonesia. India also lags behind other countries in moving into differentiated products. Countries with smaller populations such as Malaysia, South Korea, Taiwan, and to some extent Thailand have been penetrating this expanding market.

India's performance in traditional labor-intensive products—3.0 percent of incremental world labor-intensive exports—was better than its performance in aggregate extended-manufacturing exports (row 6 of table 2.18). Nevertheless, this share is lower than Thailand's 3.4 percent, Indonesia's 4.9 percent, and China's 22.2 percent.

It is clear that although trade liberalization during the post-1991 period has improved India's export performance, it is still lagging behind other rapidly growing Asian countries. Even though India started the industri-

Table 2.17 The direction of India's trade, prereform and postreform triennia
(millions of US dollars; numbers in parentheses are percentages of the total)

Series number (1)	Country or group (2)	1988–90 Exports (3)	1988–90 Imports (4)	1994–96 Exports (5)	1994–96 Imports (6)	1998–2000 Exports (7)	1998–2000 Imports (8)
I.	**OECD,** of which:	8,180 (57.51)	11,628 (60.28)	15,266 (56.99)	15,675 (53.05)	20,138 (57.09)	21,460 (49.11)
I.1	European Union	3525 (24.78)	6,331 (32.82)	7,179 (26.80)	8,140 (27.55)	9276 (26.30)	10,760 (24.63)
I.2	United States	2,504 (17.61)	2,114 (10.96)	4,847 (18.09)	3,168 (10.72)	7,512 (21.30)	3,662 (8.38)
I.3	Australia	174 (1.23)	472 (2.45)	322 (1.20)	865 (2.93)	410 (1.16)	1,337 (3.06)
I.4	Japan	1,457 (10.24)	1,716 (8.90)	1,994 (7.45)	2,010 (6.80)	1,751 (4.96)	2,322 (5.31)
II.	**OPEC**	890 (6.26)	2,640 (13.68)	2,631 (9.82)	6308 (21.35)	3,699 (10.49)	6,108 (13.98)
III.	**Eastern Europe**	2,507 (17.62)	1,588 (8.23)	1,133 (4.23)	1,068 (3.62)	1,214 (3.44)	995 (2.28)
IV.	**Developing countries,** of which:	2,219 (15.60)	3,428 (17.77)	7,321 (27.33)	6,492 (21.97)	10,025 (28.42)	8,195 (18.75)
IV.1	SAARC	373 (2.62)	80 (0.41)	1,278 (4.77)	182 (0.62)	1,568 (4.44)	351 (0.80)
IV.2	Non-SAARC Asian countries	1,491 (10.48)	2,367 (12.27)	4,691 (17.51)	4,848 (16.41)	6,114 (17.33)	8,085 (18.50)
V.	**Africa**	281 (1.98)	571 (2.96)	1,017 (3.80)	915 (3.10)	1,669 (4.73)	2,611 (5.98)
VI.	**Latin America**	74 (0.52)	410 (2.13)	334 (1.25)	547 (1.85)	675 (1.91)	724 (1.66)
VII. Total (I to VI)		14,224 (100.00)	19,291 (100.00)	26,788 (100.00)	29,545 (100.00)	35,275 (100.00)	43,695 (100.00)

OECD = Organization for Economic Cooperation and Development
OPEC = Organization of Petroleum Exporting Countries
SAARC = South Asian Association for Regional Cooperation

Sources: Reserve Bank of India, *Handbook of Statistics on the Indian Economy,* 2000; Reserve Bank of India, Annual Report, 2000.

Table 2.18 India's incremental total exports and extended manufacturing exports along with their major contributing categories, 1987–90 to 1993–96 (the increment is for the average of annual exports during the periods 1987–90 and 1993–96)

Increment between 1987–90 and 1993–96		World	India	China	Pakistan	Bangladesh	South Korea	Taiwan	Indonesia	Malaysia	Thailand
1	Total exports (billions of US dollars)	1,519.9	13.2	77.7	3.3	1.6	47.4	39.4	22.1	41.4	28.5
2	Extended-manufacturing-product exports (billions of US dollars)	1,288.0	10.6	74.9	3.3	1.5	44.6	37.8	16.6	38.6	18.1
3	Percentage share of (2) in (1)	85.0	80.0	96.0	100.0	94.0	94.0	96.0	75.0	93.0	64.0
4	Percentage share of economy in world extended-manufacturing-product exports	100.0	0.8	5.8	0.3	0.1	3.5	2.9	1.3	3.0	1.4
5	Labor-intensive exports (billions of US dollars)	150.0	4.5	33.3	3.1	1.3	2.0	1.9	7.3	3.0	5.1
6	Percentage share of economy in world extended-manufacturing labor-intensive exports	100.0	3.0	22.2	2.1	0.9	1.3	1.3	4.9	2.0	3.4
7	Percentage composition of increment in extended-manufacturing products										
7.1	Resource-intensive	6.2							22.6	10.2	27.2
7.2	Labor-intensive	11.8	42.4	44.5	94.7	89.6	4.4	5.0	43.8	7.8	28.2
7.3	Scale-intensive	15.7	35.3	19.1			16.3	14.1			
7.4	Differentiated	54.0		23.6			68.9	68.3	15.8	63.3	36.0
7.5	Science-based	9.8								10.8	7.2

Note: Extended manufacturing products includes—in addition to the standard definition of manufacturing exports (Standard International Trade Classification or SITC 5, 6, 7, 8, minus 68)—SITC 4 and 68.

Source: Tendulkar (2000b).

alization process earlier, its rapidly growing Asian neighbors liberalized their trade and switched from import substitution to export orientation earlier than India. Their early trade liberalization helped East Asian and Southeast Asian economies diversify exports into faster growing machinery and transport equipment. They successfully exploited international trade to achieve a higher growth rate and motivate the development of a competitive industrial sector.

Invisibles in India's Current Account and Software Exports

An exclusive focus on merchandise trade in the preceding discussion is dictated by its dominant share in total trade, as well as by the ready availability of internationally comparable data. In the last two decades of the twentieth century, the role of so-called invisibles (nonmerchandise) transactions was on the rise. However, as the WTO comments, "Recorded trade figures [in invisibles transactions] still lack comparability across countries and are subject to significant distortions" (*International Trade Statistics 2001*, 216). India had net surpluses in invisibles transactions in most years, and receipts from these transactions showed a steeply upward trend in the 1990s (see figure 2.6), providing a significant support in meeting the rising deficits on merchandise trade.

