E. Wayne Nafziger

India versus China: Economic Development Performance

During the height of the Cold War in the 1950s, the West's foreign policy community stressed the importance of the comparative long-term economic performance of China and India, the world's two most-populated countries, regarded as showcases for two opposing systems. Although moderates and radicals in China vied for control of economic policy-making, both "lines" pursued centralized socialism from liberation in 1949 through the late 1970s. In India, with the exception of 1977-79, the Congress party provided leadership from independence in 1947 through 1985. The major figures were Prime Ministers Jawaharlal Nehru (1947-64) and his daughter Indira Gandhi (1966-77 and 1980-84). They directed a mixed economy, with state ownership of strategic and much of heavy industry, but most other sectors open to private enterprise, though subject to central government planning and regulation.

The paper focuses on comparative growth indicators for the period between the early 1950s and late 1970s, and indicators of *levels* of development from the late 1970s to early 1980s. Thus these indicators generally reflect policies before China's 1978 liberalization reforms and India's late 1970s trend of reduced government regulation.

China's Policies

Following war rehabilitation, China's Communist Party, under Chairman Mao Tse-tung's leadership, centralized planning during the first five-year plan, 1953-57, expanding heavy industry investment, and developing agricultural cooperatives culminating in communes by 1958. China's slogan during the 1950s, "Learn from the Soviet Union," was also indicative of heavy dependence on it for aid. The conflict from Chinese objections to Khrushchev's revisionism resulted in Soviet advisors pulling out in mid-1960, leaving projects partially finished

and taking blueprints. Of necessity, the Chinese stressed the importance of self-reliance.

Severely declining output in 1959-61 followed in the wake of poor planning of water conservation projects, growth of communes, and decentralized making of tools, as well as drought and flood, during the Great Leap Forward, 1958-60. In reaction to the crisis, Liu Shao-ch'i, a moderate critical of Mao's policies, instituted the New Economic Policy (NEP), 1961-64, with private farm plots, financial incentives, and a stress on expertness, not ideology for managers. Liu's policies were supported by academics, administrators, managers, technicians, party officials, civil servants, and state enterprise directors. This liberalization contributed to rapid economic growth in 1961-66.

Mao undertook a counterattack, 1960-64 to prevent market socialism from taking over Chinese culture. He stressed learning from the radical, cohesive People's Liberation Army (PLA), an integral part of economic construction.

The Cultural Revolution began in mid-1966 during a power struggle within the Beijing party, *Beijing Review,* and Beijing University. Students who could not reconcile socialism with their education dismissed the university's president, and led a revolt of Red Guards which spread to other schools. Mao used the revolt to undermine pragmatists opposed to a continuing class struggle against the encrusted bureaucracy and upper classes. The Cultural Revolution disrupted production during the first two years. It lasted through 1976, radically changing political leadership, education, and factory management.

Soon after Mao's death in 1976, the new leadership purged the radical "Gang of Four" and its followers, restoring pragmatist Deng Xiaopeng to leadership. Reforms after 1978 relied more on individual initiative, price decontrol, decentralized decisions, revenue sharing with provinces, financial incentives, Chinese-foreign joint ventures, and higher urban wages.

India's Policies

Intellectuals and nationalist leaders, especially in the Indian National Congress, believed that laissez-faire capitalism during the colonial period was responsible for India's stagnation. Decades before he took office, Nehru had been attracted by English democratic socialism as well as Soviet industrial planning. He and other leaders supported state economic planning at independence to remove deep-seated obstacles.

India's policy fluctuations during the Nehru-Indira Gandhi period were less abrupt than China's. The Indian constitution directs the state

to promote social justice and improve income and wealth distribution. Accordingly, the Congress party in 1955, though envisioning a mixed economy, set a goal of a "socialist pattern of society." The Nehru-Indira Gandhi model also included state direction through indicative planning; self-sufficiency in consumer goods and basic commodities; minimal reliance on foreign investment; policy intervention to reduce poverty gradually; and (beginning in the 1960s) new seed-fertilizer technology in agriculture.

Yet planning emphases did change. The first five-year plan, 1951/52-1955/56, was only a collection of projects, rather than an integrated plan.

The Mahalanobis model, used for the second plan, 1956/57-1960/61, aimed at rapid industrialization by modifying the Fel'dman model used by the Soviets in the mid-1920s. The driving force was increasing investment in "machines to make machines," through raising the fraction of investment in steel and other capital goods. But the model left investment choice virtually unaffected, since Indian planning does not represent a binding commitment by a public department to spend funds. Moreover, it was difficult to identify capital- and consumer-goods sectors at any reasonable level of disaggregation. Finally, there were not enough investors ready to buy the capital goods produced. In contrast, in the Soviet Union, comprehensive government planning provided the market for capital goods from other industries producing capital goods and armaments.

The third plan, 1961/62-1965/66, tried to continue expanding heavy industry, increase savings, promote exports, and achieve agricultural self-sufficiency, but failed partly because of India's conflicts with China and Pakistan. Annual real per capita gross domestic product (GDP) growth, less than ½%, was even slower than the roughly 2% annual growth for the first two plans. India abandoned the Mahalanobis approach by the late 1960s, because of slow agricultural and capital-goods growth, and balance-of-payments crises from growing food and capital imports, during the second and third plans.

Despite two bad harvests, the plan holiday, 1966-69 increased economic growth to slightly higher rates than the first two plans. During the fourth plan, 1969/70-1973/74, which stressed reducing poverty and inequality, and greater food self-sufficiency, growth slowed to third-plan rates. Despite the impact of high-yielding varieties of wheat after the late 1960s green revolution, agricultural output per capita grew less than 1% yearly. Income inequality and poverty rates, which most studies indicated increased during the 1960s, continued to rise through the mid-1970s.

While the fifth plan, 1974/75-78/79, continued the goals of the previous plan, with more emphasis on reducing unemployment, there were few employment programs. The oil price rise, worldwide inflation, and increased food imports in 1972-74 hampered growth (no faster than in the fourth plan) and self-reliance gains. The plan, terminated in 1978 with Indira Gandhi's party's election defeat, was followed by a sixth plan, 1978-83. The policies of the opposition Janata Party government, 1977-79, were not greatly different from the Congress's. Janata continued the trend of reduced government industrial regulation begun in the mid-1970s, and maintained by Indira Gandhi (1979-84) and by her son, Prime Minister Rajiv Gandhi, after she was assassinated in 1984 (Datt and Sunharam, 1983; Nafziger, 1984, pp. 294-296). Per capita annual growth during the sixth plan, extended to 1985 by Indira Gandhi, was more rapid than for any other plan period.

Development Indicators Used

To assess India's mixed democratic socialism vis-a-vis China's centralized authoritarian socialism, I use gross national product (GNP) per capita and its growth; income equality, poverty alleviation, and their trends; hunger alleviation and per capita food output growth; literacy and education; life expectancy; and infant survival.

GNP Per Capita

GNP is an economy's total output of goods and services. The World Bank (1983, 3 vols.) focuses on comparisons among India, China, and other less developed countries (LDCs), rather than a wider range of comparison; adjusts for purchasing power; and discusses its methods in detail.

Table 1 indicates that China has a 1979 nominal GNP per capita of $256, higher than India's $190. Both countries are classified as low-income countries, a category including some South and Southeast Asian and sub-Saharan African countries.

