

Does China Need to Change Its Industrialization Path?

Wu Jinglian

In recent years, the industrialization path that should be followed and the growth strategy that should be preferred have become major issues attracting attention across China. The Chinese government put forward the slogan “following a new industrialization path” in 2002 and the requirement of following a resource-economizing development approach with Chinese characteristics in 2004. However, another characterization and practice have actually been in play, that is, it has been contended that the Chinese economy has, as a totality, moved into a development phase of industrialization through heavy industry and opened up a broad space for investment growth. Many local governments have pooled physical and financial resources for the launch of large-scale projects in such sectors as automobiles, steel and iron, and aluminum electrodes in an attempt to drive economic growth by way of the high-level development of heavy industry and chemical industries. During the process of the drafting of the 11th Five-Year Plan (FYP), 2006–10, this author criticized such a line of thinking and practice and ignited a profoundly influential debate between and among economists and policy makers. Now, the Chinese government has formulated the 11th FYP in accordance with the principle of “following a new industrialization path”; however, for the plan to be implemented effectively, efforts should be made to push ahead with reforms in the growth strategy and other critical fields.

This essay will first offer an overview of the industrialization path followed and the growth strategy adopted over the past half century, while the second part will analyze the institutional impediments facing efforts to transform the growth strategy. The third part will turn to an explanation as to why such a path and model have already become unsustainable, and the fourth part will put forward the reform agenda that should be pursued. The last part will respond to critiques about the viewpoints raised by this author during the two-year debate.

The zigzagging road of China’s industrialization drive

With the beginning of the 1st FYP (1953–57) in 1953, China comprehensively adopted the Soviet industrialization strategy, which was characterized by the top priority granted to heavy industry as the guiding principle in economic development. During the 1st FYP, China concentrated its human, physical, and financial resources and, with the assistance of the Soviet Union, created and upgraded 156 major engineering investment projects, among which the vast majority were heavy-industry projects: investments in heavy industry accounted for 85 percent of the aggregate industrial investment during those five years. It was predicted that, by adopting such a guideline, China would be able to speed up the industrialization process appreciably, achieving industrialization throughout the country in approximately 15 years (1953–67), and basically build China into a great industrialized socialist country (Propaganda Department, Central Committee of the Communist Party of China, 1953).

In the first few years, implementation of the 1st FYP did not make satisfactory progress. Despite the fact that, driven by heavy industry, the Chinese economy achieved rapid development, given the abnormal development of heavy industry and the seriously worsening economic structure, the national economy was in very unstable condition. Against such a background, in 1956, Mao Zedong put forward his requirement of speeding up the development

of light industry and agriculture, while top priority was granted to the development of heavy industry (Mao 1956).

Nevertheless, China did not make any substantive change in its growth strategy and continued to attempt to sustain a high growth rate in output by means of inputs of capital and other resources. As a result, the year 1958 saw the launch of the Great Leap Forward campaign, which imposed high growth targets on output in such heavy industries as steel and coal. Although the Great Leap Forward campaign resulted in a seriously worsened economic situation and huge losses in wealth and even human lives, this growth strategy, featuring high targets, a high level of inputs, a high rate of growth, and low efficiency, was not changed at all until the end of the Great Cultural Revolution in 1976.

In the wake of the Great Cultural Revolution, a reflection occurred both within and outside the government on the development path that had been followed in the preceding years, and it was realized that China could not possibly achieve industrialization and modernization smoothly if the country were to continue to follow this path of extensive (factor-driven) development. In 1980, the Central Committee of the Communist Party of China and the State Council formally put forward the guideline of “embarking upon a new path with a relatively realistic speed, relatively good economic returns, and more real benefits for the people.”¹ In 1996, based on the experience of the early period of the reform and the drive toward openness (“opening-up”), the National People’s Congress passed the 9th FYP (1996–2000) and the “Vision Targets” for national economic and social development by 2010, which set out the “realization of the transformation of the economic growth strategy from an extensive (factor-driven) one to an intensive (productivity-driven) one” as a basic task for the 9th FYP. The 10th FYP (2001–05) regarded economic restructuring and upgrading as the main thread of economic development during those five years.

In the course of the two decades of reform and opening-up, efforts to eradicate the influence of the Stalinist socialist industrialization path targeted the outcomes or results; no thorough revamping was undertaken of the root causes of these outcomes, in particular the mindset and institutional arrangements underpinning the traditional industrialization path. Because the institutional and policy legacy compatible with the traditional industrialization path is still in existence on a massive scale and continues to play a role, practices that rely on substantial investments and high consumption to sustain high growth rates tend to be readopted easily.

Institutional foundation of the traditional industrialization path and growth strategy

The reason China’s economic growth strategy has failed to achieve a transformation toward intensive growth in line with the requirements of modern economic growth is, fundamentally speaking, related to institutional factors. In other words, a series of institutional arrangements tends to support and encourage the traditional industrialization path and growth strategy.

First and foremost, the government retains control over important resources. The market economic system that China has managed to establish initially is still government dominated; the market’s basic role in allocating resources is far from sufficient, and the government maintains the power to allocate many resources. For example, enterprises either wholly owned or absolutely controlled by the state retain their monopoly positions in important sectors. Given the fact that reform of the banking system is not yet completed, the allocation of credit and capital resources is still considerably influenced by administrative authorities at various levels. In

particular, over the past five years, as a result of the urbanization process, land has become ever more important. However, the land that has been expropriated from farmers has not been allocated by the market mechanism; instead, this has been done by governments at various levels.

