

Trends in Agricultural Investment

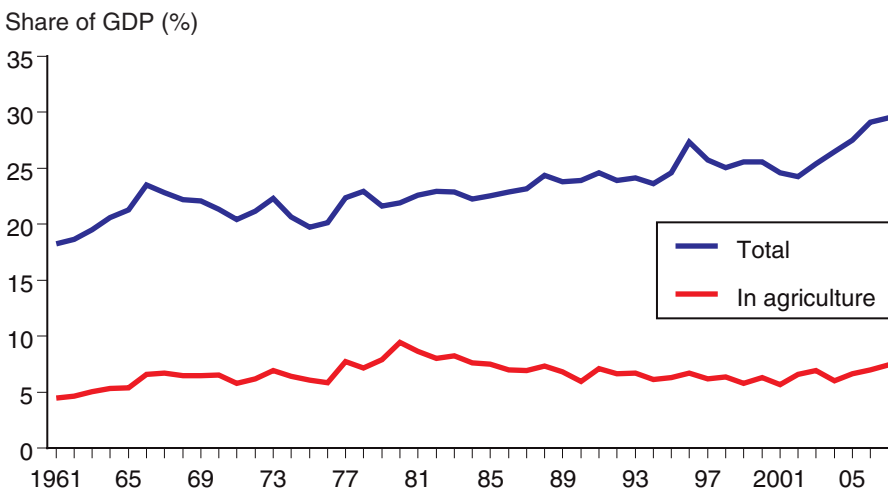
Output and investment in Indian agriculture have not been showing the same robust growth as in the overall economy. For the economy as a whole, real growth in gross domestic product (GDP) and in investment—as captured by gross fixed capital formation (GFCF)—have both been strengthening, particularly since the early 1990s (table 1). In agriculture, however, output growth has been slowing, and investment has continued to lag that in the overall economy. The annual share of GDP that is invested in GFCF averaged a robust 27 percent for the overall economy during 2005-07; by contrast, GFCF in agriculture was only about 7 percent of agricultural GDP during the same period. And while the rate of investment in the overall economy has continued to rise, the rate of investment in agriculture generally declined through 2000 before turning up slightly during 2000-07 (fig. 1).

Although overall agricultural investment in India is low and growing slowly compared with investment in the rest of the economy, some categories of investment have shown signs of growth. Among these are investments in agriculture-related infrastructure and services, and in investment by the private as opposed to the public sector.

Investment “In” and “For” Agriculture

The data on capital formation in agriculture (shown in table 1) include primarily onfarm investment in construction, farm equipment, irrigation, and other land improvements. Omitted from these accounts are investments in off-farm agriculture-related infrastructure such as markets, storage facilities, rural roads, and rural electrification. Trends in these off-farm investments—termed investments “for” agriculture—are characterized in table 2 (Ministry of Agriculture, 2003). These data, which are available only through 2000, show that investment for agriculture has been growing much faster than investment in agriculture, though it too lags overall investment in the economy. And investments both in and for agriculture, combined, still

Figure 1
Gross fixed capital formation in India as share of Gross Domestic Product (GDP)



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

Table 2

Growth in public and private gross fixed capital formation in and for agriculture in India

Period	GFCF in Agriculture			GFCF for Agriculture			GFCF in/for Agriculture		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
----- Growth rate (percent per year) -----									
1982-92	-4.3	5.1	1.2	-1.3	5.1	2.0	-2.5	5.2	1.6
1992-99	-0.3	2.4	1.7	1.3	3.0	2.7	0.8	3.5	2.3
1992-97	1.3	2.4	2.0	1.7	3.4	3.2	1.5	4.2	2.8
1997-99	-4.0	2.6	0.7	0.4	2.2	1.3	-1.1	1.8	1.1
<i>Shares of agricultural GDP (percent)</i>									
1981-83 avg.	4.3	4.0	8.3	6.0	4.7	10.7	10.3	8.6	19.0
1991-93 avg.	2.0	4.8	6.8	3.8	5.7	9.5	5.9	10.4	16.3
1996-98 avg.	1.8	4.5	6.4	3.5	5.9	9.4	5.4	10.4	15.8
1998-00 avg.	1.6	4.5	6.1	3.4	5.8	9.1	5.0	10.3	15.3

Source: Government of India, Ministry of Agriculture, Directorate of Economics and Statistics, 2003.

represent a small share of agricultural GDP—about 15 percent during 1998-2000—compared with the 26-percent share of investment in the overall economy during that period.