Real GNP Per Capita

Using market prices valued at official exchange rates to measure GNP distorts international comparisons of GNP per capita (see Nafziger, 1984, pp. 23-25). The UN International Comparison Project (ICP) calculates the physical volume of goods and services in 150 categories of final products at average world prices to obtain GNP in international adjusted dollars (I$). GNP (I$) divided by nominal GNP (US$) converted at exchange rates equals the exchange rate deviation

TABLE 1
Real Gross National Product Per Capita, 1979
(adjusted for purchasing power)

	GNP per capita based on official exchange rates, 1979 (US$)[a]	Exchange rate deviation index, 1973[b]	Real GNP per capita (I$) 1979[c]
India	190	3.06	581
China	256	3.06	783
Kenya	380	2.06	783
Philippines	600	2.91	1,746
Malaysia	1,320	1.86	2,455
Colombia	1,010	2.51	2,535
South Korea	1,500	2.47	3,705
Japan	8,800	1.06	9,328
France	9,940	0.99	9,840
United States	10,820	1.00	10,820

[a] World Bank, 1980a; and World Bank, 1983, I, 77.

[b] World Bank, 1983, I, 75-78, 263-300. Exchange rate deviation index is from the UN International Comparison Project.

[c] Column I multiplied by column 2.

index (ERD), reflecting the deviation of purchasing power of goods and services from the actual exchange rates. The ICP figures ERDs for 1967, 1970, 1973, 1975, and 1980. The last two ICP phases include 34 benchmark countries, for which detailed price and output comparisons were made for numerous goods and services, and 90 nonbenchmark countries, for which purchasing-power adjustments were based on a short-cut equation (Kravis, Heston, and Summers, 1983).

India's 1979 nominal GNP per capita, $190, when multiplied by its ERD of 3.06, equals I$581) (table 1). For the United States, the base country, both nominal and real 1979 GNPs per capita were $10,820. US GNP per capita as a multiple of India's was 57 in nominal terms, but only 19 in real terms. US per capita expenditure on food was almost 11 times India's, but only 6 times with purchasing power adjustments. For staples like bread, rice, and cereals, US per capita consumption was twice India's, but only 1 ½ times as much with the adjustment (Kravis, Heston, and Summers, 1978, pp. 204-205).

The ICP's 1967-1975 purchasing power adjustment did not include China, and the 1980 estimate for China was flawed (Lardy and Rawski, in Kravis, 1981, pp. 60-78). Thus, I rely on the World Bank's comparison (1983, I, 78, 263-300) of ERDs for India and China. Since

internal price data are short for China, the World Bank valued GNP originating in each sector in China at prices for that output in India. The sum of the prices times quantities for sectors in China was compared to the same sum for India (using its prices).

China's GNP vis-a-vis India's is overstated if India's prices are used; and India's GNP overstated with China's prices. Valuation by own prices results in lower GNP because the set of own quantities adapts to these prices (Usher, 1968). Assume that spices are relatively abundant in India, and pork in China. Then, spices will be valued at relatively low prices and pork at relatively high prices in India, and vice versa in China. India's abundant spices weigh little in GNP at own prices, but heavily at Chinese prices. Thus, the World Bank adjusts India's GNP upward vis-a-vis China's to compensate for biases from using Indian internal prices. The Bank calculates that China's ERD was about the same as India's. Hence, China's 1979 GNP per capita in internationally adjusted dollars (783) relative to India's ($581) was about the same as the relative per capita GNPs based on official exchange rates. China's real GNP per capita was 35% higher than India's (20-50% with the margin of error) (table 1).

Growth of Real GNP Per Capita, 1950-80

My Sino-Indian growth comparisons begin in 1950, the year of India's partial recovery from the disruption of the 1947 Indian-Pakistani partition. The source, Malenbaum (1984, pp. 194-195, 222), relies on the Government of India's GNP series, and the National Foreign Assessment Center, the research arm of the US Central Intelligence Agency (CIA), for China's GNP, since both sources adhere to UN Statistical Office's concepts. China's official data are inadequate, as it has only published summary measures of net material product (excluding depreciation and services production) for plan years in the early 1950s.

For both countries, GNP figures, measured in national currencies, are in constant prices of a base year used extensively in each country: 1970-71, India, and 1957, China. We can compare growth without using a common currency.

A sector's value of output depends on the price weights of the base year selected. But, to illustrate, China's 1957 prices would not overstate the crude-oil sector in 1969 GNP as much as 1974 prices, while India's 1970-71 prices would not exaggerate the importance of the machine-tool industry in 1980 GNP as much as 1950 prices.

Table 2 indicates India's annual real GNP growth, 1950-80, was 3.6% compared to China's 6.7%. Annual population growth rates of

2.1% over the same period for both countries result in an annual real GNP per capita growth of 1.5% for India, much slower than average, and 4.5% for China, faster than average among LDCs. Among LDCs with a population of at least 5 million, only Taiwan, South Korea, and (then) capital-surplus oil exporters Iraq and Iran had a 1950-1975 real annual GNP growth rate in excess of China's 4.2 percent (Morawetz, 1977, pp. 15).

The major sector contributing to China's rapid GNP growth was industry. China's annual growth in industry's value-added, 1952-75, was 10.2% (11.0%, 1952-80) in 1957 constant yuan prices, compared to India's 5.3 yearly growth the same period (5.5%, 1952-80) in 1970-71 constant rupee prices. However, China's services output growth advantage over India was small and its agricultural growth about the same as India's.

China's fast growth, especially in industry, rapidly transformed a predominantly agricultural economy to one whose largest sector was industry. Industry's output share increased from 20% of China's net domestic product in 1952 to 48% in 1975 (55% in 1980), while agriculture's share declined from 48% in 1952 to 21% in 1975 (19% in 1980). India's industrial share only increased from 14% in 1952 to 21% in 1975 (24% in 1980), while its agricultural share declined slowly from 61% in 1952 to 47% in 1975 (42% in 1980). However, because of China's policies of high agricultural labor absorption and restricted rural-urban migration, its shift from agriculture to industry in labor force shares was only slightly faster than India's (Malenbaum, 1984, pp. 200-205).

TABLE 2
Average Annual Rates of Real Growth of GNP and GNP per Capita by Decade

	GNP (%)		GNP per capita (%)	
	India	China	India	China
1950-60	3.8	7.9	1.8	5.6
1960-70	3.7	5.6	1.3	3.3
1970-80	3.3	6.7	1.3	4.6
1950-80	3.6	6.7	1.5	4.5

Source: Malenbaum, 1984, p. 197.

If we use table 2's long-term rates to project China's 1979 nominal GNP per capita, $256, and India's $190 backwards, China's 1950 GNP per capital ($71) is 42% lower than India's ($123). Even though China

was recovering from two decades of war (internal and with the Japanese), its average GNP could not have been that much lower than India's, only a little above subsistence.

Malenbaum's figures, based on 1957 constant prices, overstate China's annual real growth rate, 1950-80. Unusually high relative industrial prices for the base year, 1957, if applied to later years of greater industrialization, exaggerate industrial and total output for 1980.