Second, political achievements are measured by the growth rate in gross domestic product (GDP) at the center stage. Starting in 1995, China's national economic accounting system was changed from the material product balance sheet system, which only accounts for material production activities, to the system of national accounts, which accounts for production, distribution, and consumption as an integral totality. However, the tradition of regarding high GDP growth rates and the emulation of advanced countries in the material production field as national objectives that should be achieved at all costs still plays the dominant role and is the major yardstick against which the political achievements of party and government leaders at each level are measured. This yardstick of political achievements is employed in both superior and subordinate levels and in the horizontal comparison of different localities by the official media. Consequently, government officials at different levels of the hierarchy have a motivation to use their power to allocate resources for the sake of achieving high output growth rates.

Third, a production-oriented value added tax regime is in place. At present, the Chinese government collects half of its tax revenues through the value added tax. The level of value added tax revenues is directly linked to the level of the value of local aggregate output. This has also been an incentive on the part of various levels of governments to take advantage of the power in their hands to encourage and support investments in the construction of processing industries and big heavy- and chemical-industry projects that generate significant output and hefty tax revenues.

Fourth, the prices of resources are distorted. Under the traditional growth strategy, to ensure that resource- and capital-intensive industries are profitable and to achieve the target of rapidly developing industry, particularly heavy and chemical industries, the state usually forced factor prices to go down to a very low level (Lin, Fang, and Zhou 1999, 28–66). Nowadays, this sort of situation whereby the prices of factors, such as land, energy, freshwater, capital, labor, and foreign exchange, are seriously distorted still exists.² World Bank studies demonstrate that, because energy prices cannot reflect the true cost and the scarcity of energy, China's energy consumption has increased by at least 9 percent (see table 16.1).

Negative consequences of an aberrant industrialization path and growth strategy

At the turn of the 21st century, China witnessed a massive wave of investments in heavy and chemical industries. A series of negative effects of this growth strategy was quickly exposed, and these effects led to serious macroeconomic imbalances.

In the first place, the national economy could not allocate resources according to the principle of taking advantage of strengths, while avoiding weaknesses and bringing advantages into play, and its overall efficiency dropped.

The basic characteristics of China's resource endowments are abundant human resources, scarce natural resources, capital resources in short supply, and vulnerable ecological resources. Among these, the most salient feature is that the per capita ownership of natural resources is considerably below the world average (see table 16.2).

Given these resource endowments, if there were a sound resource allocation mechanism, China's industrial structures would obviously be oriented toward industries low in energy consumption and resource inputs and capable of capitalizing on China's advantage in its

abundant supply of human resources that are adept and skilled. Only under such circumstances can minimum resources generate maximum value. However, by following the old industrialization path, China may easily tumble into the pitfall of taking advantage of weaknesses, while avoiding strengths, whereby certain sectors or localities may achieve some growth and gains at the expense of serious welfare losses on the part of society as a whole.

TABLE 16.1. Impact on Efficiency and Energy Consumption of Unsubsidized Energy Prices

Country	Average subsidies (as % of the reference price)	Cost of subsidies (US\$ billions)	Impact of subsidy elimination		
			Increase in economic efficiency (as % of GDP) ^a	Decrease in energy consumption (%)	Decrease in CO ₂ emissions (%)
Iran	80.4	3.6	2.2	48	49
Venezuela	57.6	1.1	1.2	25	26
Russian Federation	32.5	6.7 ^b	1.5	18	17
Indonesia	27.5	0.5 ^b	0.2	7	11
Kazakhstan	18.2	0.3	1.0	19	23
India	14.2	1.5	0.3	7	14
China	10.9	3.6	0.4	9	13
South Africa	6.4	0.08	0.1	6	8
Total or average	21.2	17.2	0.7	13	16

Sources: Data of the International Energy Agency; Myers and Kent 2001.

a. Subsidies may increase total consumer and producer surpluses. The consumer surplus is defined as the difference between the price consumers are willing to pay and the price actually paid, while the producer surplus is defined as the difference between the amount actually received for each unit of commodities sold by the producer and the price that the producer is willing to pay. If the total of the consumer and producer surpluses is smaller than the amount of transfer payments (subsidies), the subsidy policy has created a net loss in social welfare. As a result, the elimination of the subsidies will increase economic efficiency.

b. Calculated on the basis of prices and exchange rates prior to the 1997 financial crisis.

TABLE 16.2. Per Capita Ownership of Resources in China Relative to the World Average

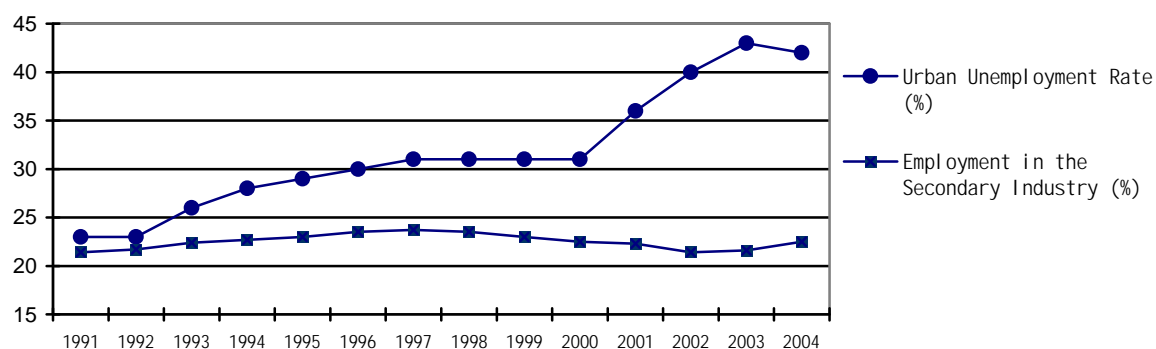
Resource	Per capita ownership in China	Percent of the world average
Farmland	0.1 hectares	42
Freshwater	2,257 cubic meters	27
Forests	0.12 hectares	20
Potential total mineral reserves	US\$9,300	58
Coal (proven and extractable reserves)	98.9 tons	53
Petroleum (surplus reserves)	2.7 tons	11
Natural gas (proven and extractable reserves)	769 cubic meters	3
Iron ore	36 tons	71

Source: Data drawn from "China Energy Development Strategy Study," 2004, Scientific Information Center for Resources and Environment, Chinese Academy of Sciences.

