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China's Great Economic Transformation

Loren Brandt and Thomas G. Rawski

In this book, a large and diverse group of researchers pool their knowledge to take the measure of China's massive, protracted, and unexpected economic upsurge, which began in the late 1970s and continues as this is written nearly thirty years later. The magnitude and rapidity of China's recent gains stand out even against the background of stunning growth among China's East Asian neighbors during the late twentieth century.

China's extended boom began at remarkably low levels of income and consumption. Its growth spurt is remarkable for its geographic spread as well as its speed and longevity. While coastal regions have led the upward march of output, exports, and income, China's central and western regions have recorded enormous gains as well.

A brief summary can delineate the magnitude of China's recent economic achievements. One careful review of available data finds that average gross domestic product (GDP) growth increased from approximately 4 percent prior to the reform to 9.5 percent during 1978–2005 (see Chapter 20). Although Young (2003) and others label recent growth as extensive, meaning that the main motive force comes from adding more labor and capital to the production process, the same study finds that productivity improvement accelerated from 0.5 to 3.8 percent per annum after the reform, with productivity change accounting for 40.1 percent of overall GDP growth during 1978–2005, as opposed to 11.4 percent during 1952–1978 and –13.4 percent (i.e., a productivity decline) during 1957–1978 (see Table 20.2).

Tables 1.1 and 1.2 use purchasing-power parity data from the Penn World Tables and the World Bank to compare trends in aggregate and per capita GDP for China and several other nations. Prior to 1978, China's overall output grew somewhat faster than GDP in the United States and India, but lagged dramatically behind Japanese performance. After 1978, rapid expansion in China's relative economic size became the norm, pushing Chinese output from 37.5 percent of Japan's 1978 figure to 219.2 percent of Japan's 2004 GDP, and so on (Table 1.1).

Table 1.2 shows similar trends in per capita GDP. Prior to reform, China recorded slight gains with regard to India and the United States, but lagged far behind Japan



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Table 1.1. China's GDP as percent of GDP for other large nations, 1978–2004^a

1952	1978	1990	2000	2004
9.5	13.6	27.9	51.7	64.0
78.5	38.5	70.5	165.9	219.2
n.a.	50.8	113.3	244.8	322.1
63.9	78.0	122.2	190.6	203.1^{b}
	9.5 78.5 n.a.	9.5 13.6 78.5 38.5 n.a. 50.8	9.5 13.6 27.9 78.5 38.5 70.5 n.a. 50.8 113.3	9.5 13.6 27.9 51.7 78.5 38.5 70.5 165.9 n.a. 50.8 113.3 244.8

^a Calculated at purchasing-power parity.

Source: Heston, Summers, and Aten (2006).

Table 1.2. China's per capita GDP as a percent of figures for other nations, 1952–2005^{a,b}

1952	1978	1990	2000	2005
2.7	3.2	6.3	11.6	15.7
11.8	4.6	7.7	16.7	21.3
25.4^{c}	15.0	16.4	25.5	30.1
42.6	53.7	90.3	151.4	188.5
	2.7 11.8 25.4 ^c	2.7 3.2 11.8 4.6 25.4 ^c 15.0	2.7 3.2 6.3 11.8 4.6 7.7 25.4 ^c 15.0 16.4	2.7 3.2 6.3 11.6 11.8 4.6 7.7 16.7 25.4 ^c 15.0 16.4 25.5

^a Measured at purchasing-power parity.

Source: Data for 2005 are World Bank measures in current international dollars; data for earlier years are from Heston, Summers, and Aten (2006).

and Korea. After 1978, the picture changes dramatically, with Chinese per capita income doubling its level relative to that of Korea and achieving even faster growth relative to India, Japan, and the United States.

Rapid advance in output per capita has elevated hundreds of millions from absolute poverty. Ravallion and Chen (2004) report a steep decline in the proportion of rural Chinese mired in absolute poverty: using an early official poverty indicator, the share of impoverished villagers drops from 40.65 percent in 1980 to 10.55 percent in 1990 and 4.75 percent in 2001. A second indicator shows higher proportions living in absolute poverty, but indicates a comparable trend (75.7 percent impoverished in 1980 and 12.49 percent in 2001).