When the World Bank (1983, I, 77) uses 1979 internal prices instead, China's long-term growth rate decreases by 23%, from 4.5% annually (table 2) to 3.5%. If this growth is applied backward, China's 1950 GNP per capita is $94, 24% less than India's. This difference is consistent with Swamy's (1973) and Eckstein's (1975, p. 214) estimates. Since China had been through two decades of war, this figure is plausible, and does not contradict the widely held view that China's average material welfare in the 1920s and 1930s, when economic damage was less, was higher than India's.

But China's 1950-1980 annual growth rate, even if assumed only 3.5%, is faster than other LDCs' rate, 3.0%. In fact, China's rate, if maintained, would multiply income 31 times a century, an increase almost as fast as the fastest DC growth rate, Japan's, 3.6% yearly, between the 1860s and 1975 (Morawetz, 1975, pp. 11, 80; Nafziger, 1984, pp. 66, 72; World Bank, 1985, pp. 148-175).

Income Inequality

Economic growth probably cannot solve the problem of widespread poverty, unless attention is given to how income is distributed. The Gini coefficient measuring 1979 regional inequality in income per capita was slightly lower in India (0.168) than in China (0.181). However, since the 1950s, China's regional discrepancies narrowed with deliberate policies to restrain growth in the northeastern industrial centers, while India's differences increased because of disproportional investment in the wealthier states (Datt and Sundharam, 1983, pp. 362-63; World Bank, 1983, I, 84).

Because of the marked interprovincial differences in Chinese agricultural incomes, rural-urban inequality varied widely from province to province. Overall China's urban-rural income ratio was comparable to that of India's — higher on a per capita basis — 2.2 to 1.9, but lower on a household basis — 1.7 to 1.8 (table 3).

But China's urban-rural discrepancy increased while India's decreased from the 1950s to the 1970s. China's urban per capita real income growth, 1957-79, was 2.9% yearly compared to rural growth of 1.6%. In contrast, India's per capita real consumption growth (which

TABLE 3
International Comparison of Rural-Urban Inequality

	Ratio of average urban income to average rural income	
	Per capita	Per household
India, 1975/76	1.9	1.8
China, 1979	2.2	1.7
Bangladesh, 1966/67	n.a.	1.5
Sri Lanka	n.a.	1.7
Indonesia, 1976	n.a.	2.1
Malaysia (Pen.), 1970	2.2	2.1
Philippines, 1971	n.a.	2.3
Thailand, 1975/76	2.2	n.a.
Brazil, 1976	2.3	n.a.

Source: World Bank, 1983, I, 86.

moves parallel to income growth), 1950/51-1954/55 through 1975/76-1979/80 was only 0.0% annually in urban areas compared to 1.4% in rural areas (World Bank, 1983, I, 85/87, 276, 309; Rao, 1983, pp. 82-83).

China's allocation, pricing, and tax policies have been characterized by urban bias, and India's, despite Lipton's opposing contention (1977), by rural bias. Since 1947, India's democratic government, under pressure from landed elites and an agrarian majority, has levied no income tax on agriculture, virtually abandoned land taxation, spent much on irrigation and other agricultural projects, and provided substantial farm credit, the major contributor to a net resource inflow to agriculture since independence (Mody, Mundle, and Raj, 1985, pp. 266-293).

India did not restrict migration to the cities, while China directly controlled it, sending many wartime urban emigrants back to the countryside during the 1950s, and city youth to "learn from the peasants" during the Cultural Revolution. Despite China's low urban wage policy, India was more successful in narrowing urban-rural wage differences, because it allowed migration from low-wage rural to higher-wage urban areas. Partly because of restricted rural-urban migration, Chinese agricultural output per worker rose very little over the period. Moreover, urban labor force participation rates increased rapidly (from 33% in 1957 to 55% in 1979). Other factors contributing to China's increasing income gap were high income supports, higher-quality educational and health facilities, and low rents in urban areas,

and low agricultural procurement prices, which kept the urban price of necessities low (World Bank, 1983, I, 85-87).

China's faster overall growth meant that its income per capita increased more rapidly in both urban and rural areas, even though the urban-rural gap widened. Despite China's urban-rural differential in health facilities and school opportunities, these were so much more widely available in China than in India (see below) that China's rural areas were better served than India's.

Chinese urban inequality, 1980, is extraordinarily low (Gini = 0.16), while India's (1975/76) is moderate (0.42). The poorest 40% of the urban population received 30.0% of the income in China, compared to only 16.9% in India, while China's richest 10% received only 15.8% to India's 34.1% (table 4). China's low urban inequality resulted from no private property income, no income from self-employment (until 1979), and the comparatively equal distribution of wages and salaries, with managerial, professional, and technical salaries much lower than in India. But wage differences among manual workers were not much different from India, even though she had a higher proportion of rural emigrants (Ibid., I, 88-89).

Because of China's rationing, and low price of necessities relative to luxuries, its real consumption distribution was more equal than its income distribution, and contrasted with India's, with less extensive programs to improve consumer distribution (Ibid., I, 89).

TABLE 4
International Comparison of Urban Income Inequality

	Income share of recipient groups			
	Poorest 40%	Richest 20%	Richest 10%	Gini coefficient
India, 1975/76	16.9	48.8	34.1	0.42
China, 1980	30.0	28.2	15.8	0.16
Bangladesh, 1966/67*	17.1	47.2	31.5	0.40
Pakistan, 1970/71*	19.1	44.4	29.7	0.36
Sri Lanka, 1969/70*	16.3	47.5	31.7	0.41
Indonesia, 1976*	16.0	49.4	34.5	0.43
Malaysia (Pen.), 1970	11.2	56.5	40.3	0.52
Philippines, 1971*	13.7	54.1	35.3	0.47
Thailand, 1975/76*	17.5	46.6	32.2	0.40

* Distribution by households ranked by total household income, not of people ranked by household per capita income.

Source: World Bank, 1983, 1, 89.

China's rural income inequality (Gini 0.31) was lower than India's (0.34) (table 5).

After China's revolution, land reform and collectivization reduced rural inequality substantially. No one owned land and capital, and their returns have been distributed among production team members. But sources of inequality include differences between teams in quantity and quality of land per person, variations in labor participation rates per household, and restrictions on urban migration to reduce rural poverty and inequality.

India's land reform was not effective, because of the absence of up-to-date land records, the difficulty of verifying ownership rights, and conflict with powerful landed interests in the legislatures and bureaucracies. Federal and state laws frequently had deliberate exemptions or loopholes inducing fictitious land transfer to relatives or concealing ownership through reclassifying lands under exempted categories. Thus, land concentration remained high. By 1970, only 0.3% of the total cultivated land had been distributed under legislation. Moreover, large moneylenders, farmers, and traders often controlled village cooperatives, and utilized most of the credit and services provided by community development programs (Bardhan, 1974, pp. 255-262).

Chinese data undervalue income in kind, household earnings variations within production teams, and private farm and handicraft activity. But even if we adjusted for these, Chinese rural inequality was still no higher than India's (table 5) (World Bank, I, 90-92).

Although China's urban and rural inequalities are low, its overall inequality was not much lower than India's, because of China's relatively large urban-rural gap. In China, urban people were only 13% of the population, but constituted about half of the richest 20% of the population. The poorest half of China's population was virtually all rural. The 22% of India's urban population constituted less than half of the country's richest 20% of the population, although the rural share of the poorest half probably did not vary much from China.