For example, China boasts the world's largest labor force, which is relatively high quality. Whether this huge potential can be unleashed will have a direct impact upon whether China's overall efficiency can be increased in a sustainable fashion and whether the people's livelihoods can be improved generally. It follows, therefore, that job creation is a serious task directly impacting sustained economic development and social stability. However, theoretical analysis and practical experience both show that the services industry and small enterprises are the major creators of new jobs and that resource-intensive and capital-intensive heavy and chemical industries have a weak capability in creating new jobs and offer limited job opportunities. If massive resources were to be allocated to the development of high-output, low-employment industries, the employment situation would, as a consequence, inevitably worsen.

Beginning in the second half of the 1990s, along with the heavy-industry orientation and capital intensiveness in industrial structures, while investments grew by a significant margin, the elasticity coefficient of job creation relative to GDP growth was declining, from 0.453 in the 1980s to 0.11 in the 1990s and further down to 0.098 in the first four years of the 21st century (Wu 2006). According to the National Bureau of Statistics, China's registered urban unemployment rate had risen to 4.3 percent by 2003, up from less than 3 percent before 2000, pointing to a problematic unemployment situation (see figure 16.1). At present, the 150-million-strong surplus labor in China's rural areas needs to migrate to nonagricultural jobs in cities and townships, while the cities and townships must absorb their own local labor force, which is increasing by 15 million on an annual basis. In recent years, urban and industrial development has spread into farmlands on a massive scale, with tens of thousands of farmers losing their lands each year. It has been reported that the number of landless farmers throughout the country has now reached 20 million.³ As these landless farmers cannot find jobs in nonagricultural sectors in cities and townships, serious social problems have occurred.

FIGURE 16.1. Secondary-Sector Employment and Urban Unemployment, 1991–2004



Source: National Bureau of Statistics, various years.

Also, for example, in recent years, some localities in China have produced high-energy-consuming and high-pollution products in massive quantities and exported them in return for foreign exchange revenues. Take aluminum electrodes for instance. In recent years, demand for aluminum ingots on the domestic and international markets has increased. Coupled with the fact that the production of aluminum electrodes may benefit from preferential electricity tariffs, various localities have, as a result, increased the production of aluminum ingots. In 2003, China exported 1.25 million tons of aluminum ingots, a dramatic rise of 0.5 million tons over 2002. Given China's short supply of aluminum oxide, in order to export aluminum electrodes, massive amounts of aluminum oxide need to be imported, which, after the electrolytic process, were then exported. Each ton of aluminum electrode exported was equivalent to the exportation of 15,200 kilowatt hours. As a consequence, in 2003, an additional 7.5 billion kilowatts of electricity were consumed, and, because of the massive imports by Chinese enterprises, the price and international freight costs of aluminum oxide rose, respectively, by 130 and 140 percent. After adjusting for cost increases, the profits on the accounting books of exporters edged up by only US\$90 million. If deductions are made for (1) the opportunity costs (approximately US\$1.1 billion) resulting from the additional use of electricity, (2) the cost underestimates caused by distorted factor prices, (3) the massive consumption of nonrenewable resources, and (4)

environmental costs, this gives a net loss amounting to US\$1 billion in national wealth.⁴ Because of the incentives for high profits on accounting records, various localities have put massive funds into the construction of aluminum electrode plants. Since 2004, the country's annual aluminum electrode capacity has reached 8 million tons, and another 5 million tons in capacity are planned or under construction. However, this unreal prosperity is unsustainable. In 2005, the aluminum sector already found itself faced with the dilemma of sectorwide losses.

Second, efforts in connection with technological innovation and product upgrading have been relaxed. China has abundant human resources, but these are, on average, characterized by a low level of educational attainment and a generally low cultural and technical level. This, however, does not suggest that China can only make both ends meet by relying on quantitative increases in extensively processed products and on selling physical labor to others. On the one hand, through development over the course of many years, China has gradually established a scientific and technological infrastructure that is complete in sectoral coverage and that also represents a material and technological basis for widely employing and developing technologies of the late 20th century. On the other hand, unlike other developing countries, China has a labor force that is better educated, more disciplined, and innovative, and, even in absolute quantitative terms, Chinese scientists and technologists capable of shouldering the task of technological innovation are not limited in number.⁵ In relation to the development of high-tech industries, China cannot expect to succeed overnight and integrate high-tech into the national economy as a whole. Yet, in some localities where conditions are ripe, we should endeavor to and may perfectly expect to achieve technical and product upgrading, as exemplified by efforts in the manufacturing sector to reach upstream and downstream into high value added activities such as independent research and development and brand name marketing.

Nevertheless, in the institutional and policy environments as described elsewhere above, many localities and enterprises have, in pursuit of short-term interests, preferred to depend upon massive inputs of inexpensive labor, capital, and natural resources in the production of products with low technological content and have tried to excel through quantitative expansion. They have been unwilling or unable to make progress in human capital accumulation and independent technology development. For instance, Beijing is one of the cities with the highest concentration of technical resources in the world; if the potential of its intellectual resources could be unleashed, Beijing would have unlimited prospects of economic development. However, after several years of efforts to implement its guiding principle of establishing the Zhongguancun high- and new-tech development zone into a high-tech base for innovation and a high-tech product manufacturing base, the city has been forced to admit that it is difficult to achieve high GDP and fiscal revenue growth in the short term by means of the development of high-tech industries. As a result, in the face of pressures in the form of the need to boost GDP growth targets and fiscal revenues, it has no choice but to turn to general processing industries that are low in technological content, but high in output value as a priority in economic development.