Agricultural Investment in India Compared With Other Countries

Comparing agricultural investment across countries is complicated by limited availability of data and by differences in definitions and methods used to report data. Some data are available for China and Brazil which, like India, are large developing economies with large agricultural sectors. Both China (using a narrow definition of agricultural investment) and India (using either a narrow or broad definition) have substantially lower rates of investment in agriculture than in the overall economy (table 3). By contrast, in Brazil, where the data employ a broad definition of agricultural investment, the rate of agricultural investment is substantially higher than for the economy as a whole.

Table 3

Comparisons of total and agricultural investment in Brazil, China, and India

Country/year	Total	Agriculture
<i>Percent of GDP</i>		
Brazil (2001-03 average)	16.2	48.4 ¹
China (2003-05 average)	42.8	9.6 ²
India (1998-00 average)	25.7	15.3 ¹
India (2003-05 average)	27.3	6.6 ²

¹ Includes onfarm and rural infrastructure investment.

² Includes primarily onfarm investments.

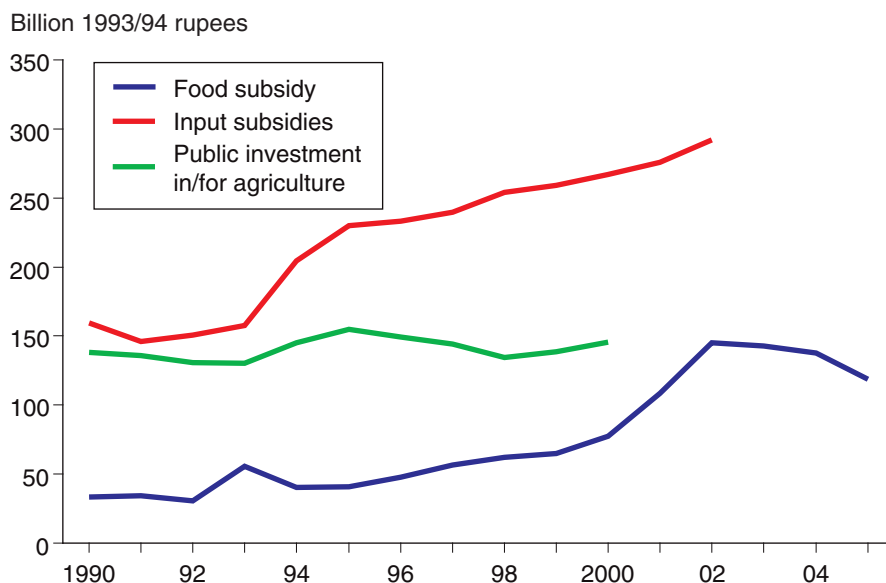
Sources: Banco Central do Brasil; National Bureau of Statistics of China; Reserve Bank of India; Government of India, Ministry of Agriculture, Directorate of Economics and Statistics, 2003.

Agricultural investment averaged 9.6 percent of agricultural GDP in China during 2003-2005. The Chinese data are based on a definition of investment that compares most closely with investment “in” agriculture in India, which averaged 6.6 percent during the same period. Brazilian data, which include investment in rural infrastructure and agribusiness, show investment in agriculture averaging 48 percent of agricultural GDP during 2001-2003 (table 3). By comparison, Indian investment “in” and “for” agriculture, the broadest measure available for India, averaged 15.3 percent of agricultural GDP during 1998-2000, the most recent period for which data are available. While these comparisons suggest that agricultural investment in India is low compared with two other large, developing agricultural countries, definitional differences in the data make it difficult to draw firm conclusions.

Public and Private Investment

Public investment in and for agriculture has averaged roughly half the size of private investment, and grew much more slowly than private investment during both the 1980s and 1990s (table 2). Public investment in agriculture actually declined during the 1980s and showed little growth in the 1990s. Weak public investment in agriculture has corresponded with rapid expansion of public expenditures on price subsidies for the sector (fig. 2), including price supports and subsidized storage and distribution for wheat and rice (the so-called “food grain subsidy”), as well as price subsidies for electricity, irrigation water, and fertilizer (Srinivasan et al., 2007; Landes and Gulati, 2004). No explicit link is apparent between the divergent trends in public outlays on investments versus subsidies in agriculture. However, public investment in irrigation—the major category of public investment in agriculture—has been declining since the mid-1990s. During the same period, political pressure has grown to compensate farmers for rising costs and price instability through input and output price subsidies (Landes and Gulati, 2004).