Overall income distribution in China (Gini = 0.33) was more equal than India (0.38), which has less equality than Bangladesh (0.34), but greater equality than Thailand, Indonesia, the Philippines, and Malaysia (see table 6). China's equality was about the same as Sri Lanka's, but probably less than Taiwan's or South Korea's. Jain (1975) indicates that Taiwan's and South Korea's ratio of incomes of the richest fifth to the poorest fifth was 5:1, India's 11:1, the Philippines' 14:1, Mexico's 15:1, and Brazil's and South Africa's 25:1, but he has no figure for China. Eberstadt (1979a) estimates a 9:1 ratio for China as comparable to Jain's other figures. This ratio relative to

TABLE 5
International Comparison of Rural Income Inequality

| | Income shares of recipient groups | | | |
	Poorest 40%	Richest 20%	Richest 10%	Gini coefficient
China, 1979	20.1	39.4	22.8	0.31
India, 1975/76	20.2	42.4	27.6	0.34
Bangladesh, 1966/67*	19.9	41.7	26.1	0.33
Pakistan, 1970/71*	21.9	38.8	24.0	0.30
Sri Lanka, 1969/70*	18.6	42.5	26.4	0.35
Indonesia, 1979*	16.4	46.0	32.0	0.40
Malaysia (Pen.), 1970	12.2	54.8	39.3	0.50
Philippines, 1971*	17.3	46.7	31.7	0.39
Thailand, 1975/76	17.8	46.5	31.1	0.39

* Distribution is of households ranked by total household income, not of people ranked by household per capita income, as where no asterisk.

Source: World Bank, 1983, I, 94.

India's is the same as the relative ratios for the richest 20% to the poorest 40% between China and India in table 6.

Since Chinese government policy before 1979 insured that food, clothing, housing, medical care, and schooling were distributed in a relatively egalitarian way, income distribution figures may understate equality. On the other hand, there are inadequacies in rural income distribution stated above that overstate equality. If we adjusted incomes for these distortions, China's rankings vis-a-vis India and other LDCs would probably not be changed.

Poverty

Absolute poverty is below the income that secures the bare essentials of food, clothing, and shelter. Determining this level is a matter of judgement, so that it is difficult to make comparisons between countries. Moreover, what is considered poverty varies according to the living standards of the time and region.

Using widely-discussed Indian standards, Ahluwalia, Carter, and Chenery (1979) define the international poverty line as the income needed to attain 2,250 calories per capita daily, a figure of I$200 per capita in 1975. Data on 1975 income distribution indicate that 46% of the Indian population was below the poverty line (or potentially undernourished). Given information on income distribution, poverty

TABLE 6
International Comparison of Overall Income Inequality

| | Income shares of recipient groups | | | |
	Poorest 40%	Richest 20%	Richest 10%	Gini coefficient
China, 1979	18.4	39.3	22.5	0.33
India, 1975/76	18.5	46.5	31.4	0.38
Bangladesh, 1966/67*	19.6	42.3	26.7	0.34
Pakistan, 1970/71*	20.6	41.5	26.8	0.33
Sri Lanka, 1969/70	20.8	41.8	27.4	0.33
Indonesia, 1976*	14.4	49.4	34.0	0.44
Malaysia (Pen.), 1973	12.5	55.1	39.8	0.50
Philippines, 1971*	14.2	54.0	38.5	0.47
Thailand, 1975/76	15.8	49.3	33.4	0.42
Yugoslavia, 1973*	18.4	40.0	22.5	0.32

* Distribution is of households ranked by total household income, not of people ranked by household per capita income, where there is no asterisk.

Source: World Bank, 1983, I, 94.

in other countries, Ahluwalia, et al. determine poverty in other countries by finding the percentage of the population from households with a 1975 income of less than I$200 per capita.[1] World Bank figures since Ahluwalia et al.'s computations provide a basis for comparable poverty rates on China. I use 1975 World bank figures on Chinese per capita GNP and yuan-US dollar exchange rates, a Chinese ERD from table 1, and the World Bank's overall Chinese income distribution from 1979 to calculate the percentage of the 1975 Chinese population from households with an income less than I$200 per capita (World Bank, 1983, I, 92-95, 267-269, 314). The poverty rate was 41% at official exchange rates, but 27% if adjusted for exchange rate deviation (see table 7). Given China's higher real GNP per capita and lower income inequality, it is not surprising that China's poverty rate was much lower than India's.

TABLE 7
Per Capita Income, Population, and Poverty, 1975

Country[a]	GNP per capita[b]			Percentage of Population in Poverty in 1975	
	At Official Exchange Rates	Using Adjustment for Purchasing Power	Population 1975 (millions)	Using Adjustment for Purchasing Power	Using Official Exchange Rates
Bangladesh	72	200	80.7	64	60
Burma	88	237	30.9	65	56
Indonesia	90	280	130.0	59	62
India	102	300	599.4	46	46
Pakistan	121	299	73.0	43	34
China	137	419	950.0	27	41
Low-income[c]	117	373	1956.3	39	45
Nigeria	176	433	75.3	35	27
Philippine	182	469	42.5	33	29
Sri Lanka	185	471	14.1	14	10
Thailand	237	584	41.6	32	23
Lower-middle[d]	206	507	255.5	31	24
South Korea	325	797	34.1	8	6
Malaysia	471	1006	12.2	12	8
Taiwan	499	1075	16.1	5	4
Brazil	509	1136	106.8	15	8
Mexico	758	1429	59.6	14	10
Upper-middle[e]	574	1213	433.5	13	8
Total	218	548	2445.3	37	40

[a] Countries are ranked in ascending order by 1975 GNP per capita. Some countries omitted in the table are used to calculate the subtotals for low-income, lower-middle, and upper-middle countries, and the LDC total.
[b] In 1970 U.S. dollars.
[c] Low-income countries are those with GNP per capita under $150.
[d] Lower-middle income countries are those with GNP per capita from $150 to $300.
[e] Upper-middle income countries are those with GNP per capita greater than $300.

Sources: Ahluwalia, Carter, and Chenery, 1979, pp. 302-303; and World Bank, 1983, I, 92, 314.

Trends in Poverty and Income Inequality

India's and China's income inequality both increased from the 1950s to the 1970s.

In India, the poor's income share dropped from the 1950s through the early 1970s, while no appreciable dent was made on absolute poverty. Poverty rates in both rural and urban areas appear to have increased throughout the 1960s and early 1970s, decreasing in the mid 1970s, and holding steadily in the late 1970s and early 1980s (Datt and Sundharam, 1983, pp. 293-296).

Despite the rapid economic growth from the late 1950s through 1977, China's poverty (and malnutrition) rates did not decline, suggesting that income inequality increased (Lardy, 1983, pp. 175-176). This inequality increased further with the early implementation of Deng's economic reforms, 1977 to 1979, even though poverty and malnutrition rates declined.

Hunger and Food Output

Mao claimed that China had succeeded in feeding a people ravished by hunger for centuries. Western scholars widely accept this view. Imfeld (1976, p. 157) maintains that "in contrast to India, China has eliminated hunger." Here we look at how China's food output, growth, and distribution, and nutritional levels compared to India's.