Invisibles transactions are subdivided into nonfactor (commercial) services, income (investment income and compensation of employees), and current transfers on private and official accounts. Nonfactor services are further subdivided into transport, travel, and other (miscellaneous) commercial services, including software services, which have come into prominence in recent years. Of these, travel is not specific service but an assortment of goods and services consumed by travelers. India has had a net surplus in nonfactor services, current transfers, travel, and miscellaneous commercial services for 13 of the 21 years since 1980–81. However, India has had a net deficit in most years since 1980–81 in income and transport.

International comparisons (based on GATT 1994 and WTO, *International Trade Statistics 2001*, for the 1980s and 1990s) point to two interesting trends for India with regard to commercial services. First, in contrast to the rapidly growing economies of East and Southeast Asia, India's share of world exports of commercial services *exceeded* that of world merchandise exports in most years. Second, and more interesting, India's share of world exports of commercial services was as high as 0.87 percent in 1983 (as compared with 0.57 percent of world merchandise exports) but declined steadily to 0.57 percent in 1996 (0.62 percent for merchandise exports) and has since shown a dramatic acceleration to 1.22 percent in 2000 (0.67 percent for merchandise exports).

Table 2.19 Invisibles in India's current account and software exports in the 1990s (billions of US dollars unless otherwise indicated)

Description	Annual average	
	1993–94 to 1996–97	1997–98 to 2000–01
1. Total receipts from invisibles	16.481	28.433
2. Of which, receipts from nonfactor services	6.555	14.299
3. Of which, receipts from miscellaneous services	2.038	8.738
4. Estimated software exports[a]	0.665	3.690
5. Row 2 as a percentage of row 1	39.8	50.3
6. Row 3 as a percentage of row 2	31.1	61.1
7. Row 4 as a percentage of row 3	32.6	42.2
8. Current account deficit (balance of payments)	3.739	4.123
9. Trade account deficit (balance of payments)	9.820	15.241
10. Current private transfers (net) (balance of payments)	8.558	11.791
11. Merchandise exports (balance of payments)	28.996	38.103

a. Software exports include on-site and offshore professional services, consultancy and training, products and packages and more recently information-technology-enabled services.

Sources: Reserve Bank of India, *Handbook of Statistics on the Indian Economy,* 2001; for row 4, National Association of Software and Service Companies, http://www.nasscom.org.

We focus on the last 8 years of the decade 1991–2001, of which the last 4 (1997–98 to 2000–01) are marked by an acceleration in exports of commercial services. Table 2.19 presents annual averages for the two 4-year periods.

The impact of surpluses in the invisibles account on the current account can be easily seen by the difference between rows 9 and 8 in table 2.19. It may be noted that an annual increase of nearly $12 billion in the average foreign exchange receipts from invisibles during the last 4 years (row 1) exceeded the annual increase in merchandise export earnings by $3 billion (row 11). In other words, the slowdown in growth of exports of goods did not affect invisibles. More important, nonfactor commercial services and private transfers (net) exchanged their relative shares of total exports of invisibles. A rise in the share of nonfactor services from nearly 40 percent in the first period to a little more than 50 percent in the second mirrors the corresponding decline in the share of private transfers (row 10) in total receipts from invisibles.

India's rising share in world exports of nonfactor services along with the increasing importance of these exports in India's current account suggests the intriguing possibility that India could become a leading exporter of nonfactor services. Implicit in this is also the pessimism that India cannot become a major player in world merchandise exports—not because of a lack of potential but because of domestic infrastructural and institutional (labor and capital) constraints.

Within the group of nonfactor commercial services, it is the miscellaneous group (row 3 of table 2.19) that increased its annual average re-

ceipts more than fourfold, thereby almost doubling its share of nonfactor services (row 6). Interestingly, net earnings from miscellaneous services had been in deficit continuously from 1992–93 to 1996–97 before turning to surpluses in the following 4 years, perhaps reflecting the growth of software exports.

Unfortunately, India's balance of payments data as yet do not explicitly show the exports of software as a separate category. The Reserve Bank of India draws on the National Association of Software and Service Companies (NASSCOM) for this purpose. To assess the importance of software in the current account, we have given the NASSCOM estimates of software exports (row 4 of table 2.19). Two facts stand out.

First, the annual average export revenue from software expanded nearly six times from the first to the second periods. Second, its share of miscellaneous receipts increased by nearly 10 percent but remained nondominant at 42 percent (row 7 of table 2.19). It appears that, although software exports may have become the single largest item in the exports of miscellaneous commercial services, they do not fully explain the dramatic increase in total receipts from this source. Other services, as yet unidentified, contributed significantly to the surge in exports of nonfactor services in the last 4 years of the decade.

Software exports started from a very low base of $126 million in 1990–91 and experienced an annual average growth of more than 50 percent to reach $6.32 billion in 2000–01. Export earnings include revenue from on-site and offshore high-end professional services, consultancy and training, data processing, support and maintenance services, products and packages, and more recently low-end information technology (IT) services comprising remote processing and servicing transactions such as call centers, accounting services, medical transcripts, and back-office operations.

Software offers an interesting case of the rapid growth of an export-oriented industry, a growth that was largely market driven without direct government intervention or support. The industry was mainly export oriented, with the share of exports in progressively growing total sales going up from 41 percent in 1987–88 to 70 percent in 2000–01. One factor explaining its export orientation was the slow adoption and low spending on IT by domestic industry, which has been dominated by the public sector, has operated in a long-protected market, and has had little interest in improving the quality of its product or reducing its cost of production. It had little incentive to spend on IT.

However, the relatively lower wages of readily available skilled IT personnel, and the widespread use of English in India, have made outsourcing operations profitable for companies abroad who face rising wages of similarly skilled labor in their domestic markets. The practically unbounded international market has induced domestic and transnational

firms (which would otherwise be competing for the limited domestic market) to form mostly mutually complementary high-technology clusters. These started in Bangalore in the mid-1980s and then spread to Hyderabad and Chennai (Madras) in the South, Pune in the West, and Gurgaon in the North.

The industry has also become fiercely competitive over time.[19] The Bangalore cluster alone now has more than 140 transnational development centers, which, along with large Indian IT firms, are exclusively oriented toward exports. In addition, there are 750 large and small IT firms in Bangalore alone. Clustering has the obvious advantage of the economics of agglomeration. Further, it has enabled this industry not only to overcome infrastructural constraints on telecommunication facilities but also to exploit the spillover effects of diffusing new technologies and ideas, in which transnational companies have played a catalytic role.