Third, severe shortages have now appeared in relation to land, freshwater, coal, electricity, petroleum, transportation, and other scarce resources. Adoption of a growth strategy that massively consumes resources has resulted in the very uneconomical consumption of China's scarce resources and the rapid emergence of severe bottlenecks in resources such as land and freshwater already not in abundant supply. As remarked by Ma Kai (2004), minister of China's National Development and Reform Commission, in 2003, China's GDP accounted for approximately 4 percent of the world total, while its resource consumption accounted for a percentage far higher than that of GDP (see table 16.3).⁶

TABLE 16.3. China's Resource Consumption as a Percentage of the World Total

<i>Crude oil</i>	<i>Crude coal</i>	<i>Iron ore</i>	<i>Steel products</i>	<i>Aluminum oxide</i>	<i>Cement</i>
7.4	31	30	21	25	40

Source: Ma 2004.

Wang (2005) points out that the coefficient of elasticity of electricity consumption of various countries around the world during the process of industrialization has been around 0.8 percent, that Japan's coefficient of elasticity of energy consumption during the accelerated industrialization phase in the 1960s and 1970s was merely 1.21, and that, although in the range of 0.8 and 1 over the past 40 years, the corresponding figure for China during the past few years has jumped to 1.6 at a time when the majority of provinces have resorted to measures imposing limits on the usage of power supplies. This obviously has a direct link with the fact that China's industrial structure is characterized by significant irregularities and that the development of high-energy-consumption heavy and chemical industries has been too rapid.

China does not have rich petroleum reserves, and its primary energy resource is mainly raw coal. In 2000, China produced 998 million tons of raw coal. In the first three years of the 10th FYP, although the output of raw coal grew at 15 percent on average, the demand was still not being met. This has, in turn, provided incentives for some coal mines to go ahead with predatory mining beyond their capacity. At the same time, some coal mines where the safety devices did not meet regulatory requirements continued operations, as a result of which disasters frequently occurred. China's death rate per ton of coal ranks first in the world. Meanwhile, some visionary individuals have, for many years, been calling for measures to curtail the production and consumption of high-emission automobiles; however, to support the development of the automobile sector, such measures have not yet been unveiled. China has now become the world's second biggest oil consumer, next only to the United States. In 2004, China imported 123 million tons of crude oil, accounting for 4 percent of the total volume of domestic consumption.⁷ The continuously increasing degree of reliance upon petroleum, which is a strategic resource, will seriously affect China's economic security.

At the same time, many localities have made great efforts to develop high-energy-consuming industries as an important step in rejuvenating the local economy. According to the Xinhua News Agency, in recent years, some provinces in western China have exerted big efforts to establish "high-energy-carrier industrial parks" and plan to turn their jurisdictions into a "world-class" high-energy-consuming product base. The outcome is that some localities previously free from the problem have started to face power and coal shortages.⁸ China's huge demand for energy from across the world has led to dramatic rises in energy prices. As statistics of the People's Bank of China show, on the international market, the prices of coal and crude oil rose by 41.7 percent and 30.2 percent, respectively, in 2004 relative to the same period of the previous year.⁹ Xu Kuangdi (2004), fellow of the Chinese Academy of Engineering, points out that, if China were to follow the beaten track of the traditional industrialization approach, its energy consumption would be more than for China and the world at large to bear.

Resources such as land and freshwater are nontradable goods that are difficult to obtain through international trade. Under the current growth strategy, resource bottlenecks have given rise to hard constraints on the economic development of some localities. For example, China's per capita possession of land is far lower than the world average. Furthermore, the population is

unevenly distributed relative on the land, with 94 percent of the population living off 46 percent of the country's territory. Hence, the need to cherish land as if it were gold. However, in good-image projects and political achievement projects that have been undertaken over the past few years, the phenomenon of the serious wastage of land resources can be found everywhere. One may readily come across huge buildings, huge squares, and massive development zones where a production unit easily occupies up to one thousand *mu* of land for flower planting. (A *mu* is approximately 666.7 square meters.) As indicated by a report of the Ministry of Land and Resources in 2004, in recent years, governments at various levels have established 6,866 development zones of different sorts, which have occupied 38,600 square kilometers (579,000 *mu*) of land, most of which is farmland.¹⁰ Coupled with land allocated for other uses, in 2003 alone, the area of China's farmland dropped by 38.1 million *mu*. The acreage of arable land in the city of Shenzhen is similar to that of Hong Kong. Hong Kong has been under development for over a century, but, by the year 2003, it had developed only 22 percent of its arable land.¹¹ With its GDP only accounting for one-sixth of that of Hong Kong, Shenzhen has, in recent years, found itself experiencing land shortages, without large patches of land for development or even survival. Some people have put forward requests for transfers of land from neighboring districts.¹²

Fourth, China's ecological environment has worsened at an accelerated pace. China's extensive urban construction and industrial development, in particular the development of heavy and chemical industries, which involves substantial energy consumption, high water consumption, significant pollution, and large-scale occupation of land, has given rise to environmental degradation that has not been brought under effective control. Some localities have found that their basic manufacturing and living environments are being destroyed.