China's economy has abandoned its former isolation in favor of deep engagement with world markets. The trade ratio, which measures the combined value of exports and imports as a share of GDP, jumped from under 10 percent prior to reform to 22.9 percent in 1985, 38.7 percent in 1995, and 63.9 percent in 2005 – a level far higher than comparable figures for any other large and populous nation

^b Based on data for 2003.

^b Annual figure for each comparator nation equals 100.

^c Figures refer to 1953.



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(Compendium, 2005, pp. 9, 68; Yearbook, 2006, pp. 57, 733). China has also become a major player in the global market for foreign direct investment, receiving annual inflows in the neighborhood of U.S.\$70 billion during 2004–2006 and generating moderate, but rapidly increasing, outflows of direct overseas investment (U.S.\$16.1 billion in 2006) (Investment Surges, 2007; UNCTAD, 2007).

China's economic ascent rests on a series of gradual, often discontinuous, and continuing transitions. A massive exodus from the villages has reduced the farm sector's share of overall employment from 69 to 32 percent between 1978 and 2004, while the farm sector's GDP share fell by more than half (see Tables 13.6 and 17.1).

The slow retreat of planning has cumulated into a dominant role for market outcomes. Price determination, formerly concentrated in official hands, now reflects shifts in supply and demand. Data for 2000–2003 indicate an 87 percent share of market pricing (as opposed to prices that are fixed or guided by government) for "means of production"; comparable figures for farm products and consumer goods exceed 90 percent (Li, 2006, pp. 104–106).

Following a quarter century of liberalization, markets for products, labor, and materials are well developed and increasingly competitive. While investment decisions, capital markets, and transfer of ownership rights still bear the imprint of official preferences, the overall impact of market forces continues to deepen.

Despite the dominance of state ownership in finance, telecommunications, steel, petroleum, tobacco, and other important sectors of the economy, private entrepreneurs continue to push into sectors formerly reserved for public enterprise. The Organisation for Economic Co-operation and Development's estimates show the private sector, which scarcely existed at the start of reform, accounting for 59.2 percent of China's gross domestic product for 2003 (OECD, 2005, p. 125).

These momentous shifts, from poverty to growing prosperity, from village to city, from plan to market, from public toward private ownership, and from isolation to global engagement, form the backdrop for this book, which aims to develop an integrated perspective on these remarkable events. In recruiting and guiding our authors, we sought to focus attention on basic questions of long-term significance. How and why did China vault from the moderate growth attained during the plan era (roughly 1952–1978) onto a new path of explosive growth? Once begun, how was the new pace of growth maintained? How did rapid expansion spread across sectors and regions? How did particular sectors and regions contribute to the spurt? How have changing policy structures accelerated or hindered China's economy? What factors constrain China's current and future growth? The chapters that follow address these and many other issues from multiple perspectives. The present essay seeks to establish an analytical framework for examining China's economic evolution since the formation of the People's Republic in 1949.

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BACKGROUND: CHINA'S ECONOMY PRIOR TO THE START OF ECONOMIC REFORM

China's economy experienced modest, but significant, growth in the decades prior to the outbreak of full-scale war with Japan in 1937 (Brandt, 1989; Rawski, 1989). The pattern of pre-World War II economic advance reflected China's openness to international trade and investment. Prewar expansion clustered around two growth poles: the Yangzi Delta area centered on Shanghai, where thriving domestic and foreign private business propelled regional growth; and the northeastern provinces, where infusions of officially directed Japanese capital, technology, and expertise energized an expansion that prefigured the planned economy of the 1950s.

By the 1930s, China had developed a modern sector spanning industry, communications, transportation, banking, and finance, in which domestic ownership predominated. Although this nascent modern sector never surpassed one-tenth of GDP, its rapid development, along with China's growing integration with the international economy, had catalytic effects on agriculture and other sectors that pushed the economy toward modest gains in per capita GDP (Rawski, 1989). Before the collapse of international trade that followed the onset of the Great Depression, China's share of world trade and its own ratio of foreign trade to GDP achieved levels that were not regained for over sixty years (Lardy, 1994). These achievements look even more impressive when viewed in light of the limited capacity of the Chinese state to promote economic development.