A study by McKinsey and Company (2001, vol. 3, 143–60) forecasts an export market (excluding on-site services) of $25 billion and a domestic market of $21 billion by 2010, with a tenfold growth in the requirement of software professionals to 2.1 million. The estimated labor power is derived from an assumption of 30 percent annual growth in demand for software decomposed into 7 percent average growth in productivity and 23 percent in employment. Slower growth in productivity is attributed to increasing competition, an increasing share of unsophisticated domestic end users, and higher growth in the resulting demand for entry-level workers. Productivity growth and hence growth in skilled wages in the companies catering to the high end of the international market is expected to be considerably higher than average. More recent data from NASSCOM (2002a) project exports of between $57 and $65 billion and a domestic market in the range of $13 to $15 billion by 2008. The industry also claims to employ more than a million persons as of March 2002.

Of course, realizing the export prospects would depend on India's remaining competitive in the face of challenges from other emerging players in the field, particularly China. We expect the domestic market for the IT sector to grow faster in the future as end-user industries, themselves facing increasing competition from imports, strive to raise productivity by adopting new technologies including IT.

Are there other services like software where India could expect a competitive advantage? Travel and tourism suggests itself as an eminently suitable candidate. The Task Force on Employment Opportunities (GOI-PC 2001b) reports, citing the WTO as a source, that India was forty-third

19. For an interesting analytical narrative on the evolution of this industry based on case studies of 30 Indian and transnational firms, see Patibandla and Petersen (2002) and the references cited there.

on the list of tourist destinations worldwide, with just 2.2 million tourist arrivals compared with 23 million in China (12 million excluding visitors from Hong Kong), a few more than 7 million in Malaysia and Thailand, and 5 million in Indonesia.

There is clearly a tremendous potential for India to tap this market. But to do so, the problems of inadequate investment in tourism infrastructure have to be addressed. Better transport and other infrastructural facilities would be needed as well. The Task Force Report correctly recommends investment in tourism infrastructure, including total development of each tourism circuit as a unit for investment, as well as improving the quality of airports, airlines, railways, roads, tourist bases, and hotels. As was mentioned above, tourism is not a specific service but an assortment of goods and services purchased by international travelers. The indirect semiskilled and unskilled employment growth that would result from tourism is expected to be substantial.

Two other services are likely to emerge as significant contributors to invisibles earnings. The first is related to higher education. Already students from India's neighbors such as Bangladesh come to India in significant numbers for higher education, particularly in technical fields such as IT, engineering, business management, and medicine. Provided this segment of the education sector in India is reformed—both by charging appropriate tuition and other fees that reflect costs and, equally important, by allowing greater involvement of the private sector (including the nonresident Indian academic community)—it can train far more students from India and abroad. Already, an innovative step has been taken with the establishment of a school of management in Hyderabad with the involvement of reputable foreign business schools and nonresident Indian scholars. The Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIMs), which were initially established in collaboration with foreign institutions, have long been recognized as premier institutions whose graduates pioneered India's success in software.

The proposal to start many more such institutions, implemented with substantial contributions from the alumni of IITs and IIMs, would be another major step. Clearly, given their current abysmal state, the state's resources have to be concentrated on the efficient provision of primary and secondary education. This being the case, major reforms of the higher-education sector would be needed to ensure that resources for investment in higher education are mobilized largely from the private sector.

The second service is related to health care. In this sector, in the past decade or longer, many hospitals have been established in the private sector with the active involvement of nonresident Indian physicians. These hospitals also serve patients from Bangladesh and West Asia. There is a significant potential for attracting more foreign patients. Also, with the growing scarcity of nursing personnel in industrial countries, experienced Indian nurses are being recruited to serve abroad. Clearly, the growth in

the number of nurses being trained in India has to be adequate both to supply domestic hospitals and to meet external demand if a rapid rise in the cost of nursing is to be avoided.

Moreover, India's tradition of alternative systems of medicine and health care could attract foreign patients. It is also possible to set up retirement and nursing homes to attract foreign retirees. Again, given the poor state of India's health care systems for poor people, any investment to set up more hospitals, train nurses, or create retirement homes and health care facilities has to be financed by private initiative.

The skill content of the heterogeneous tertiary services in the economy has grown with overall economic growth. The average triennial share of this sector in national income has increased by 8 percentage points from 45 percent (at the end of the 1980s) to nearly 53 percent (at the end of the 1990s), compared with just a 3-percentage-point increase in the previous decade.

India also is competitive in as yet untapped areas like courier services, accounting services, and architectural and engineering services, where technical personnel is available in India at competitive wages and advances in telecommunications are expected to open up possibilities of offshore services. It is clear that India has a vital interest in ensuring that the ongoing negotiations in the WTO on services succeed in further liberalizing the sector in terms of market access, most-favored-nation access, and national treatments. Above all, a liberal multilateral agreement on the movement of natural persons[20] is essential.

Challenges and Policies in Managing the Capital Account in the 1990s

In the 1990s, capital account transactions in the balance of payments posed interesting new challenges for the macroeconomic management of the Indian economy. India's policy stance was shaped by the experience of the 1980s and by the new complexities of liberalizing the financial sector.

Until the end of the 1970s, capital account transactions consisted mostly of official bilateral or multilateral concessional flows, which went toward financing the current account deficit because private capital flows were severely restricted under the autarkic ideology of economic nationalism. As official concessional development assistance declined worldwide and was found less and less adequate to bridge the rising current account deficits of the 1980s, Indian policymakers responded by resorting to ex-

20. The phrase "movement of natural persons" is an arcane GATT phrase meaning temporary migration of workers from one GATT Contracting Party to another. The word "natural" is used to distinguish human beings from corporate entities who are also termed "persons" in a legal sense.

ternal commercial borrowing and attracting deposits from nonresident Indians by offering attractive interest rates.

Thus, while annual average net concessional assistance increased from $1.4 billion in the first half of the 1980s to $2.3 billion in the second half, the average current account deficits almost doubled from $3.0 to $5.8 billion during the same periods. In comparison, annual average external commercial borrowing increased by 2.6 times, from $0.7 to $1.9 billion, and net nonresident Indians' deposits increased almost fourfold, from $0.6 to $2.3 billion. The pressure on the exchange rate from rising current account deficits was exacerbated toward the end of 1980s by the uncertainty caused by political instability and the spike in oil prices following the war in the Persian Gulf.