Lardy (1983, p. 148) indicates that China's daily per capita calorie consumption in the early 1930s was 2,125-2,225, substantially in excess of India's. China's average calorie consumption declined during the 1940s' war years, while India's was probably increasing at a moderate rate. Yet China's agricultural techniques, as well as average food output (and consumption) were substantially in excess of India's in the early 1950s.

The vagaries of weather make farm production volatile. Yet the literature abounds with growth rates based on one-year comparisons (Malenbaum, 1984, pp. 211-214). A country's record depends partly on the beginning and ending years selected. China's annual growth in foodgrain output per capita relative to India's appears favorable for 1953-1958, 1970-1972, and 1977-1980, but unfavorable for 1957-1958, 1965-1970, and 1974-1975 (see table 8, columns 3 and 7).

To avoid distortions due to weather fluctuations, I use a five-year moving average, in which foodgrain output per person in the year 1954, for instance, is computed as an average of the outputs of 1952 through 1956 (table 8, columns 4 and 8).

Table 8's foodgrain output data are comparable for either country over time, but not between countries the same year, without adjustment. Unlike India, China measures foodgrain on an unhusked basis, and includes potatoes, tubers, soybeans, peas, and beans among grains, so that Chinese output figures need to be multiplied by roughly

82% to find their Indian output equivalents (Ibid., pp. 212-213, 224; Lardy, 1983, pp. 147-50). Thus, India's 1954 foodgrain output per person, 0.171 tonnes, was 28.4% below China's, 0.239 tonnes, 0.291 times 0.82.

China's food output per person increased much during rehabilitation from war, 1950-52, and increased more slowly from 1952, a year when civil order was restored and land reform completed, to 1957, when average per capita calorie intake was 2,020 calories, still below the early 1930s level. India's growth per capita, 1950-57, was slower.

China's food production, as well as calorie consumption, per capita barely increased between 1957 and 1975, a time when India's per capita growth accelerated some (table 9), partly due to gains from the late 1960s' high-yielding varieties of wheat (Lardy, 1983, pp. 157-166; World Bank, 1983, I, 101). But China's surge in grain imports (to 4% of 1978-79 production) and agricultural output increased per capita calorie intake between 1977 and 1979 by 19% (World Bank, 1983, I, 101, 178).

Thus, as table 10 indicates, the average food consumption in China is much higher than in India. China's 1979 food energy consumption, 103% of estimated requirements, is above India's (91%), though below middle-income countries' (108%). Protein availability per person (163% of requirements) is also above that for India (135%), but below Pakistan, Mexico, and South Korea.

Using a five-year moving average, India's annual growth in foodgrain output per capita from the mid 1950s to late 1970s was slightly faster than China's. India's per capita growth, 1956-77, was 0.48 percent to China's 0.36 percent (table 9). (India's growth margin over China's was even narrower, 1954-79 and 1956-79, the five-year average for 1979 being much influenced by China's strong performance, 1979-81). India's 1979 per capita foodgrain output, 0.190 tonnes (column 4, table 8) was 28.0% below China's, 0.264 (0.322 times 0.82), only a slight narrowing of the 1954 relative gap.

China's slow foodgrain output growth resulted partly from a lack of emphasis on agricultural research and technology. Since the 1950s, Chinese agricultural institutes were isolated from international institutes, and did little basic agricultural research. During the height of the Cultural Revolution, 1966-70, some leading agricultural scientists were sent to rural areas to learn from the peasants. At about the same time, the matriculation of agricultural students was disrupted because the educational system was shut down (Howe, 1978, pp. 26-27, 81). During the late 1970s and early 1980s, Deng argued that lagging research and low-quality education in agriculture constituted the "greatest crisis" in contemporary China.

While India's record is only marginally better, its fast growth, 1965-1969, 4.2 percent annually (table 8, column 4), began during the breakthrough by the Rockefeller Foundation and the Ministry of Food and Agriculture in developing shorter and much higher-yielding varieties of wheat. These hybrids of Mexican wheat and Japanese dwarf strains, capable of absorbing much higher doses of chemical fertilizer without falling over, required greater price incentives, as well as improvements in irrigation, tubewells, credit, seed distribution, fertilizer, transport, extension, and storage, especially in the Punjab (Frankel, 1978, pp. 275-278). Because of the powerful link between individual investment and effort to income, India's commercial farmers responded more quickly to innovations than China's communes.

Yet foodgrain figures understate India's relative food consumption. Despite some members of high Hindu castes who do not eat meat for religious reasons, the Indian diet included a larger share of meat and dairy products than China's, and a smaller share of bread and cereals than China's. But China still had higher average food consumption levels than India, especially among the poorest 25 percent of the population. India's average food consumption was higher than China's, however, among the richest 25 percent of the population (Malenbaum, 1984, pp. 212-214; World Bank, 1983, I).

But a country's malnutrition was less related to average food consumption, than to how food was distributed, including the relative consumption levels of the lowest income groups. Although Brazil, a country with high food inequality, had a 1979 GNP per capita ($1,770) seven times as high as China's (World Bank, 1981, p. 22) and average nutrient availability higher than China's (table 10), it had a larger proportion of its population severely malnourished than China (Eberstadt, 1979b).

Yet China, contrary to Imfeld, did not eliminate malnutrition. Table 7's figure of 27 percent for a nutritionally-based poverty rate suggests the error of Imfeld's view. Moreover, in 1979, Beijing leaders admitted that in 1977 about 100 million people, or more than one-tenth of China's population, did not have enough to eat (Barnett, 1981, p. 305, citing Chinese Communist Party Central Committee). Though this does not define malnutrition precisely, it indicates that China's hunger rates are within the range of other LDC rates rather than close to zero, as Imfeld contends.

Gurley (1976, p. 234) indicates that "the Chinese have what is in effect an insurance policy against pestilence, famine, and other disasters."

TABLE 8
Foodgrain Output

Year	(1) Output mmt[a]	(2) Popu- lation (ms)	India (3) Output per person	(4) (3)-5 yr. moving average	(5) Output mmt	(6) Popu- lation (ms)	China (7) Output per person	(8) (7)-5 yr. moving average
1950	52.4	359	0.146			552		
1951	52.8	365	0.145			563		
1952	58.6	372	0.158	0.161	164	575	0.285	
1953	69.0	379	0.182	0.165	167	588	0.284	
1954	66.6	386	0.173	0.171	170	602	0.282	0.291
1955	66.8	393	0.170	0.171	184	615	0.299	0.295
1956	70.0	401	0.175	0.171	193	628	0.307	0.298
1957	63.3	409	0.155	0.171	195	647	0.301	0.292
1958	75.7	418	0.181	0.173	200	661.5	0.302	0.276
1959	74.1	426	0.174	0.175	170	672.5	0.253	0.260
1960	79.4	434	0.183	0.177	143.5	665.5	0.215	0.248
1961	81.3	444	0.183	0.175	147.5	650.5	0.227	
1962	75.5	454	0.166	0.171	160	661.5	0.242	
1963	78.7	464	0.170	0.164	170			
1964	72.9	474	0.154	0.158	187.5			
1965	72.3	485	0.149	0.162	194.5	725	0.268	
1966	74.2	495	0.150	0.165	214			
1967	96.0	506	0.190	0.172	218			
1968	94.9	518	0.183	0.182	209			
1969	99.5	529	0.188	0.191	211			
1970	108.4	541	0.200	0.188	240	826	0.291	
1971	106.9	554	0.193	0.187	250	848	0.295	
1972	98.2	566	0.173	0.183	240	867	0.277	0.293
1973	104.7	579	0.181	0.183	265	887	0.299	0.297
1974	99.8	591	0.169	0.180	275	904	0.304	0.299
1975	121.0	606	0.200	0.186	284.5	920	0.309	0.299
1976	111.2	620	0.179	0.190	286	933	0.307	0.307
1977	126.4	634	0.199	0.189	283	945	0.299	0.315
1978	131.9	648	0.204	0.188	305	958	0.318	0.318
1979	109.7	663	0.165	0.190	332	971	0.342	0.322
1980	129.6	678	0.191		320.6	983	0.326	
1981	133.1	693	0.192		325	996	0.326	

[a] Indian data are for 1 April of given year through 31 March of the following year. Population figures for China, 1958-1961 are Western estimates.