Following disruptions arising from an eight-year battle against Japanese invaders, followed by several years of civil strife between Communist and Kuomintang forces, the People's Republic of China, established in October 1949, inherited an economy whose growth potential was obscured by the ravages of war and inflation. Successful application of orthodox macroeconomic policies quelled inflation, restored fiscal balance, revived the money economy, and encouraged a rapid economic revival (Perkins, 1966).

The new regime then moved to create an economic system largely modeled after Soviet experience. Soviet advisers and Soviet-trained specialists worked to establish new institutions organized around annual and five-year plans, extensive state ownership, central control over prices, and material balance plans that issued specific directives governing the allocation of major inputs, products, and financial flows. As in the USSR, the key plan objective was to raise domestic saving, particularly by extracting resources from the rural sector, and to channel these funds toward industrial growth.

China's system was not a carbon copy of the Soviet Union's. Mao Zedong broke new ground by herding Chinese villagers into large-scale collectives known as people's communes in 1958. In addition, management of Chinese industry was significantly less centralized than in the Soviet Union, with substantial authority vested in provincial and local plan bureaucracies (Wong, 1986). Despite these



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and other differences, the institutions of Chinese planning generated behavior characteristic of what came to be known as "Soviet-type" economies.

During the quarter century prior to the start of economic reform in the late 1970s, China's plan system delivered mixed results (Howe, 1978; Riskin, 1987; Naughton, 1995). Rising rates of saving and investment promoted economic growth, despite short-term disruptions associated with the Great Leap Forward of the late 1950s and the Cultural Revolution of the late 1960s. World Bank estimates covering 1950–1975, a period roughly coterminous with China's plan era, show that China recorded average annual growth of 4.2 percent in per capita GNP, a figure surpassed by only ten of seventy-seven nonindustrialized nations, most of them oil exporters. During these years, China's planned economy outperformed other populous developing nations, including Brazil, Egypt, India, Indonesia, and Mexico, often by substantial margins (Morawetz, 1978, pp. 19–21).

Large-scale technical aid from the socialist bloc helped China to introduce new industries, for example, the manufacture of trucks and equipment for power plants and telecommunications, and to upgrade others. In addition, urgent restructuring efforts necessitated by the downturn following the 1959–1961 famine and simultaneous withdrawal of East Bloc technical aid revealed new technological capabilities on the part of both old and new Chinese firms (Rawski, 1975, 1980).

China's plan system also delivered important gains in the creation of human capital. Mortality, especially among infants and new mothers, declined, and school attendance and educational attainment increased. Census data revealed an increase of slightly more than 50 percent in life expectancy from 42.2 (45.6) years in 1950 to 66.4 (69.4) years in 1982 for males (females). School enrollments increased at all levels; the spread of education reduced the proportion of Chinese aged 16–65, who had not completed primary school from 74 to 40 percent between 1952 and 1978 (see Tables 15.1 and 20.1; see also Chapter 7).

These important achievements coincided with significant failures, most obviously in the area of food supply. The man-made famine of 1959–1961 killed 30–40 million Chinese. Food scarcity did not end in 1961: average rural diets continued to fall short of basic nutrition standards until the start of reform. As a result, food supplies for millions of Chinese villagers were no better in the 1970s than in the 1930s (Lardy, 1983; Bramall, 1989; Rawski, 2006).

Material conditions were better for city dwellers, although they too experienced little improvement in the level of consumption or the variety of (often rationed) commodities after 1957. Urban residents received larger food allotments than villagers. They also benefited from privileged access to government-funded education, health care, housing, and pensions. Substantial differences in income and life chances favoring urban dwellers obliged the regime to curtail migration to the cities by reviving China's traditional system of household registration (*hukou*) and by instituting tight controls over the distribution of food grains, urban housing, and other consumer essentials (see Chapters 18 and 19).



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Despite rising output, industry suffered from the inefficiencies associated with Soviet-style central planning: emphasis on quantity at the expense of quality and assortment, focus on investment goods rather than consumer products, neglect of innovation and customer requirements, excessive vertical integration, plan-related seasonal fluctuations in output and investment, and large inventory accumulations (Rawski, 1980).