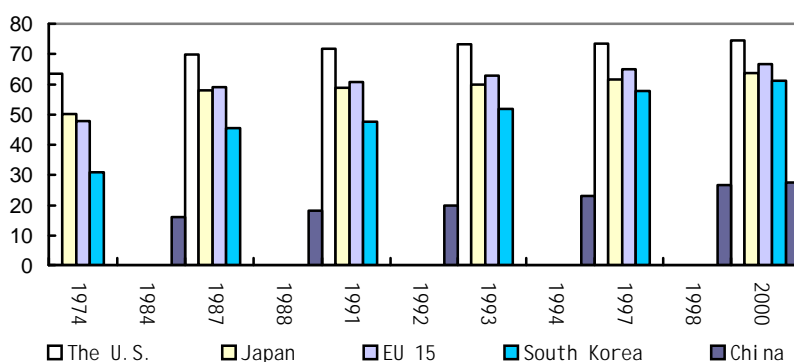
In the course of industrialization, China's environmental degradation has been getting worse by the day.¹³ The amount of solid industrial waste increased from 580 million tons in 1990 to 816 million tons in 2000. At present, the daily volume of sewage discharge is around 130 million tons, and nearly half the river courses of seven major river systems are seriously contaminated. Many cities have serious air pollution. The coverage of acid rain accounts for one-third of the nation's area. Countrywide, the area affected by diminishing surface water and serious soil erosion has reached 360 million hectares, or 38 percent of the territory. The spread of desertification has reached 170 million hectares, or 18.2 percent of the country's territory (Han 2004). According to World Bank statistics in 1997, losses caused by air and water pollution were equal to 3 to 8 percent of China's GDP (UNDP 1999, 74).

The North China Plains produce half of China's wheat and one-third of its corn and, at the same time, is an area with serious shortages of water. Nevertheless, in recent years, Beijing, Hebei, Shanxi, and Tianjin have been making great efforts to develop coal, steel, and automobile industries that are highly water consuming. In Hebei Province alone, there is a nearly 60 million ton steel and iron smelter capacity, a considerable portion of which is based upon high-consumption, high-cost, and high-pollution smelters.¹⁴ Even among larger-scale and more technologically sophisticated steelmakers, to produce 1 ton of steel requires the consumption of 16 tons of water. When there is no supply of surface water, underground water is tapped to make up for the shortage. According to a report by the Sandia National Laboratory in the United States, 55 billion tons of water were obtained from the Hai River in the year 2000, 21 billion tons more than the river's sustainable supply volume of 34 billion tons. Such a gap is closed by tapping underground water. An underground water measurement report released by the Chinese Institute of Geological and Environmental Monitoring in August 2001 shows that the water table in the

North China Plains was dropping more rapidly than previously reported. Overtapping has greatly depleted the shallow water storage layer; as a result, well-diggers have to turn to the deep water storage layer. The report says that the average water table of the deep water storage layer in Hebei Province dropped by 2.9 meters in the year 2000 alone, with the water table in some cities of the province dropping by as much as 6 meters. In light of the fact that the deep water storage layer cannot be replenished, the depletion of the deep water storage layer in the North China Plains is causing this region to lose the last bit of its water reserves (Brown 2003, 24).

Fifth, the development of the services industry, which has an important bearing upon the increase in the overall efficiency of the national economy, has been inhibited. The traditional version of socialist political economy defines services as nonproductive labor, and the command economy focuses its attention on the growth of material product. Under the influence of such theories and policies, the output of China's services industry has consistently and seriously been on the low side. Because of structural adjustment, which has taken place over the course of many years since the start of the reform and opening-up drive, the output value of the tertiary sector accounted for around 33 percent of China's GDP at the turn of the millennium, lower than both the average level in the rest of the world (60 percent) and the average level in low-income countries (45 percent)¹⁵ (see figures 16.2 and 16.3).

FIGURE 16.2. The GDP Share of Services in China and Selected Countries



Sources: Statistical Databases, United Nations Statistics Division. <http://unstats.un.org/unsd/databases.htm> (accessed July 4, 2004). Data on China: National Bureau of Statistics, various years.

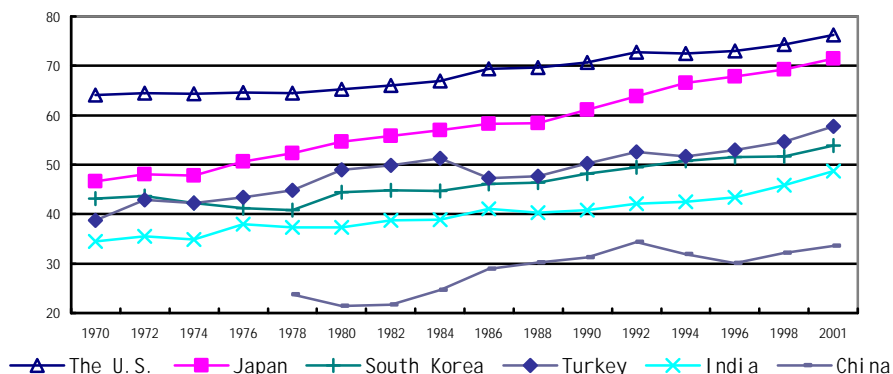
Note: Data are calculated on the basis of current year prices.

In the wave of efforts to strengthen the heavy-industry component in industrial structures on the part of some localities in the past few years, China's services industry, as a percentage share of GDP, decreased instead of increasing as the distortions in industrial structures became more salient (see table 16.4).

A major trend in the development of the services industry in the 20th century was that the productive services sector was evolving more rapidly than the consumptive services sector. The productive services sector has witnessed development in a number of aspects. One is so-called integrated logistics management or supply-chain management that regards logistic services as a

critical link in the supply chain. In a supply chain, the marketing and distribution phase usually captures the vast majority of value added and profits. Even within the manufacturing sector, there has been vertical consolidation of such activities as research and development, design, supply-chain management, brand marketing, after-sales services, and financial services. As a result, modern manufacturing is integrated with the services industry and, thus, the services-manufacturing industry. As they are laggards in terms of service operations, Chinese enterprises are usually reduced to the status of selling their physical labor and engaging in economic activities low in the value chain in terms of value added and profit margins, such as simple processing and assembly; they turn over the hefty profits arising from research and development, design, brand marketing, and financial services to others. The selling price of a product that a Chinese enterprise (original equipment manufacturer) manufactures for a foreign enterprise is very low and usually one-fourth or even one-tenth of that of the vendor. The original equipment manufacturer only obtains a meager processing income.