Sources: Perkins and Yusuf, 1984, p. 34; Lardy, 1983, p. 149; World Bank, 1983, III, 85; Kulkarni and Deshpande, compilers, 1968; India, Central Statistical Office, 1979; *Indian Economic Survey, 1982-83,* 1983; and earlier annual publications of the last two series.

TABLE 9
Annual Growth Rates in Foodgrain Output per Person

	1954-79	1956-77	1956-79	1954-77	1957-75	1954-72	1954-60
India	0.42%	0.48%	0.46%	0.44%	0.47%	0.38%	0.58%
China	0.40%	0.36%	0.44%	0.34%	0.13%	0.04%	-2.63%

Source: Calculated from five-year moving averages in columns (4) and (8), table 8.

TABLE 10
Food Availability, 1977

| | Per capita daily availability of | | | | |
| | Energy | | | Protein | |
	Calories	Percent of requirement	Total (grams)	Percent of requirement	Percent animal and pulse
India	2,021	91	50.0	136	26
China[a]	2,441	103	62.6	163	26
Low-income countries					
Bangladesh	1,812	78	36.0	100	18
Indonesia	2,272	105	47.0	130	13
Pakistan	2,281	99	63.0	165	32
Sri Lanka	2,126	96	43.0	121	16
Average[b]	2,052	91	n.a.	n.a.	n.a.
Middle-income countries					
Brazil	2,562	107	62.7	161	56
South Korea	2,785	119	73.0	183	21
Mexico	2,654	114	66.0	173	41
Thailand	1,929	105	49.0	136	n.a.
Average[b]	2,590	108	n.a.	n.a.	n.a.

[a] 1979.
[b] Average includes some countries not listed.
Source: World Bank, 1983, I, 101, and III, 33.

But though China normally has a lower malnutrition rate and distributes food more equally than India, it is more subject to famine than India is. As Sen (1983, pp. 757-760) points out, one-third of the Indian population goes to bed hungry every night and leads a life ravaged by regular deprivation. India's social system takes non-acute endemic hunger in stride; there are no headlines or riots. In China, the

situation is almost the opposite. Its political commitment ensures lower regular malnutrition through more equal access to means of livelihood, and state-provided entitlement to basic needs of food, clothing, and shelter. In a normal year, China's poor are much better fed than India's. China's life expectancy is 67 to India's 55 years. Yet if there is a political and economic crisis that confuses the regime so it pursues disastrous policies with confident dogmatism, then it cannot be forced to change its policies by crusading newspapers or effective political opposition pressure, as in India.

While China's per capita food production and calorie consumption were not much higher in 1977 than in 1957, they dropped sharply during the 1959-61 famine. Foodgrain output per person in 1960 dropped 25 percent below its 1952 level, resulting in widespread malnutrition. The cause of this decline was not only bad weather, floods, and drought, but also poor quality work during the Great Leap Forward (GLF) 1958-60. Reservoir construction work destroyed soil, river functioning, and existing irrigation systems, Reservoir and water conservation work raised underground water levels, alkalized, salinized, and waterlogged soil, halted stream and river flows, left irrigation channels unfinished, and lacked drainage. Moreover, GLF water projects took land from cultivation (Ibid., pp. 101; Prybyla, 1970, pp. 264-269; Barnett, 1981, pp. 271, 302). Yet the GLF political pressure for agricultural success made local officials unwilling to report food shortages (Lardy, 1983, pp. 152-153).

Sen (1983, pp. 757-760) using Beijing University figures, calculates an extra mortality of 14-16 million people from famine in China in 1959-61, greater in absolute or relative terms than the 3 million extra mortality in India's largest twentieth-century famine, the Great Bengal Famine of 1943. So although China has been more successful than India in eliminating regular malnutrition, China has had more famines than India.

Life Expectancy

Life expectancy and infant mortality are indicators that represent the effects of nutrition, public health, income, and the general environment. China's life expectancy at birth (64 years) was more than middle-income countries' (61), and much higher than India's (51) in the late 1970s. China's high position relative to India continued from the early 1950s (table 11).

The first reason for China's higher life expectancy is its higher average consumption of food, housing, fuel, soap, and clean water, especially among the poorest 50% of the population. A second reason

TABLE 11
Life Expectancy at Birth (years)

	1935-1939	1950-1955	1965-1970	1975-1980
China	n.a.	48	60	64
India	n.a.	41	48	51
Indonesia	n.a.	39	46	48
Sri Lanka	n.a.	60	67	69
South Asia	30	41	46	49
East Asia	30	45	55	61
Africa	30	36	43	47
Latin America	40	52	60	64
Low-income countries	n.a.	35	44	50
Middle-income countries	n.a.	52	56	61
All developing countries	32	42	49	54
Developed countries	56	65	70	73

Sources: Morawetz, 1977, p. 48; World Bank, 1980b, pp. 442-447; and World Bank, 1983, I, 98.

is greater understanding by the Chinese people of nutrition, health, and hygiene, partly from greater literacy and education (discussed below). A third reason is medical care, public sanitation, and avoidance of communicable diseases. In the 1970s, China's four-tiered rural health system included one or two auxiliary health workers for each production team (usually a village of 100-400 people), a medical station staffed by two to three "barefoot doctors" for the production brigade (7-12 teams), the health center for a commune (often 4-15 brigades), and a county general hospital. Cities had even more adequate health and medical care.

Although Chinese health system emphasized preventive measures and improving the health environment, it also diffused widely basic curative care by Western and traditional Chinese medicine. In 1982, China had 2,500 people per fully qualified non-traditional doctor, compared to 9,900 in other low-income countries and 4,300 in middle-income countries. The ratio of population to other medical personnel is even more favorable when compared to other LDCs (World Bank, 1983, I, 64-65, 97-99).

In contrast to China, most of India's medical doctors practiced in large cities, so that medical care was rarely available in the villages. Although state government set up primary health units or small medical centers in some of the larger rural towns or district headquarters,

the vast majority of mortal illnesses in rural areas (and many in urban areas) went undiagnosed (Lamb, 1975, pp. 171-172).

Although China's 1979 medical personnel cost was under $7 per capita, compared to $2 in India and $1 in Indonesia, China's health-care coverage was more accessible to the population, especially to the rural poor.