Underdevelopment of services exacerbated these weaknesses. Neglect of services follows Marxist theory, which omits most tertiary activities from the national accounts. China's intermittent campaigns targeting intellectuals, including a decade-long closure of universities and many other schools during the Cultural Revolution, intensified the relative decline of services. By the end of the plan period, education-linked wage differentials had largely vanished: one study noted that average pay levels in the catering sector exceeded wages in higher education (Hou, 1999, pp. 184–185).

China's isolation from the international economy further enlarged the gap between achievement and potential. The combination of Beijing's autarchic tendencies and a U.S.-led partial trade embargo constricted Chinese participation in global markets (Eckstein, 1966; Lardy, 1994; see Chapter 16). This deprived Chinese producers of valuable information, removed Chinese firms from the discipline and goad of international competition, and skewed domestic output away from the mix associated with comparative advantage. Official efforts to limit domestic as well as international specialization heightened the resulting barriers to the growth of output and productivity (Donnithorne, 1972; Lardy, 1983).

Macroeconomic statistics for 1952–1978 demonstrate the impact of these short-comings. During this period, China's economy benefited from a wide array of favorable circumstances, including improved technology, rising education levels, low inflation, and, with notable exceptions, domestic political stability. Although each of these factors should contribute to higher productivity, available data show no substantial upward trend for multifactor productivity (meaning output per unit of combined capital and education-enhanced labor) during the plan period (see Table 20.2). In reality, productivity might have declined, which would help to reconcile the failure of rising investment rates during the 1960s and 1970s to accelerate GDP growth (Field, 1983; Ishikawa, 1983).

A quarter century of socialist planning left China's economy riddled with multiple inefficiencies. Market segmentation between the rural and urban sectors, barriers to economic flows across administrative boundaries, and differentials in the marginal productivity of capital and labor between farming and nonagriculture, between private and collective plots, and between producer and consumer manufactures all pointed to large-scale misdirection of resources, a sure sign of static inefficiency. The economy also suffered from wide and persistent gaps between actual and potential output – what economists call "X-inefficiency." Widespread shirking limited productivity in both agriculture and industry.



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Planners typically classify outcomes as satisfactory or unsatisfactory. In the absence of special recognition or reward for improvements in quality, variety, cost, or productivity, advances in these areas become uncompensated gifts from producers, who bear the expenses and risks linked to upgrading efforts. Without direct intervention by political leaders ("innovation by order"), innovative effort is shunted aside in favor of pursuing short-term targets for physical output ("fulfilling the plan"). The result is a general failure of dynamic efficiency, as the expansion of society's production frontier lags behind the potential embodied in available knowledge and resources. The consequences are readily visible within individual firms, as when First Auto Works, one of China's premier manufacturers, found its "obsolescence of equipment and models worsening day by day" following "thirty years of standing still" (Li, 1993, p. 83), and also at the macroeconomic level.

We see three underlying sources of productivity stagnation and rampant inefficiency in China's planned economy: noneconomic policy objectives, weak institutions, and poor incentives.

Although China's leaders valued material progress, considerations of national defense and ideology frequently trumped economics during the plan era, with predictably negative effects on output and productivity. Security considerations, for example, dictated the movement of factories from coastal cities to interior regions during the 1950s. Fear of external attack also inspired the "Third Front" policy of the 1960s, which poured massive investments into remote regions (Naughton, 1988). In similar fashion, the pursuit of ideological objectives imposed economic costs, as when schools were closed and urban youths were forced to migrate to rural villages or when small-scale commerce was curtailed to protect citizens from the supposed evils of capitalism's "silver bullets."

The plan system's hostility to entrepreneurship enforces uniformities that inflate firm-level rigidities into economywide excesses. In a market system, if firms cannot obtain repair services in December, entrepreneurs may seek to profit by addressing this gap. But planning earmarks investment funds for specific projects and concentrates research activity in government institutes (which in China often neglected applied studies that could offer immediate support to manufacturing operations), leaving few opportunities for such reactive improvisations. Similar obstacles bedevil innovative efforts within existing enterprises. In the absence of high-level patronage, managers find it difficult to justify the expense, delay, and failure associated with efforts to develop new products and processes.