Figure 2
Public investment and subsidies in Indian agriculture

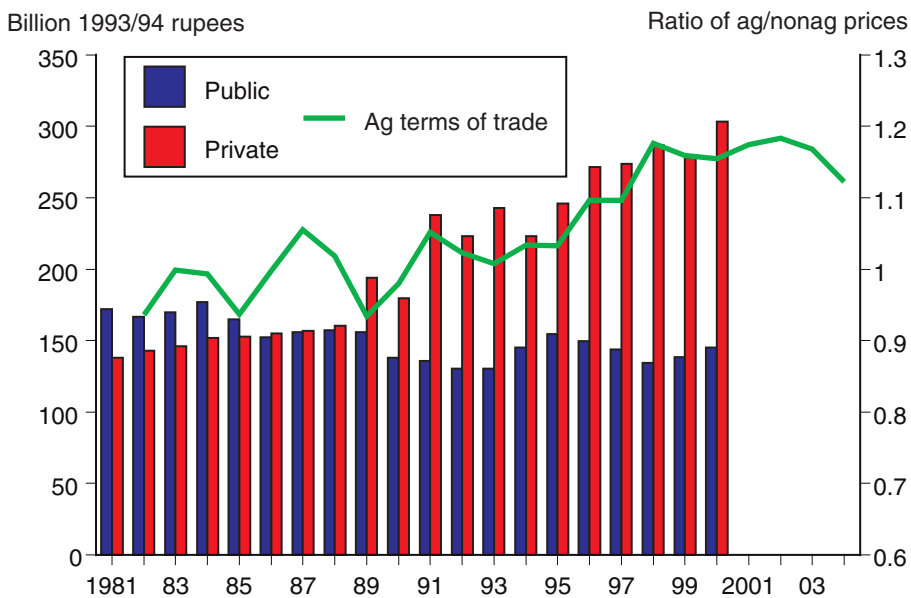


Source: Government of India, Ministry of Agriculture, Directorate of Economics and Statistics, 2003; Government of India, Ministry of Finance, Economic Survey; Mullen, Orden, and Gulatia, 2006.

Studies of investment in Indian agriculture (Chand, 2000; Chand and Kumar, 2004) found that changes in private investment between the early 1980s and the mid-1990s could be explained by the availability of institutional credit for agriculture and improvements in the barter terms of trade—or the ratio of prices received to prices paid—for agriculture. While a significant complementary relationship between public and private investment was evident during the 1960s and 1970s, no such evidence exists since the early 1980s. Further, state-by-state analysis revealed a highly significant positive relationship between private investment and both agricultural output and productivity growth nationally and in most States. Overall, the evidence suggests that since the early 1980s, public investment in agriculture has been less important to overall investment in the sector—and to growth in output and productivity—than has the environment for private investment, defined as profitability and credit availability compared to other sectors.

More recent data indicate that improving terms of trade for agriculture—as determined by the ratio of agricultural product prices to prices of manufactured and other nonagricultural goods—may have been an important factor in expanding private investment in and for agriculture through the end of the 1990s (fig. 3). Improvements in the agricultural terms of trade during the 1990s were driven by two key factors (Landes and Gulati, 2004). First, liberalizing reforms to industrial and manufacturing sector policies in the early 1990s led to declining real prices for many nonagricultural goods. Second, agricultural commodity prices tended to strengthen during the late 1990s when the Government implemented large increases in support prices for wheat and rice—India’s major farm products and food staples (Srinivasan et al., 2007).