As was noted above, these events led to capital flight in the expectation of imminent devaluation and resulted in the crisis of 1991. Early in 1991, foreign exchange reserves had dwindled to a level one-third the magnitude of short-term debt and offered an import cover for just 15 days. In response to this macroeconomic and balance of payments crisis, there was a sharp fiscal contraction in 1991 and 1992 followed by a liberalization of controls on external trade and investment.

The fear that excessive reliance on private debt flows could lead to crises led Indian policymakers to be very cautious in liberalizing capital account transactions. Their caution was also driven in part by pressure from well-entrenched domestic industrialists who were reluctant to face foreign competition (we will say more on this in chapter 5). After meeting the immediate crisis of 1991 by negotiating structural adjustment loans from the International Monetary Fund and the World Bank, Indian policymakers had to contend with new challenges in macroeconomic management.

The first challenge was posed by the surge in total net capital inflows from $3.9 billion in 1992 to nearly $9.0 billion and $8.5 billion in the next 2 years (table 2.4). The upsurge, unless offset by an increase in imports and/or sterilization, threatened to cause the currency to appreciate and stoke inflation through an increase in the money supply. Both would have harmed exports, which had risen following sharp devaluations in 1991 and 1992—of 22.8 and 17 percent in the nominal exchange rate.[21] The policy response consisted of a mix of measures—including further liberalizing of imports, retiring short-term debt, allowing some appreciation of the exchange rate and controls on debt capital (consisting of ceilings on external commercial borrowing), reducing the attractiveness of nonresident Indians' deposits, and asking borrowers to park borrowed funds abroad until they were committed to specific domestic uses.

The next challenge was posed by the volatility in international financial flows following the Mexican crisis (1995–96), the aftermath of the East

21. The reader may refer to table 4.1.

Asian currency meltdown in 1996 and 1997, and the international sanctions following India's nuclear tests in 1998. Indian policymakers handled this situation by allowing moderate depreciation, modulating intervention in the debt market, and taking restrictive monetary measures (Joshi 2001). The nominal exchange rate was depreciated by 8.2 percent in 1995 and, after holding its level for the next 2 years during the Asian currency crisis, was allowed to depreciate again by 9 percent in 1998. The REER, however, showed some moderate appreciation.

According to the Reserve Bank of India (RBI 2001, chap. 6), the capital account control regime in India aims to avoid volatility in the exchange rate, ensuring a well-diversified capital account that includes portfolio investments, and changing the composition of capital flows in favor of non-debt liabilities and a higher share of long-term debt in total debt. For this purpose, it adopted an asymmetric treatment between inflows (liberal), outflows associated with inflow (free), and other outflows (restricted)—along with differential restrictions on residents (restricting outflows) vis-à-vis nonresidents (liberal) and individuals vis-à-vis corporate bodies and financial institutions.

In implementing this regime, a variety of market-based and direct instruments have been deployed. They include quantitative annual ceilings on external commercial borrowing, shifting FDI gradually from case-by-case to automatic routes, portfolio investments being restricted to approved foreign institutional investors and nonresident Indians, taxing short-term capital gains at a higher rate than long-term gains, giving Indian companies access to international capital market through GDRs and ADRs (subject to specific guidelines), and, recently, permitting FDI abroad by Indian companies (joint ventures and acquisitions) through both automatic and case-by-case routes.

The policy seems to have succeeded to a large extent in achieving its stated objectives, as is evident from the composition of net capital inflows presented in table 2.4. The composition of long-term flows has shifted, from debt-creating inflows in 1990 and 1992 to non-debt-creating FDI and portfolio flows and a considerable reduction in short-term debt. As a result, the share of short-term debt in the stock of total external debt came down from 10 percent by the end of March 1991 to 3.4 percent by the end of March 2001.

Joshi (2001) has analyzed the various explanations for the fact that India escaped the East Asian currency turmoil. He concludes that, even though India was no different from the affected countries in vulnerability indicators, the presence of capital controls and tight control over short-term debt enabled India to avoid the crisis and the contagion of the 1990s. Though conceding the advantages of capital account convertibility (CAC) for India to exploit its long-term comparative advantage in the export of some financial services and software, given the weaknesses in the Indian financial sector, his judgment is that "CAC would increase the potential

for macroeconomic crises that could disrupt the country's large and unfinished reform agenda" (p. 318). We do agree that weaknesses in the Indian financial sector need to be corrected. Among the corrective actions, greater involvement of the private sector (particularly foreign-based firms) in banking, if not the withdrawal of the public sector altogether, would be needed.

It is arguable that the lesson of India's escaping the Asian currency crisis is not that tight capital controls and an absence of CAC were appropriate but rather that because of both, India was not a major player in the market for capital flows and, not being a major player, did not experience the crisis. Further, a commitment to remove capital controls and move toward CAC by a specified date in the near future would increase the pressure to reform the financial sector. China (OECD 2002b, chaps. 7, 8, 14, and 15), for example, has committed to opening its financial sector fairly rapidly as part of the WTO accession agreement. Chinese policymakers hope to use the imminent opening of the financial sector to accelerate the reform of the sector. Clearly, considerable risk is involved in this strategy. The weaknesses of domestic banks can be remedied only slowly, and the entry of foreign banks could exacerbate these weaknesses. Chinese policymakers appear to be more willing than their Indian counterparts to take the risks involved.

Effects on Domestic Competitiveness

Trade liberalization, by removing distortions in investment incentives, is expected to increase efficiency and hence the international competitiveness of the production structure. In this section, we attempt to capture the extent to which India's reforms have increased international competitiveness in two ways. First, we examine input-output flow matrices for 115 sectors of the Indian economy to assess macrosectoral export orientation in manufacturing. Four such matrices are available: for 1978, when Indian exports started responding to the depreciating exchange rate of the rupee in the mid-1970s; for 1983, when REER appreciation had begun after the second oil shock; for 1989, the last of the prereform years of the late 1980s, when sustained REER depreciation had given a boost to exports; and finally, for 1993, the first of the 3 postreform boom years.

Because the main focus of the above-mentioned policies was on the manufacturing sector, we concentrate on 64 (mostly 3-digit-level) manufacturing sectors out of the 115 distinguished in the input-output flow matrices. We interpret a high and rising share of exports in gross output as indicative of the increasing importance of international markets in domestic production and as evidence of a change in the incentive structure.