FIGURE 16.3. Changes in the GDP Share of Services in China and Selected Countries



Sources: Statistical Databases, United Nations Statistics Division. <http://unstats.un.org/unsd/databases.htm> (accessed July 4, 2004). Data on China: National Bureau of Statistics, various years.

TABLE 16.4. GDP Share of the Output Value of the Tertiary Sector, 1980–2004
percent

1980	1984	1990	1994	2000	2001	2002	2003	2004
21.4	24.7	31.3	31.9	33.4	33.6	33.5	33.1	31.9

Source: National Bureau of Statistics, various years.

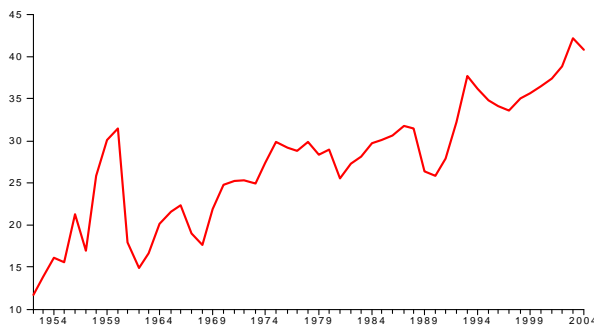
In a commentary carried in January 2004, the *Wall Street Journal* cited Logitech International as an example of the role China plays in the global division of labor. This company, headquartered in California, has a factory in Suzhou, which exports 20 million units of the Wanda wireless mouse to the United States. The mouse sells for US\$40 per unit in the United States. According to a breakdown of that price, Logitech gets US\$8 (20 percent); distributors and retailers capture US\$15 (37.5 percent); Motorola, Inc. and Agilent Technologies, Inc., Logitech’s

spare parts suppliers, snatch US\$14 (35 percent); and China obtains the remaining US\$3 (7.5 percent). This amount of US\$3 needs to cover the wages of 4,000 employees in Suzhou and the energy, transportation, and other administrative costs. The total income of Logitech's 450-person marketing team in California is far higher than the total income of the 4,000 Chinese employees in the Suzhou plant. As remarked in the commentary in the *Wall Street Journal*, Logitech's Suzhou warehouse might be called the current global economy in miniature.¹⁶

Because the value added and profit margins of their export products are too low, many Chinese exporters can only win through volume, and they sustain their business operations by increasing their export volumes. These exports will, in turn, inevitably lead to trade frictions, increase antidumping investigations, and add to the difficulties of export operations. Some commentators have characterized the situation caused by the traditional growth strategy by saying that we have consumed a large quantity of nonrenewable resources, suffer from environmental pollution, and shoulder a bad name for dumping, while the lion's share of profits is not in our hands.

Sixth, for a developing country such as China, capital is a very valuable, scarce resource that needs to be highly cherished and effectively employed. However, with the rise of the heavy-industry trend in many localities in the 1990s, as demonstrated by economist Robert Solow in his analysis of early growth models, growth driven by investment has resulted in a decline in the return on investment and an increase in investment's share of GDP (Easterly 2002, 26–50). The share of investment in China's GDP rose from about 25 percent at the beginning of the reform and opening-up drive to over 40 percent starting in 2003 (see figure 16.4).¹⁷ At the same time, the efficiency of investment displayed a downward trend, with the incremental capital-output rate, a measure of investment efficiency, rising from 2–3 percent before 1997 to 5–7 percent thereafter (see figure 16.5).¹⁸

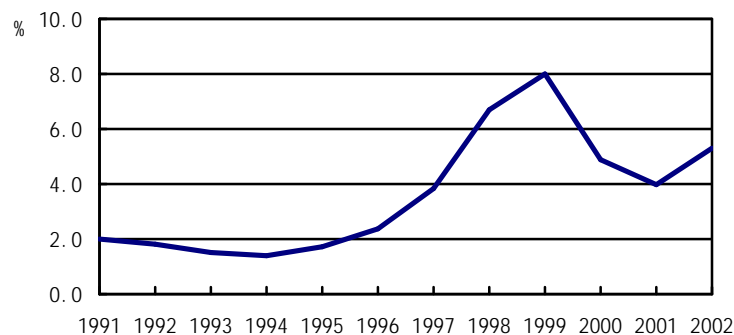
FIGURE 16.4. Investment as a Share of GDP



Source: CEIC Data. <http://www.ceicdata.com/>.

After careful analysis of the growth path of the Chinese economy over the past 20 years, Professor Zhang Jun confirms this consequence of overinvestment (Zhang 2003, 228–339).

The short-term consequences of the constant rise in the investment rate and the distortion of the structure of investment and consumption are that: (1) capacity expands too rapidly, while demand is ultimately insufficient; (2) incomes among low-income groups rise only slowly, resulting in increasing income inequality between the rich and the poor; and (3) the external trade surplus and the country's foreign exchange reserves increase on a massive scale, reducing the room for maneuver in connection with the use of macroeconomic policy.

FIGURE 16.5. Investment Efficiency: The Incremental Capital-Output Rate

Source: CEIC Data. <http://www.ceicdata.com/>.