Weak incentives compound these difficulties. In a market system, individuals and enterprises can expand sales and improve financial outcomes by outdoing rivals in satisfying old and new customers. Under the plan, with both the volume and the direction of sales mandated by official fiat, producers experience neither the opportunity to expand through their own initiative nor the threat of being eclipsed by rival suppliers. As a result, plan systems fail to generate the automatic, decentralized pressure for improvement that suffuses all market systems.



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Everyone recognized the death of Mao Zedong in 1976 as a major turning point for the People's Republic. There was wide agreement among China's political elite about the need for economic change, without, as Naughton (see Chapter 4) observes, any clear sense of reform direction. Two economic issues stood behind this consensus. Although China's economy had performed well compared to low-income nations worldwide, China's standing within East Asia was weak. Japan and (South) Korea, societies that many Chinese regard with disdain, had raced far ahead, as had Taiwan and Hong Kong, small entities crowded with refugees from the People's Republic and, in Taiwan's case, led by Chiang Kai-shek's reviled Kuomintang. China's obvious backwardness in its dynamic East Asian neighborhood galled Beijing's elites.

More specifically, the winding down of the Cultural Revolution disruptions failed to resolve chronic food supply problems. During the first half of the 1970s, rising numbers of grain-deficit households, reductions in grain stocks and in cross-provincial shipments, numerous reports of local shortages, and demands that the state return grain procurements to avoid "repeating the error of 1959" – an obvious reference to the Great Leap Forward famine – all point to a system near the brink of a serious food crisis, with no indication of sustained progress (Zhao, 1988, pp. 144–147).

With this background, it is not surprising that the story of China's reforms begins in the farm sector. There was a long history of poor results, with the danger of renewed crisis lurking in the background. The chief mechanism of reform – the restoration of household cultivation – had a proven track record from the 1960s. Protracted policy neglect of the farm sector meant that rural reform would not threaten important political constituencies (Pei, 2006, p. 31; see Chapter 4).

KEY FACTORS IN CHINA'S REFORM SUCCESS

Whatever its merits, China's plan system saddled the economy with costly defects, some inevitable in any plan system, others peculiar to the Chinese variant, that constrained China's economy to a path that delivered modest gains at best and indubitably failed to satisfy Chinese ambitions. In economic terms, Chinese socialism held the economy far below its production frontier while severely restraining the frontier's outward movement. In Japan, a similar knowledge gap combined with a shift from military to civilian production fueled a burst of catch-up growth beginning in the 1950s (Ohkawa and Rosovsky, 1973). China's bleak circumstances of the late 1970s concealed similar possibilities.

In the presence of large gaps between current and potential output, and of neglected opportunities to expand the production frontier, limited reform that even partially ruptures the shackles surrounding incentives, marketing, mobility, competition, price flexibility, and innovation may accelerate growth. Begin with an economy operating well below its potential, partly because its labor force, perceiving that effort hardly affects their incomes, withholds a substantial fraction



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of its available energy (which itself is reduced by chronic undernutrition). Now restore the link between effort and reward, permit a partial market revival, and open the door to experimentation with international trade and investment. Without the disruptive changes in trade flows and political structures that accompanied early reform efforts in the former Soviet Union and Eastern Europe, such simple initiatives — which approximate the circumstances of China's early reforms — can readily ignite a burst of growth, even if prices, financial institutions, judicial enforcement, policy transparency, corporate governance, and many other features of the economy remain far removed from ideal arrangements.

China's reform experience powerfully confirms the insights of Hollis Chenery, who insisted that pinpointing and then ameliorating key obstacles could accelerate growth in the absence of conditions that are widely seen as essential for development (e.g., Chenery and Strout, 1966; Chenery and Syrquin, 1975). Chinese evidence encourages us to think of a hierarchy of desirable features that support growth or, if absent, hinder it. These growth-enhancing conditions are not equally important. In China, partial measures affecting incentives, prices, mobility, and competition—what we might term "big reforms"—created powerful momentum, which easily dominated the friction and drag arising from a host of "smaller" inefficiencies associated with price distortions, imperfect markets, institutional shortcomings, and other defects that retarded growth and increased its cost but never threatened to stall the ongoing boom.