The behavior of sectoral export shares in gross output over time, shown in table 2.20, can be classified according to three broad patterns. First,

Table 2.20 India's top 10 manufacturing export earners in 1993–94, along with shares in gross output

Series number (1)	Input-output sector number (2)	Sector description (3)	Export earnings (millions of US dollars) (4)	Percentage share in manufacturing exports (5)	Percentage share in sectoral gross output (6)
1	98	Miscellaneous manufactures	2,343.41	14.63	36.85
2	71	Other nonmetallic mineral products	1,990.72	12.43	91.20
3	48	Ready-made garments	1,917.76	11.97	75.62
4	42	Cotton textiles	755.17	4.71	9.57
5	55	Leather and leather products	605.62	3.78	49.50
6	36	Edible oils, other than vanaspati	522.15	3.26	17.00
7	38	Miscellaneous food products	515.29	3.22	7.30
8	66	Soaps, cosmetics, and glycerin	454.05	2.83	20.56
9	54	Leather footwear	393.36	2.46	36.31
10	61	Organic heavy chemicals	356.54	2.23	23.89
11	Total contribution to manufacturing export earnings		9,854.07	61.52	—

Note: The exchange rate used is $1 = Rs31.36.

Source: CSO (2000a).

"other nonmetallic mineral products" (essentially gems and jewelry), ready-made garments, and miscellaneous manufactured products were internationally competitive even under the earlier restrictive trade policy regime. Their export shares rose over time, and they remained major export earners in all years.

Second, leather footwear; organic heavy chemicals; soaps, cosmetics, and glycerin (table 2.21); paints, varnishes, and lacquer; industrial machinery; and edible oils other than vanaspati (table 2.22) are sectors where export shares were low in 1978–79 but rose over time. They did not contribute significantly to manufacturing export earnings but are likely to be major export earners in the future as they increase their share of export-oriented output and establish international competitiveness.

Third, traditional industries such as carpet weaving; leather and leather products; silk textiles (table 2.21); tea and coffee processing; jute, hemp, and mesta textiles; and miscellaneous textile products—as well as some apparently nontraditional industries, such as miscellaneous metal products (table 2.22), bicycles and cycle rickshaws, and other industrial machinery (table 2.22)—have fluctuating or declining sectoral export shares over time.

The export performance of the corporate sector provides a second means of assessing the impact of reforms on international competitiveness. The prereform protected economy provided little incentive to produce for international markets. Many labor-intensive, and hence exportable, products had been reserved for exclusive production in small-scale units. The liberalization of imports, market-determined exchange rates, and the removal of entry barriers following the post-1991 reforms introduced both domestic and external competition, which have brought about a more efficient utilization of resources. We draw on recent studies by the National Council of Applied Economic Research (NCAER 1999) and Tendulkar (2000a) to examine these issues.

We focus on two summary indicators from the NCAER study: the shares of wages and exports in total sales (table 2.23). In general, the export orientation of the corporate units has indeed increased during the postreform period. The export ratio, a sign of increased international competitiveness, has increased in all the industry groups, except electrical machinery. The wage share has declined, to varying degrees, in all of the 17 industries covered by the NCAER study. This is consistent with increased export orientation, which is associated with higher productivity per worker and more efficient utilization of labor.

We turn to a factory segment of India's manufacturing industry to address the impact of reforms on output and employment growth. The removal of domestic entry barriers and QRs on imports of most of the intermediate and capital goods, as well as import tariff reductions, has led to faster growth in real manufacturing output and employment in the more productive factory segment.

Table 2.21 India's input-output sectors with export share in gross output exceeding 20 percent in 1993–94
(numbers in parentheses are percentages of total manufacturing exports)

Serial number (1)	Input-output sector number (2)	Sector description (3)	Share of exports in gross output (percent) 1978–79 (4)	1983–84 (5)	1989–90 (6)	1993–94 (7)
1	71	Other nonmetallic mineral products	38.08 (15.5)	51.28 (16.2)	53.08 (13.1)	91.20 (12.4)
2	48	Ready-made garments	40.48 (10.7)	36.38 (10.6)	70.26 (10.7)	75.62 (12.0)
3	47	Carpet weaving	63.31 (2.7)	60.34 (3.1)	65.40 (3.4)	65.77 (0.9)
4	55	Leather and leather products	73.47 (6.7)	41.78 (3.7)	51.72 (4.8)	49.50 (3.8)
5	54	Leather footwear	23.97 (7.9)	33.03 (15.8)	36.20 (12.9)	36.85 (14.6)
6	98	Miscellaneous manufacturing	3.98 (0.4)	19.15 (2.1)	35.53 (2.3)	36.31 (2.5)
7	87	Electrical appliances	18.49 (1.4)	13.60 (1.7)	10.07 (1.2)	28.49 (0.6)
8	61	Organic heavy chemicals	6.15 (0.4)	2.64 (0.4)	9.20 (1.6)	23.89 (2.2)
9	44	Silk textiles	5.95 (0.3)	6.17 (0.7)	24.81 (0.9)	21.92 (0.5)
10	66	Soaps, cosmetics, and glycerin	9.24 (1.4)	8.17 (2.0)	17.63 (2.7)	20.56 (2.8)
11	Total percentage contribution to manufacturing exports (serial nos. 1 to 10)		47.4	56.3	53.6	52.3
12	Value of export earnings (millions of US dollars)		5,380.41	7,146.63	13,865.81	16,021.88

Note: Growth rates are compound annual rates from the previous point in time.

Sources: CSO (1981, 1990, 1997, 2000a).

Table 2.22 India's input-output sectors with export share in gross output between 10 and 20 percent in 1993–94 (numbers in parentheses are percentages of total manufacturing exports)

Serial number (1)	Input-output sector number (2)	Sector description (3)	Share of exports in gross output (percent) 1978–79 (4)	1983–84 (5)	1989–90 (6)	1993–94 (7)
1	37	Tea and coffee processing	29.79 (5.3)	23.95 (6.4)	25.36 (3.7)	17.35 (2.0)
2	36	Edible oils, other than vanaspati	5.57 (2.5)	2.81 (2.1)	8.92 (2.0)	17.00 (3.3)
3	64	Paints, varnishes, and lacquers	5.74 (0.7)	5.23 (0.7)	11.33 (1.4)	15.35 (1.6)
4	95	Bicycles and cycle rickshaws	14.80 (0.4)	14.54 (0.5)	8.28 (0.1)	15.35 (0.3)
5	89	Other electrical machinery	8.21 (0.5)	6.68 (0.5)	4.14 (0.1)	14.85 (0.8)
6	49	Miscellaneous textile products	11.97 (2.1)	3.28 (0.1)	4.91 (1.1)	13.08 (1.4)
7	46	Jute, hemp, and mesta textiles	16.24 (2.0)	15.80 (2.0)	13.48 (1.0)	13.01 (0.5)
8	80	Industrial machinery (other than food and textile machinery)	2.79 (0.2)	3.66 (0.3)	12.08 (1.0)	10.67 (0.5)
9	77	Miscellaneous metal products	7.35 (1.5)	3.43 (1.1)	1.70 (0.8)	10.58 (1.4)
10	Total percentage contribution to manufacturing exports (serial nos. 1 to 9)		15.2	13.7	11.2	11.8

Note: Growth rates are compound annual rates from the previous point in time.