The long-term consequences are the accumulation of financial risks. Given that, in recent years, the overinvestment wave has basically been supported by loans extended by commercial banks, the consequences will inevitably be reflected in China's financial system and lead to a hidden financial problem in the form of mounting nonperforming loans within the banking system. Since the growth supported by bank loans is a kind of borrowed prosperity,¹⁹ at a time when the investment rate is not high, the risk of bad loans will be accumulated quietly during the upswing period of the business cycle. When the business cycle is in its downswing period or when there are external shocks, the systemic risk across the financial system will become overt. Currently, in China, the incremental capital-output ratio remains high and has reached a level similar to that in some East Asian countries before the 1997 financial crisis, namely, to increase GDP by Y1, it is necessary to invest Y5. As Professor Krugman (1999) points out, the fact that some countries had adopted an investment-driven growth strategy was one of the reasons the East Asian financial crisis occurred. We have to learn from the lessons that history has to offer, take preemptive measures, and avert such a crisis in China.

The crux lies with unswerving efforts to stick with reform

China should thoroughly transform its economic growth strategy, embark on a new industrialization path, and regard the development of an energy-saving and environment-friendly economy as the basic guiding principle for the 11th FYP and an even longer time frame. Only by chartering such a path can China, in the years to come, achieve sustained and relatively rapid growth and smoothly realize the target of making the nation wealthy and the people rich. Based on the historical experience of advanced countries, China, as a developing country in the mid-to-late phase of industrialization, needs to exert efforts in the following areas so as to change its growth strategy and improve the quality of its growth: (1) encourage indigenous innovation and product upgrading and promote the use of science-based technologies in various areas of the national economy; (2) undertake great efforts to develop the services industry, in particular the productive services sector; (3) make use of modern information and communications technologies to increase the efficiency of various industries in the national economy; and (4) work hard to raise job opportunities so that a larger share of the workforce can shift from low-efficiency agriculture to higher-efficiency urban nonagricultural jobs.

To achieve the target of transforming the growth strategy, it is imperative to deepen

economic and political reform, eliminate the institutional impediments to the transformation of the growth strategy, and improve the market economic system. With regard to the structural reform of the economy, of most current importance is (1) to continue with adjustment in the profile of the state-owned economy according to the policy of making advances in some sectors, while exiting from others in an effort to break down sectoral monopolies by state-owned enterprises and push ahead with reform in the nontradable share of state-owned enterprises; (2) to speed up the market-oriented reform of the financial system; and (3) to reduce the government's administrative interference in prices and correct the distortions in factor prices and so on. It should be noted that the crux of the effort to improve the market economic system lies with the government.

China's situation at present, as remarked by Premier Wen Jiabao, is that "governments at various levels are still taking care of many things that they should not be doing and cannot do well in, while they are not doing a good job in relation to the things that governments should be doing."²⁰ To ensure the development and effective functioning of the socialist system, it is necessary to build a limited, but effective government. By a limited government is meant that, unless and until the market fails, the government should refrain from interfering in market transactions and the micro-decision-making behavior of enterprises and that different localities, sectors, and enterprises should allocate resources according to their own preferences. An effective government requires that the government perform its various responsibilities at low cost. Among such responsibilities, the most important are, in the first place, to provide an environment of the rule of law for the normal functioning of the market economy and to administer justice fairly and impartially; second, to rely on aggregate tools to ensure macroeconomic stability; third, to provide free and compulsory education and build up a good educational system; and, fourth, to provide minimum security for the well-being of the population as a whole and build up a safety net that covers the whole society.

Efforts to push ahead with government reform need to be integrated with efforts to improve the market economic system. In the majority of situations, excessive interference in the allocation of resources by the government is concomitant with the imperfections of the market system. The imperfections of the market system provide an excuse for the government's excessive interference, while the government's interference makes it difficult for the market system to improve and even makes it even more imperfect. At present, this situation is the worst in factor markets, in particular the market for land for urban development, the credit market, and the capital market. It therefore follows that, to achieve greater progress in government reform, it is essential to push ahead in nurturing factor markets and the reform of the financial sector, while speeding up the development of the norms and institutions necessary for the market mechanism to play its proper role, particularly in the allocation of land, credit, and capital, and facilitating the government's withdrawal. One of the core tasks is to streamline the pricing regime of various factors of production. Today, because of insufficient nurturing of factor markets and excessive interference by the government, the prices of labor, capital, land, and natural resources are distorted to differing degrees; some are severely distorted. The crux of reform is to bring into play the market mechanism's price-setting role and eliminate distortions so that prices can fully reflect the scarcity of resources and the opportunity costs and provide a scientific basis for the decision-making process of microeconomic entities.

An important policy move designed to facilitate government reform is the reform of the monitoring and evaluation mechanism of government performance. There used to be a conceptual idea that the current evaluation method, whereby officials are assessed only in a top-

down manner and there is no bottom-to-top election or monitoring, should not change; the emphasis was placed, instead, on improving evaluation criteria. As a matter of fact, it is extremely difficult to come up with a set of scientific evaluation criteria. What is important is to increase the transparency of the government performance evaluation process and the effective use of the general public's democratic rights, so that various stakeholders and the general public may actively participate in the monitoring and evaluation of the government and its leading officials.

Government reform, in essence, is the process of having the government reform itself; given that this exercise will involve the powers and interests of a multitude of officials, it is inevitable that all kinds of difficulties and barriers will exist. As a result, efforts to push ahead with government reform will, first and foremost, require government leaders to have the political determination to overcome difficulties and stumbling blocks. At the same time, this cannot occur without the monitoring and empowerment of various quarters of society. In 2004, the Chinese government formulated the "Outline of Efforts Comprehensively to Push Ahead with Administration according to Law," which is a roadmap for the next 10 years in government reform, with the establishment of a government based on the rule of law as the target. The current major task in efforts to advance government reform is to show firm political determination, overcome all sorts of impediments and resistances, and implement this outline.

Notes

¹ "The Guideline of Economic Construction in the Years to Come," *People's Daily*, December 2, 1981.

² It is only for the sake of supporting the export-oriented policy that the foreign exchange rate of the home currency is undervalued instead of being overvalued as in the import-substitution scenario.