Infant Mortality

China's infant mortality rate, 45 per 1000, was less than India's 123, and middle-income countries' 80, and more than high-income countries' 20 (Lewis and Kallab, eds., 1983, pp. 210-221). China's low rate reflects soap and clean water availability, health and hygiene under-standing, preventive health care and education, and clinics for mater-nal and child health care.

Literacy and Education

Literacy is a measure of well-being as well as a requirement for a country's economic development. China, like the Soviet Union and Cuba after their communist revolutions, emphasized spending on basic education to diffuse literacy and numeracy. Since 1949, China expanded primary and junior secondary schooling, and established an extensive network of adult and informal education.

Because of this effort, the proportion of primary school age children enrolled rose from about 25% in 1949 to 93% in 1979, while secondary ratios increased from 2 to 51. If you include the large number of overage children and adults in primary schools, the 1979 ratio of pupils to children in the primary age group was 158%. During the same period, the adult (15 years and older) literacy rate increased from 20 to 66% (see table 12).

But the Cultural Revolution severely disrupted education. Many primary and secondary schools remained closed for two or three years in the late 1960s, while some universities, post-secondary institutions, postgraduate schools, and vocational and technical secondary schools were closed through the early 1970s. The Cultural Revolution cost China two million middle-level technicians and one million university graduates, while reducing the quality of those educated. Yet overall, China's educational development after 1949 was generally impressive (World Bank, 1983, I, p. 136).

India's schools did not expand as rapidly as China's. The proportion of India's primary school age children enrolled increased from about 40% in 1949 to 64% in the 1970s, and its secondary proportion from about 10% in 1949 to 28% in the 1970s. During the same period, its

adult literacy rate increased from 15 to 36% (India, Ministry of Information and Broadcasting, 1982, pp. 46-47.)

India was ahead of other low-income countries in the 1970s, while China was way ahead of both low- and middle-income countries and almost at the same level as DCs in primary school ratios. India's secondary ratios were slightly more than other low-income countries, while China was substantially ahead of both low- and middle-income countries, although much behind the DCs (table 12). But India surpassed China in higher educational enrollment as a percentage of the age group — with 1.1% compared to 0.7% in China (World Bank, 1983, III, 135).

China's adult literacy rate, similar to other low-income countries and way behind middle-income countries in 1949, was well ahead of the low-income countries, and not far behind middle-income countries, in the late 1970s. India's literacy rate, slightly behind China's in 1949, was way behind China in the 1970s, and even below average for low-income countries.

China's high average primary and secondary school enrollment rates, emphasis on adult education, and low higher educational rates, reflect more equal distribution of education opportunities by age, gender, income, and rural-urban area. The proportion of rural primary school age children enrolled in the late 1970s was 92%, compared to less than 100% in urban areas. Additionally, 84% of primary school

TABLE 12
Basic Education in the 1970s(%)[a]

	Primary School net enrollment ratio[b]	Secondary School gross enrollment ratio[c]	Adult literacy rate
China	93	51	66
India	64	28	36
Indonesia	66	21	62
Sri Lanka	62	47	78
Low-income countries	56	25	38
Middle-income countries	75	28	71
All developing countries	62	26	51
Developed countries	94	68	99

[a] Data for China refer to 1979, for other countries to 1975 or 1977.
[b] Proportion of primary school age group enrolled.
[c] Secondary school enrollment as ratio of secondary school age group.

Source: World Bank, 1983, I, 96.

age girls in China were enrolled, compared to 50% in India (Ibid., 1983, I, 96).

The quality of China's basic education has been high by LDC standards. In the late 1970s, about 72% of those entering China's primary schools completed 4 years education, compared to 41% in India, 68% in Indonesia, and 38% in Brazil. Although the quality of school buildings varied widely, China has had an ample supply of textbooks. Mathematics achievements are probably ahead of most LDCs. The World Bank estimates that, despite China's low pupil-teacher ratio, 1979 basic education cost of only $20 per pupil per year, less than half the average for other LDCs. Major reasons were low teacher salaries and low spending on physical facilities.

Conclusion

China outperformed India in most indicators of welfare for the late 1970s to early 1980s and of growth from the early 1950s to the late 1970s. China's real GNP per capita was 20-50% higher and its real growth was about three times higher than India's. Rural, urban, and overall income inequalities in China were lower than in India. China's poverty and malnutrition rates were significantly lower than India's, while its per capita levels of foodgrain output, and calorie and protein consumption were significantly higher. China had a higher literacy rate, basic educational rate, and life expectancy, and a lower infant mortality than India.

But India's urban-rural income ratio was comparable to China's, and this ratio declined while China's was increasing. Moreover, India's growth in foodgrain output per capita was slightly better than China's. And, while India has been less successful than China in eliminating regular malnutrition, it has had fewer famines than China.

Despite India's narrowing urban-rural income differentials, China's average rural income levels were higher and growth faster than India's. And even though India's growth in average foodgrain output was faster, its 1979 figure was 28% below China's.

How have differences in government planning contributed to China's superior performance? China used Soviet-type planning, centralizing resource allocation, and communicating decisions by commands. The planners' controlling calculation was a national table of material balances, which, unlike the Indian approach, specified industry and consumer demand to correspond to the supply of controlled commodities. The Chinese government channeled capital resources to industry, using the Fel'dman approach of investment priorities in capital-goods, especially in the first plan, 1953-57. China repressed

non-essential consumption more than India, contributing to gross investment rates of gross product more than 20% compared to India's less than 15% in the late 1950s, 23% to India's 17% in 1960, 25% to India's 18% in 1965, and 26-30% to India's 17-24% in the 1970s. Moreover, China, with a more educated labor force, and central and regional government allocating investment to high-priority industries and planning high capital utilization, had a higher capital productivity than India (Malenbaum, 1984, pp. 206-209; World Bank, 1983, I, 78-82; World Bank, 1984, p. 226; World Bank, 1985, p. 182; Howe, 1978, pp. 53-54).

Indian planning suffered from the paradox of inadequate attention to programs in the public sector, and too much control over the private sector. Indian planners frequently chose public-sector investments on the basis of rough, sketchy, and incomplete reports, with little or no cost-benefit calculations for alternative project locations. And the ministries, having selected the project, often failed to do the necessary, detailed technical preparation and work scheduling related to the project. The bureaucracy was slow and rigid, creating input bottle-necks, and stifling quick and imaginative action by industrial managers. (Even public firms had to apply for materials and capital import licenses a year or so in advance.) Poorly stated criteria for awarding input licenses and production quotas led to charges of bribery, influence peddling, and communal or political prejudice. Key public-sector products were often priced lower than scarcity prices, increasing waste and reducing savings. Furthermore, political involvement in public enterprises meant unskilled labor overstaffed many projects (Nafziger, 1984, pp. 451-452).

Planning problems led to profit rates for public enterprises lower than for indigenous, private operations, even when adjusted for commercial and social profit discrepancies. This inefficiency explains why the Indian public sector, despite its domination of large industry, contributed only 18% of India's total capital formation, 1950-1975 (Uppal, 1977, p. 58).