Early initiatives in the farm sector illustrate the impact of limited reforms affecting incentives and mobility. Household cultivation replaced collective farming, as hundreds of millions voted with their feet to abandon the central feature of the people's communes. The shift to household cultivation meant that farmers could claim the fruits of extra effort for themselves, rather than receiving tiny shares of collective production. The restoration of household farming immediately reinstated the link between effort and reward throughout rural China. The resulting multiplication of work effort resulting from better incentives and, once output expanded, higher energy levels (a factor that figures prominently in historical studies by Nobel Laureate Robert Fogel, 2004) raised farm labor productivity so rapidly that millions of villagers began looking for outside employment. Substantial increases in official purchase prices, especially for grain, added to the rewards from extra effort.

With new incentives spurring work effort, farm output jumped quickly, even though the post-reform rural environment retained important elements of the planned economy. With the state firmly in control of major crop prices, trading networks, and fertilizer supplies, the reformed farm sector actually embodied fewer "free market" characteristics than Chinese agriculture of the early 1950s, not to mention the full market system of the 1920s and 1930s. But despite the rigidities and distortions associated with government control, a "big reform" affecting incentives created sufficient momentum to jump-start China's lethargic rural economy.

The response to early rural reforms quickly spread beyond the farm sector. Rural factories had enjoyed a brief boom during the Great Leap Forward, suffered a



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considerable retrenchment during the 1960s, and then expanded rapidly during the 1970s. Following the revival of agriculture, rural industry, now fortified by greater access to the cities, rising incomes among potential rural customers, increased supplies of agricultural inputs, and throngs of eager job seekers, bounded ahead with renewed vigor. The resulting shift of employment from farming toward rural industry began the continuing exodus from farming that Brandt, Hsieh, and Zhu identify as an important component of economywide productivity change during the early reform years (see Chapter 17).

Encouraged by the explosive response to partial reform of the rural economy, officials pressed ahead with urban reform efforts focused on improving the performance of state-owned industry. Early urban reforms achieved only limited progress toward their main objective of "enlivening" state-owned enterprises (SOEs). They did, however, contribute to the expansion of rural industry and urban collective enterprises by opening new markets as well as new sources of materials, subcontracting opportunities, and technical expertise.

A unique policy innovation was instrumental in spurring the development of urban and rural collective industry as well as increasing market awareness and efficiency within the state sector (Li, 1997). Rather than eliminate plan allocations at official prices, China's reformers created a dual price system that split transactions for most commodities into plan and market components. Once producers had satisfied plan requirements, they could now distribute after-plan residuals at increasingly flexible prices. This novel initiative thrust market forces into the economic lives of all Chinese households and businesses. Furthermore, this landmark change avoided the economic or political earthquakes associated with privatization (which threatens people's livelihood) or full liberalization of prices (which eliminates long-standing subsidies and undercuts the authority of plan agencies). The arrival of dual pricing instantly recast the plan system as a vast array of taxes and subsidies, recalling Paul Samuelson's observation that the efficiency consequences of pure competition survive the imposition of a lump-sum tax-subsidy regime (Samuelson, 1954; Sicular, 1988).

This novel arrangement reversed two central shortcomings of the plan system: rigid prices and neglect of innovation. Participants in China's economy – including the large SOEs at the core of the plan system – now faced a new world in which market prices governed the outcome of marginal decisions to sell above-plan output or purchase materials and equipment. Despite the continuation of subsidies and price controls, the high market price of coal, for example, signaled the likely future direction of price change and motivated users to plan accordingly.

Dual pricing opened the door to what Naughton (1995) has dubbed "growing out of the plan," in which directing incremental output toward market allocation gradually reduces the importance of the plan sector without a political struggle. As noted earlier, incremental marketization cumulated into a dominant role for market outcomes. It also spurred the expansion of market integration: farm gate prices, for example, now display a high degree of interregional integration (see Chapter 13).