Sources: CSO (1981, 1990, 1997, 2000a).

Table 2.23 Percentage share of wages and exports in total sales for selected industries in India (rank is in parentheses)

Serial number (1)	Sector (2)	Wage share 1980–90 (3)	Wage share 1991–96 (4)	Export share 1980–90 (5)	Export share 1991–96 (6)
1	Leather products	20.0 (1)	15.7 (1)	14.4 (2)	25.5 (1)
2	Publishing and printing	16.0 (2)	13.2 (2)	0.9 (15)	1.9 (16)
3	Machinery and equipment	13.1 (4)	10.0 (3)	5.6 (4)	7.1 (11)
4	Motor vehicles	12.5 (6)	9.5 (4)	3.8 (10)	7.2 (10)
5	Basic metal products	11.0 (10)	8.6 (5)	3.1 (11)	11.5 (4)
6	Nonmetallic mineral products	11.8 (8)	8.6 (6)	2.7 (12)	9.0 (6)
7	Textiles	14.5 (3)	8.4 (7)	6.5 (3)	12.1 (3)
8	Paper products	10.7 (11)	8.3 (8)	0.7 (16)	3.8 (14)
9	Wood products	11.5 (9)	8.1 (9)	2.0 (14)	5.8 (13)
10	Chemical products	9.1 (13)	7.5 (10)	4.8 (7)	7.5 (8)
11	Fabricated metal products	9.6 (12)	7.5 (11)	2.2 (13)	6.1 (12)
12	Rubber and plastic products	8.8 (14)	7.5 (12)	5.0 (5)	9.9 (5)
13	Tobacco products	12.8 (5)	7.4 (13)	19.1 (1)	19.5 (2)
14	Electrical machinery	11.8 (7)	7.1 (14)	5.0 (6)	2.4 (15)
15	Other transportation machinery	8.6 (15)	6.5 (15)	3.8 (9)	7.5 (8)
16	Food products	6.7 (16)	5.4 (16)	4.2 (8)	8.1 (7)
17	Petroleum products	4.4 (17)	3.6 (17)	0.0 (17)	1.3 (17)
18	All companies	11.3	8.3	4.8	8.6

Source: NCAER (2001: part 1, table C.VIII.1, for columns 3 and 4; part 1, table C.VIII.7, for columns 5 and 6).

We first focus on the relative shares of labor in an unorganized, predominantly small-scale, nonfactory segment and the organized, more productive, factory segment during the past three decades. According to the quinquennial National Sample Surveys (NSSs) of employment and unemployment, the share of factory plus nonfactory manufacturing employment in the total workforce increased only marginally from 9.0 percent in 1972 to 11.1 percent in 1999. Combining NSSs with the Annual Survey of Industries for the factory manufacturing sector shows that the share of the more productive factory segment in total manufacturing employment has stagnated at about 17 percent during the same period, despite respectable annual growth of about 7 percent in real manufacturing output. Labor market rigidities (to be discussed in chapter 5) constitute the major factor for the relative stagnation of factory-sector employment.

Table 2.24 Number of workers in the factory segment of manufacturing at the 2-digit industry code level in India

Two-digit code[a] (1)	Average number of workers: 1980–81 to 1982–83, period I (2)	Average number of workers: 1988–89 to 1990–91, period II (3)	Average number of workers: 1995–96 to 1997–98, period III (4)	Change between periods I and II (5)	Change between periods II and III (6)	Percentage composition of column 6 (7)
20–21	1,003,917	841,512	1,019,154	–162,404	177,642	15.96
22	389,893	440,774	532,601	50,882	91,827	8.25
23	920,280	729,380	736,656	–190,900	7,276	0.65
24	196,030	231,167	285,914	35,137	54,747	4.92
25	234,239	189,043	212,790	–45,195	23,747	2.13
26	81,383	129,342	295,523	47,959	166,182	14.93
27	64,027	56,768	61,643	–7,259	4,876	0.44
28	221,490	207,520	251,038	–13,970	43,518	3.91
29	50,639	83,969	106,574	33,330	22,605	2.03
30	137,485	312,553	525,008	175,068	212,455	19.09
31	337,526	251,871	253,583	–85,655	1,711	0.15
32	313,039	353,578	366,623	40,539	13,046	1.17
33	446,511	464,682	518,163	18,171	53,481	4.81
34	151,701	168,529	214,906	16,828	46,377	4.17
35	293,754	294,784	328,251	1,030	33,467	3.01
36	218,543	251,101	296,148	32,558	45,048	4.05
37	377,624	364,991	438,183	–12,633	73,192	6.58
38	51,470	66,188	107,801	14,719	41,613	3.74
20–38	5,489,550	5,437,754	6,550,562	–51,796	1,112,808	100.00

a. Description of the 2-digit industry codes: 20–21, food products; 22, beverages, tobacco, etc.; 23, cotton textiles; 24, wool, silk, etc.; 25, jute textiles; 26, textile products; 27, wood, furniture, etc.; 28, paper and printing, etc.; 29, leather and fur products; 30, chemicals, etc.; 31, rubber, petroleum, etc.; 32, nonmetallic products; 33, basic metal industries; 34, metal products; 35, nonelectrical machinery; 36, electrical machinery; 37, transport equipment; 38, other manufacturing.

Source: Tendulkar (2000a).

The 1980s, in particular, were described as a decade of "jobless growth," because there was a virtual stagnation of employment in the factory segment. There was a net decline of about 52,000 in the average number of factory workers (table 2.24). Seven out of 18 industry groups suffered job losses amounting to 518,000, which were not offset by the job gains of the remaining groups. Employment in the factory sector grew, however, at 2.9 percent annually in the 1990s. The latest available postreform triennium 1995–97 marked a net increase of 1.11 million jobs over the prereform triennium 1988–90.