Despite limited planning resources and control, the Indian government, on the other hand, tried to influence private investment and production through licensing and other controls. The effect of these controls, intended to regulate production according to plan targets, encourage small industry, prevent concentrated ownership, and promote balance regional economic development, was to curtail private output and investment substantially, while increasing private industrial concentration (Nafziger, 1978, pp. 108-122).

China's planners, like India's, also tried to plan and control economic relations beyond their capabilities. Because of China's vast size,

skill shortages, and unreliable statistics, its overextending was more serious than the Soviet Union's. As in India, frequent shortages of essential materials forced enterprises to curtail production. And planning stressed physical output targets instead of quality, costs, or efficiency, often resulting in waste. Moreover, Deng complained about bribery, overstaffing, and lack of technical innovation, especially during the 1960s and early 1970s (World Bank, 1983, I, 146-150; Barnett, 1981, pp. 27-34). But these planning problems were not as acute as India's. In general, China has used centralized planning to get the high investment and capacity utilization rates to transform its economy rapidly, while meeting the basic needs of food, shelter, health, and education for the overwhelming majority of its population.

India's policy approach has had some limited successes. Its democracy prevented disasters similar to China's Great Leap Forward, 1958-60, when ill-conceived drainage and water conservation projects, and immunity to effective political pressure, worsened the subsequent famine. India's free labor migration has helped to narrow urban-rural differentials. Its open scientific community, cooperating with foreign scholars, made a Green Revolution, absent in China, possible. Yet overall India has not been successful in combining democracy, government planning, and a sizeable private sector to achieve her goals of major poverty reduction and rapid economic growth.

REFERENCES

Montek S. Ahluwalia, Nicholas G. Carter, and Hollis B. Chenery, "Growth and Poverty in Developing Countries," *Journal of Development Economics* 6 (September 1979): 299-341.

Pranab K. Bardhan, "India," in Hollis Chenery, Montek S. Ahluwalia, C.L.G. Bell, John H. Duloy, and Richard Jolly, *Redistribution with Growth* (London: Oxford University Press, 1974).

A. Doak Barnett, *China's Economy in Global Perspective* (Washington: Brooklings Institution, 1981).

Chinese Communist Party Central Committee, Foreign Broadcast Information Service, *Daily Report — People's Republic of China,* Department of Commerce, National Technical Information Service, 25 October 1979, supplement 032.

Ruddar Datt and K.P.M. Sundharam, *Indian Economy* (New Delhi: S. Chand, 1983).

Nick Eberstadt, "China: How Much Success?" *New York Review of Books,* 25, no. 7 (3 May 1979a).

Nick Eberstadt, "Has China Failed?" *New York Review of Books,* 25, no. 5 (5 April 1979b).

Alexander Eckstein, *China's Economic Development* (Ann Arbor: University of Michigan Press, 1975).

Francine R. Frankel, *India's Political Economy, 1947-1977* (Princeton: Princeton University Press, 1978).

John G. Gurley, *China's Economy and the Maoist Strategy* (New York: Monthly Review Press, 1976).

Christopher Howe, *China's Economy: A Basic Guide* (New York: Basic Books, 1978).

Al Imfeld, *China as a Model of Development,* trans. Matthew J. O'Connell (New York: Orbis, 1976).

India, Central Statistical Office, Department of Statistics, Ministry of Planning, *Statistical Abstract: India, 1978,* New Series No. 23 (New Delhi, 1979).

India, Ministry of Information and Broadcasting, *India: A Reference Annual, 1982* (New Delhi, 1982).

Indian Economic Survey, 1982-83 (New Delhi, 1983).

Shail Jain, *Size Distribution of Income: A Compilation of Data* (Washington: World Bank, 1975).

Irving B. Kravis, "An Approximation of the Relative Real per Capita GDP of the People's Republic of China," *Journal of Comparative Economics,* 5 (March 1981): 60-78.

Irving B. Kravis, Alan W. Heston, and Robert Summers, *United Nations, International Comparison Project: Phase II; International Comparisons of Real Product and Purchasing Power* (Baltimore: Johns Hopkins University Press, 1978), pp. 204-5.

Irving B. Kravis, Alan W. Heston, and Robert Summers, *World Product and Income: International Comparisons of Real Gross Product* (Baltimore: Johns Hopkins University Press, 1983).

V.G. Kulkarni and D.D. Deshpande, compilers, *Statistical Outline of Indian Economy* (Bombay: Vora & Co., 1968).

Beatrice Pitney Lamb, *India: A World in Transition* (New York: Praeger, 1975).

Nicholas R. Lardy, *Agriculture in China's Modern Economic Development* (Cambridge: Cambridge University Press, 1983).

John P. Lewis and Valeriana Kallab, eds., *U.S. Foreign Policy and the Third World: Agenda, 1983,* published for the Overseas Development Council (New York: Praeger, 1983).

Michael Lipton, *Why Poor People Stay Poor: A Study of Urban Bias in World Development* (London: Maurice Temple Smith, 1977).

Wilfred Malenbaum, "Modern Economic Growth in India and China," in M. Dutta, ed., *Studies in United States-Asia Economic Relations* (Durham: Acorn Press, 1984), pp. 190-225.

Ashoka Mody, Sudipto Mundle, and K.N. Raj, "Resource Flows from Agriculture: Japan and India," in Kazushi Ohkawa and Gustav Ranis, eds., *Japan and the Developing Countries: A Comparative Analysis* (Oxford: Basil Blackwell, 1985).

David Morawetz, *Twenty-five Years of Economic Development, 1950 to 1975* Baltimore: Johns Hopkins University Press, 1977).

E. Wayne Nafziger, *Class, Caste, and Entrepreneurship: A Study of Indian Industrialists* (Honolulu: University Press of Hawaii, 1978).

E Wayne Nafziger, *The Economics of Developing Countries* (Belmont, Calif.: Wadsworth, 1984), pp. 294-296.

Dwight Perkins and Shahid Yusuf, *Rural Development in China* (Baltimore: Johns Hopkins University Press, 1984).

Jan S. Prybyla, *The Political Economy of Communist China* (Scranton, Pal.: International Textbook, 1970).

V.K.R.V. Rao, *India's National Income, 1950-1980: An Analysis of Economic Growth and Change* (New Delhi: Sage Publications, 1983).

Amartya Sen, "Development: Which Way Now?" *Economic Journal,* 93 (December 1983).

Subramanian Swamy, *Economic Growth in China and India, 1952-1970* (Chicago: University of Chicago Press, 1973).

Dan Usher, *The Price Mechanism and the Meaning of National Income Statistics* (Oxford: Clarendon Press, 1968).

World Bank, *China: Socialist Economic Development,* 3 vols. (Washington, 1983).

World Bank, *World Bank Atlas, Gross National Product, Population, and Growth Rates, 1980* (Washington, 1980a).

World Bank, *World Bank Atlas: Gross National Product, Population, and Growth Rates, 1981* (Washington, 1982).

World Bank, *World Development Report, 1984* (New York: Oxford University Press, 1984).

World Bank, *World Development Report, 1985* (New York: Oxford University Press, 1985).

World Bank, *World Tables, 1980* (Baltimore: Johns Hopkins University Press, 1980b).

NOTES

1. Problems with their poverty line include a single caloric norm, much caloric variation at a given level of expenditure, variations for even the same individual, different age and sex compositions of populations, and neglect of other nutrients.