Figure 3
**Public and private gross fixed capital formation
 in and for Indian agriculture**

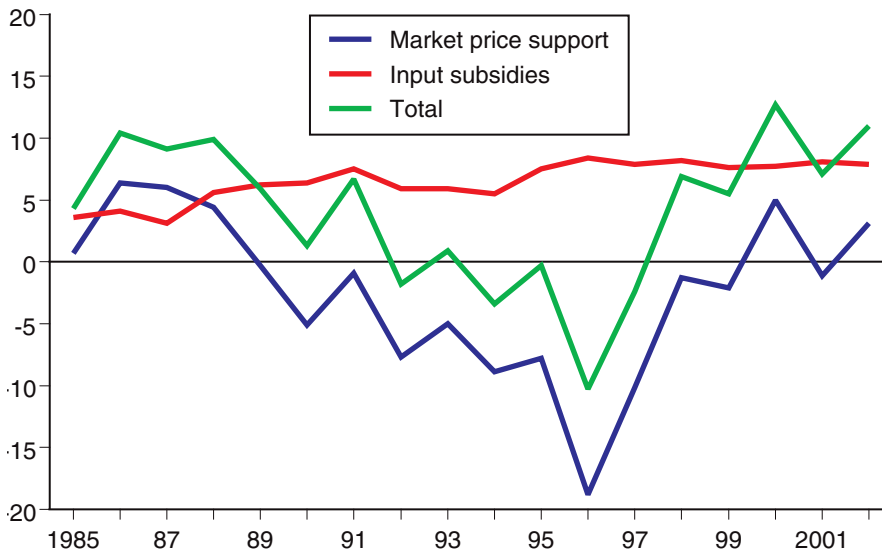


Source: Government of India, Ministry of Agriculture, Directorate of Economics and Statistics, 2003; Government of India, Ministry of Finance, Economic Survey.

Figure 4

Producer support estimates for India

Percent of output



Source: Mullen, Orden, and Gulati, 2004.

Strengthening terms of trade for agriculture are also reflected in producer support estimates (PSEs) for Indian agriculture (fig. 4). These estimates, which account for input subsidies and policy-induced differentials between domestic and international reference prices (termed market price support), indicate that India transitioned from taxing agriculture during the early and mid-1990s to supporting it during 1997-2002. This trend was driven by steadily increasing support of farmers through input subsidies and, particularly, by substantial increases in market price support in the late 1990s.

Increased producer support and strengthening terms of trade for agriculture suggest improved incentives for private investment by farmers and agribusinesses during the late 1990s and early 2000s. Although the most recent available data on the terms of trade for agriculture indicate some weakening during 2004-2005, more recent increases in world and domestic agricultural commodity prices have likely sustained price incentives for domestic producers.

Foreign Direct Investment

Prior to 1991, foreign direct investment (FDI) was negligible in the Indian economy because of highly restrictive policies regarding the permissible types of projects and foreign ownership shares, and the repatriation of earnings. In 1991, the Government began to liberalize FDI policies, initially giving automatic approval for up to 51 percent foreign ownership in 34 industries, including food processing, but with continued restrictions on imports and earnings repatriation.

FDI began to flow into India immediately following the 1991 reforms, growing about 36 percent annually in real terms between 1990-92 and 2003-05, but with only small amounts flowing into agriculture. Overall FDI growth has been aided by the implementation of additional reforms that

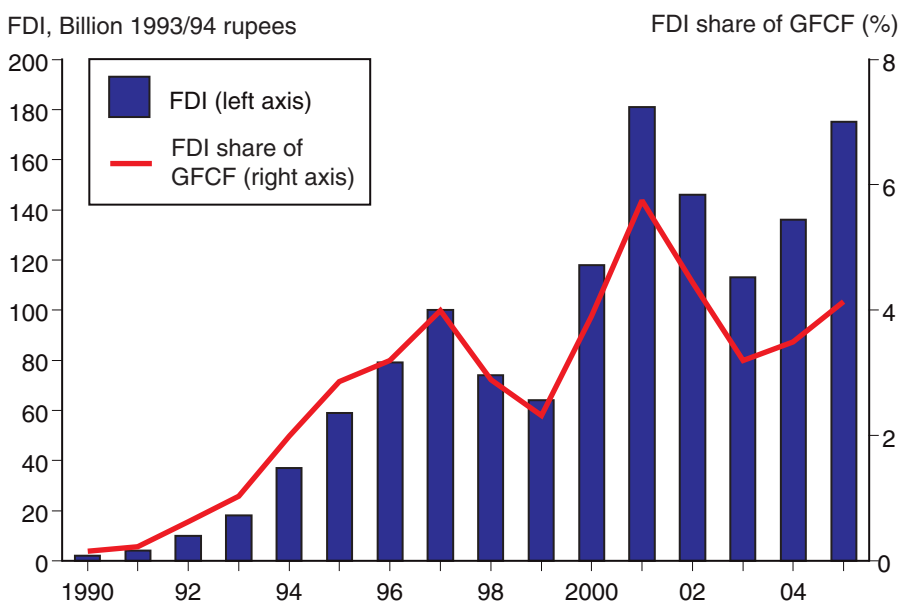
have further eased the approval process, increased permissible sectors and foreign ownership shares, and loosened foreign exchange balancing restrictions. Still, FDI continues to make only a small contribution to annual fixed capital formation in India—now averaging about 4 percent (fig. 5).