The crucial differences between the 1980s and 1990s with regard to employment growth were that there was a 2 percent annual *rise* in real output growth and a 2 percent annual *decline* in the growth rate of labor costs (table 2.25). Employment growth was equally responsive to real output growth in both decades, once the impact of growth in labor costs is netted out. Reduced distortions and greater competition during the postreform

Table 2.25 Exponential trend growth rates (percent) and partial elasticities for variables associated with factory manufacturing in India

Series number (1)	Description (2)	1980–81 to 1990–91 (3)	1990–91 to 1997–98 (4)
1	Number of workers	–0.12 (0.016)	2.92 (0.89)
2	Gross value added at 1993–94 prices	7.13 (0.97)	9.09 (0.94)
3	Wholesale price index for all commodities[a]	6.56 (0.99)	8.43 (0.98)
4	Implicit deflator for aggregate gross value added in manufacturing[b]	6.83 (0.99)	6.83 (0.99)
5	Consumer price index for industrial workers[c]	8.29 (0.99)	9.05 (0.99)
6	Real consumption wage per worker[d]	3.02 (0.92)	1.29 (0.56)
7	Real product wage per worker	4.48 (0.93)	2.62 (0.80)
8	Partial elasticity of employment with respect to real output[e]	0.85 (27.96)	0.90 (25.92)
9	Partial elasticity of employment with respect to product wage[e]	–0.83 (–15.43)	–0.97 (–21.30)

a. The wholesale price index for all commodities is the average of months for a fiscal year (April–March).
b. The implicit deflator for aggregate gross value added (AGVA) in manufacturing is derived as a ratio of AGVA at current prices divided by real AGVA at constant prices derived as a sum of 2-digit industry-specific real gross value added (defined as part of the definition of g_{va} in note e below).
c. The Consumer Price Index for Industrial Workers (CPIIW) is the average of the months in a fiscal year (April–March).
d. The real consumption wage is the average wage per worker deflated by CPIIW (defined in note c).
e. The partial elasticities in rows 8 and 9 (t-values in parentheses) are from cross-sectional regressions across 18 two-digit industry groups given below for 1981–91 (equation 1) and 1991–98 (equation 2):

$$g_e = \underset{(-9.19)}{-8.98} + \underset{(27.96)}{0.8516}g_{va} - \underset{(-15.43)}{0.8307}g_{pw} + \underset{(8.07)}{8.4257}\alpha \qquad \text{adjusted } R^2 = 0.9830 \qquad (1)$$

$$g_e = \underset{(16.80)}{-15.53} + \underset{(25.92)}{0.8959}g_{va} - \underset{(-21.30)}{0.9705}g_{pw} + \underset{(16.48)}{16.2980}\alpha \qquad \text{adjusted } R^2 = 0.9825 \qquad (2)$$

where g_e = the growth rate of the number of employed workers; g_{va} = the growth rate of real value added, defined as the gross value added at current prices deflated by the wholesale price index for output (1993–94 = 100) for each industry group; g_{pw} = the growth rate of product wage, defined as the average wage per worker at current prices deflated by the wholesale price index of output for each industry group; and α = the elasticity of the nominal wage bill (NWB) with respect to the nominal gross value added (NGVA), derived by dividing the growth rate of NWB by the growth rate of NGVA.

Note: Growth rates in rows 1 through 7 are slope coefficients of semi-log trend equations with squared product-moment correlation coefficients (r^2) in parentheses.

Source: Tendulkar (2000a).

1990s thus were associated with a higher rate of labor absorption as well as higher growth in the real manufacturing output of the more productive factory manufacturing segment.

Growth Performance in the 1990s

Economic reforms and stabilization since 1991 have aimed to put the Indian economy on a path of sustainable fiscal and current account deficits and more rapid growth. The growth performance of the Indian economy in the 1990s was, therefore, closely linked to variations in fiscal discipline and the pace of the economic reform process.

To correct the fiscal profligacy of the 1980s, a sharp fiscal contraction of 2.3 percent of GDP was undertaken by the central government in 1991 and 1992. This was accompanied by a two-step devaluation of the currency and savage import compression to bring the current account deficit within manageable limits. Predictably, the growth rate dipped to 1.3 percent in 1991 (table 2.3) but recovered quickly to 5.1 percent the next year. It remained below 5.6 percent recorded in the immediate prereform year of 1990.

The next 4 years, the period 1993–96, posted steadily rising growth rates, peaking at 7.9 percent in 1996 and averaging 7.1 percent during the period. This growth performance was unprecedented. As was noted above, this was the period of wide-ranging liberalization of controls on private economic activities, the removal of entry barriers, and the introduction of external competition through the rationalization and gradual reduction of import tariffs. There was a fair amount of corporate restructuring through mergers, acquisitions, joint ventures, strategic alliances, and so on. After a spike in the fiscal deficit in 1993, the gross fiscal deficit (center and states combined) in relation to GDP reached its minimum for the decade in the period 1995–96.

The double-digit inflation rate of the early 1990s also declined to 4.4 percent in 1997 (see table 4.1 below). With a congenial macroeconomic environment and the removal of controls, gross domestic capital formation (at constant 1993–94 prices) rose by 2 percent of GDP in 1990 to reach a maximum for the decade at 27.2 percent. The consequent surge in growth was led by the manufacturing sector in general, in particular registered factory manufacturing. The latter was affected most by policy reforms and posted an impressive average growth of 12.9 percent for the 4-year period. Still outside the reform process, but helped by favorable monsoons, the agricultural sector maintained its average growth rate of 4.4 percent during the 1980s, whereas services increased their average growth rate to 8.1 percent compared with the 1980s (table 2.3).

The last 4 years of the decade saw the gradual dilution of discipline in central—and especially state—budgets. What is worse, the consolidated fiscal deficit of the public sector (figure 2.9) again crossed the 2-digit level

of the 1990s, and two-thirds of the gross fiscal deficit arose from mostly unproductive current expenditures. The reform process also slowed down, with average import tariff levels again on the rise with the removal of QRs on imports of consumer goods in 2000 and 2001. There was also some appreciation of the real effective exchange rate following the Asian currency crisis (see table 4.1).