³ "Urban Development Cannot 'Kick Away' Landless Farmers," Xinhua News Agency, Beijing, March 8, 2003.

⁴ In 2004, in Zhejiang Province alone, there was a power shortage of over 75 billion kilowatt hours, and over half of all private enterprises, on average, suffered from power stoppages for 11.3 days on a monthly basis. The direct economic losses caused by power shortages reached Y100 billion, equivalent to Y1.33 in opportunity costs for each kilowatt of electricity (compare to the Y8.36 in Shanghai). See "Country-wide Power Shortages Have Caused Severe Losses and the Massive Power Shortages Are Attributable to Natural (30%) and Man-Made (70%) Disasters," *China Business Times*, December 22, 2004. If one takes only this factor into consideration, the Y800 million accounting profits in the aluminum electrode sector have generated over Y10 billion in losses in national wealth.

⁵ In 2001, the number of students enrolled in Chinese institutions of higher learning reached 15.1 million, ranking first in the world. (See UNESCO 2003, 7.) Chen Zhiwu (2004) also points out that, although, from the perspective of the quality of the population as a whole, the Chinese population is low in educational attainment, yet "in terms of the absolute figure, the number of people in China that have received higher education is in the vicinity of 50 million (representing 5.7% of the total adult population), or nearly half of the U.S. labor force, bigger than the labor force either in the U.K., France, Italy, or Germany, and bigger than the total population of Spain."

⁶ Of course, considering that China is currently at the initial stage of modernization, its massive build-up in infrastructure needs to consume a larger share of raw materials such as steel products and cement for each unit of GDP output. In addition, due to factors such as exchange rates, China's GDP as a percentage of the world total may have been underestimated, and thus the amount of physical inputs into each unit of China's GDP may have been overestimated. Even if such factors are taken into consideration, the problem of high input levels and low output in the Chinese economy is still a serious one. For example, in the past few years, India has achieved economic growth rates ranging from 6 to 8 percent with an investment rate of less than 20 percent of GDP, while China has only realized 7–9 percent GDP growth with an investment of nearly 50 percent of GDP.

⁷ “Speech of Mr. Fu Ziying at the Meeting for the Establishment of the Iron Ore Branch of the CCCMC,” March 10, 2005. <http://fuziying2.mofcom.gov.cn/aarticle/speech/200508/20050800327172.html>.

⁸ Chu Guoqiang, Liu Jun, and Xiong Congming, “Beware that China Becomes a Center for the Transfer of the World's High-Energy-Consuming Industries,” Xinhuanet, Beijing, December 8, 2004.

⁹ “Analysis and Prediction of the Industrial Situation in 2004–05: The Energy Bottlenecks Will Continue in 2005,” *Shanghai Securities Daily*, January 20, 2005.

¹⁰ “China's Farmland Saw a Net Loss of Nearly 40 Million Mu in 2003,” Xinhua News Agency, February 24, 2004.

¹¹ Hong Kong Special Administrative Region of the People's Republic of China. “Table 31: Land Usage (as at 31 December 2003).” *Hong Kong 2003*. http://www.yearbook.gov.hk/2003/english/append/app6_31.html.

¹² Data are taken from Shenzhen Government, “Statistics Bulletin 2003 on National Economic and Social Development.” (A page of relevant statistics is available in Chinese at Shenzhen Government Online, <http://www.shenzhen.gov.cn/jingji/tongji/2003yxqk/200404190207.htm>.) Also, see “Surplus Land Only Enough for 10 Years of Development,” *Nanfangdoushibao*, March 8, 2004.

¹³ A considerable portion of the foreign direct investment that China has absorbed is in the high energy-consuming and high-polluting industries that advanced countries shift out of their own territories. The products of these industries are ultimately exported in large quantities to advanced countries so that these countries have completed the shift of their own pollution elsewhere. See Diamond (2005), in particular page 370, in relation to the amount of foreign direct investment involved in shifting pollution-intensive industries to China.

¹⁴ In regard to other negative consequences of the strategy adopted by Hebei Province of centering around steel in the development of heavy and chemical industries, also see Hu (2004).

¹⁵ The relatively low percentage share of the services industry in China's GDP is partly due to the technical reason that the output value of services in the manufacturing sector is not included. However, even if this factor is eliminated, it still remains that China's services industry accounts for a relatively low percentage share.

¹⁶ Andrew Higgins, “As China Surges, It Also Proves a Buttress to American Strength,” *Wall Street Journal*, January 30, 2004 (A1 edition).

¹⁷ This figure is far higher than the highest level posted by Japan, a country with a propensity for overinvestment, during its high-speed growth period. Based on data provided by Weijian Shan,

even during the high-speed industrialization phase at the turn of the 20th century and during the postwar recovery period, the United States did not have an investment rate over 20 percent. In Japan, the highest level of the investment rate was 32 percent in the 1960s and 1970s. See Weijian Shan, "China's Yuan is Overvalued," *Asian Wall Street Journal*, June 23, 2005.

¹⁸ As pointed out by China's National Development and Reform Commission Minister Ma Kai, 10–20 percent of GDP in France, Germany, India, and the United States is used for investment purposes, while the figure for China is 40–45 percent. In the former countries, to increase GDP by an additional Y100 million, Y100 million to Y200 million of investment is required, while, to achieve the same result in China in the past few years, the requirement has been an investment of Y500 million (Ma 2004).

¹⁹ Weijian Shan, "The Great Paradox in the Growth of the Chinese Economy," *Caijing Magazine*, 2003.

²⁰ Wen Jiabao, "Explanations about the Proposal with Regard to the Formulation of the 11th Five-Year Plan," October 19, 2005. <http://news.sina.com.cn/c/2005-10-20/10187217226s.shtml> (in Mandarin).

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