Although many agricultural sectors have been open to FDI since the early 1990s, FDI in Indian agriculture has not been significant. Leading sectors for FDI in India have been electrical equipment (17 percent of total FDI during 1991-2006), telecommunications (11 percent), transport (10 percent), services (9 percent), and power/petroleum refining (8 percent). Of the \$38.9 billion in total FDI inflows during 1991-2006, about \$1.7 billion—or 4 percent—has been in industries that can be identified as specific to agriculture. Food processing accounted for \$1.2 billion of FDI, with agricultural machinery (\$166 million), timber products (\$107 million), and fertilizers (\$78 million) accounting for most of the remainder. Some additional FDI that is classified in general activities, such as trading and services, might also be attributed to the agricultural sector.

Sources of Foreign Direct Investment

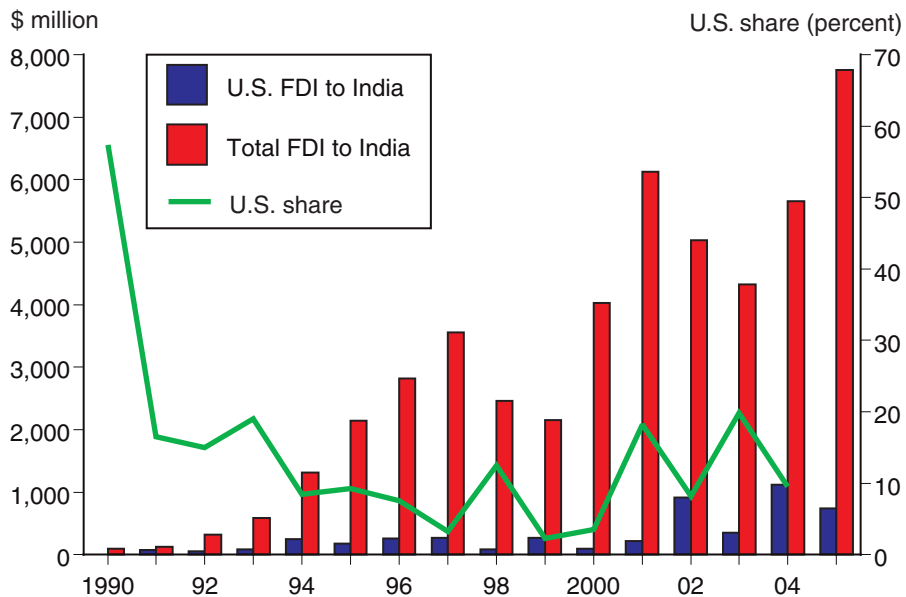
The United States has been the second largest single-country source of FDI in India, accounting for about 15 percent of Indian FDI during 1991-2006 (fig. 6). The largest source of FDI to India, accounting for 37 percent of the total during 1991-2006, has been the island nation of Mauritius. A bilateral double taxation treaty affords favorable treatment to funds that move through Mauritius, a situation that likely disguises the true origin of much of the FDI flows to India. Other major sources are the European Union, collectively accounting for about 24 percent of FDI into India during 1991-2006, and the countries of East Asia (13 percent).

Figure 5
Foreign direct investment (FDI) in India and share of gross fixed capital formation (GFCF)



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

Figure 6
Total and U.S. foreign domestic investment (FDI) in India



Source: Reserve Bank of India, Handbook of Statistics on Indian Economy; U.S. Department of Commerce, Bureau of Economic Analysis.

Indian data on inward FDI by industry and country of origin are not available, but U.S. sources suggest that U.S. FDI in food-related industries there has been minor—about \$18 million over 1990-2005. However, data for several years are not reported in order to protect the confidentiality of the small number of firms investing.