As a result, the overall growth rate slowed down to 5.4 percent on average during the period 1997–2000, following a considerable slowdown in industrial growth to barely 3 percent in the registered manufacturing sector. The latest data suggest that after further declining to 4 percent in 2000–01, the GDP growth rate recovered to 5.4 percent in 2001–02.[22] An official analysis of the slowdown (Ministry of Finance, *Economic Survey*, 2001–02, box 7.1, 169) attributes the slowdown to domestic demand (from a slowdown in agricultural growth to an average of 1.3 percent) and to supply factors, including high interest rates (a consequence of rising fiscal deficits); infrastructural bottlenecks; restricted labor laws; high costs; and an inadequate, unreliable supply of transport, communications, and electricity. With the relaxation in the pace of reforms and fiscal discipline, the economy appears to be in danger of relapsing to a lower growth path. If this happens, it will indeed be unfortunate, because it will slow the process of poverty reduction that had gained some momentum in the 1990s.

The Employment and Poverty Situation in the 1990s: A Brief Assessment

Our analysis above of the factory sector was based on disaggregated 2-digit industry-level data that are available only until 1997. For the later 2 years, the available aggregate employment figures indicate declines in employment of about 1.2 million in 1998 and 84,000 in 1999.[23] This was the result of a very sharp decline in the annual growth in real output of registered manufacturing to barely 2 percent on average between 1997 and 1999. In comparison, the previous four years (1993–96) of the industrial boom were associated with an annual trend growth of nearly 3 percent in factory employment (table 2.18).[24] This growth should not be

22. Press Information Bureau, "Advance Estimates of National Income, 2001–02," Press Note, February 5, 2002.

23. This is based on a personal communication from the Central Statistical Organization. The national industrial classification (NIC) scheme changed from NIC 1987 to NIC 1998, effective from 1998. Therefore, disaggregated data will have to be adjusted when available to compare with our analysis in Tendulkar (2000a).

24. See table 2.3. Registered manufacturing in National Accounts corresponds to the factory manufacturing segment in our discussion above.

interpreted to mean that there were no job losses due to industrial restructuring consequent upon increased competition during 1990–97. It merely brought out what is expected during the episode of acceleration in real industrial output, that is, the new employment opportunities created far exceeded job losses from weeding out and restructuring inefficient units. The situation was reversed during the episode of growth deceleration during the period 1997–99.

Factory employment, however, accounted for merely 17 percent of total (factory plus nonfactory) manufacturing employment, which itself was just 11 percent of the total workforce in 1999. Our discussion of it was prompted by the focus of economic reforms being on the factory segment. But the question still remains about the overall employment situation in the 1990s. This can be assessed from the NSSs on employment and unemployment for 1993–94 and 1999–2000 (July–June[25]). As was noted above, this period experienced a growth boom in the first half and a growth deceleration in the second half. However, taking the entire period, the average compared with any 6-year period annual growth rate in real GDP on the average was 6.5 percent, the highest over any 7-year period in post-Independence history (table 2.3). From a comparison of the sectoral composition of the workforce in 1961, 1983, 1993–94, and 1999–2000, Sundaram and Tendulkar (2002b) found that, unlike the earlier years, the last 6 years of the 1990s' rapid growth were marked by major changes in the incremental composition of the total, as well as the female, workforce. These changes include the following positive outcomes:

- the beginning of a long-awaited absolute decline in the total, as well as the female, workforce engaged in agriculture and allied services (these are sectors with lower than average productivity per worker at the national level);
- an increase in rural nonfarm (mostly manufacturing) employment, with higher average productivity per worker than workers in agriculture and related activities;
- an absolute decline in employment in the grossly overstaffed and mostly unproductive bureaucracy, public-sector undertakings, as also in mostly unskilled and low-productivity community and personal services; and
- an increase in skilled educational and health workers, as well as those in transportation and construction services.

25. The survey periods of the NSSs referred here spanned the 12-month period from July 1 to June 30 (which coincides with the seasonal agricultural cycle and hence is commonly referred to as agricultural year) and differs from the fiscal year (April 1–March 31) or calendar year (January 1 to December 31). An earlier NSS had the calendar year as the survey period.

In labor market outcomes, there was a healthy annual growth of nearly 3 percent in real daily wage rates, both in rural and urban areas. The NSSs cover all workers, that is, those engaged in formal as well as informal or unorganized activities—the latter accounting for 90 percent of total workers. Consequently, growth in real daily wage rates is representative of the numerically dominant workers in informal economic activities. Given that the real wage rate growth is a joint consequence of a rise in demand for work and a rise in productivity, this healthy growth clearly reflects a welcome tightening of the rural as well as urban labor markets. K. Sundaram[26] shows that the real wage growth was strong enough to offset a reduction in the number of days worked per worker per year (for males) as well as a decline in the worker-population ratio across all the age groups. Thus, average *annual* wage earnings grew in real terms for the rural and the urban workforces separately. An extension of this exercise (Sundaram and Tendulkar 2002b) exclusively to agricultural laborers leaves the conclusion broadly unchanged.

There was distinct improvement, then, not only on average for rural and urban workers but also for the most vulnerable segment of agricultural laborers. The conclusion is an unambiguous one: overall improvement in the employment situation, even though there was a reduction in factory employment in 1998 and 1999 (as was noted above).

The discussion about trends in poverty in the postreform 1990s has been plagued by problems of comparability in NSS data on consumer expenditure, on which poverty estimates are based for 1993–94 and 1999–2000.[27] After suggesting an empirical resolution of problems of comparability in NSS, Sundaram and Tendulkar (2002b) conclude that there was more than an average 1 percent a year decline in poverty (head count ratio) between the years 1993–94 and 1999–2000 and that this was faster than that in the previous decade before reform.

The last 6 years of the 1990s thus present a mutually consistent picture of *rapid growth, an improvement in overall employment, and a reduction in poverty*. In view of these three crucial aggregate indicators, the reforms—including the increasing integration of India with the world economy—seem to have paid off.

26. K. Sundaram, "Employment-Unemployment Situation in the Nineties: Some Results from NSS 55th Round Survey," *Economic and Political Weekly* 35, no. 32 (August 11, 2001): 931–41; "Employment and Poverty in 1990s: Further Results from the NSS 55th Round Employment-Unemployment Survey, 1999–2000," *Economic and Political Weekly* 35, no. 11 (March 17, 2001): 3039–49.

27. Abhijit Sen, "Estimates of Consumer Expenditure and Its Distribution: Statistical Priorities After the NSS 55th Round," *Economic and Political Weekly* (December 16, 2000): 4499–518.