
Sustaining Economic Growth in China

China's economic growth is unsteady, unbalanced, uncoordinated, and unsustainable.

—Wen Jiabao, March 2007

Premier Wen Jiabao's statement at his press conference following the close of the annual meeting of China's legislature in March 2007 was remarkable for two reasons. First, China's growth record is the envy of the world, with expansion averaging 10 percent for three decades. Second, since the assessment came from the man who had been in charge of the economy for the previous five years, it was an unusual self-criticism. What thinking underlies Premier Wen's assessment, and what policies is he promoting to make China's growth more sustainable?

Premier Wen and the rest of China's top political leadership seek to rebalance the sources of economic growth. In place of investment and export-led development, they have endorsed transitioning to a growth path that relies more on expanding domestic consumption. The Chinese Communist Party formally embraced this goal as early as December 2004 at the annual Central Economic Work Conference.¹ Since then, Premier Wen has reiterated the goal of making domestic consumption a much more important source of China's economic growth.²

China's goal of rebalancing the sources of economic growth is laudable. It increases the likelihood of China's sustaining its strong growth, creating jobs more rapidly, improving the distribution of income or at least slowing the pace of rising income inequality, and reducing China's outsized increases in energy consumption and carbon emissions. It also would help reduce global economic imbalances and thus lessen the risks to the global economy and reduce the possibility that China would be subject to protectionist pressure, especially in Europe and the United States. For these reasons, US Treasury Secretary Henry Paulson, Jr. has repeatedly urged Chinese leaders to rebalance the sources of growth, and Federal Reserve

Chairman Ben Bernanke, in his only speech on the Chinese economy, focused his remarks almost entirely on the case for rebalancing.³

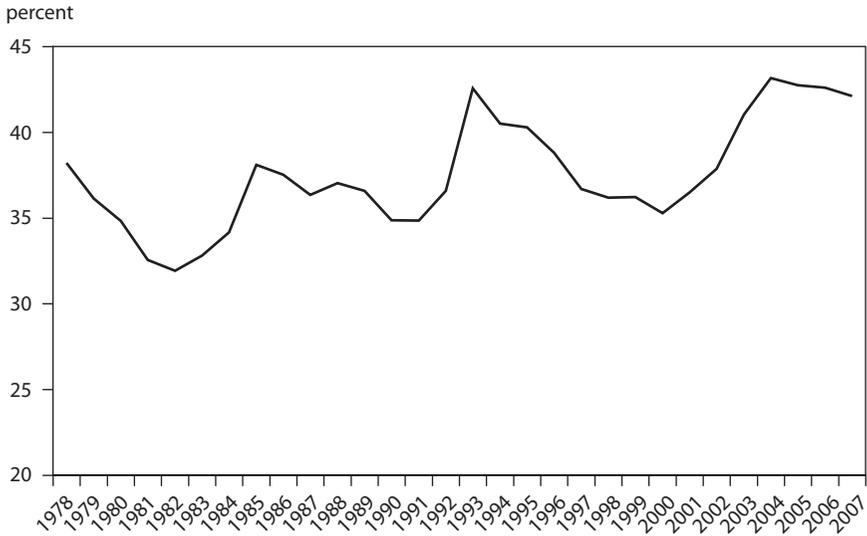
But rebalancing the sources of economic growth has proven to be a much greater challenge than initially expected, and in certain respects China's economic growth has become even more imbalanced since 2004. Although the growth of investment expenditures moderated slightly after 2004, net exports of goods and services soared. China's external surplus ballooned to a global record in 2006 and continued to expand at a break-neck pace in 2007. Most importantly, private consumption expenditure as a share of GDP continued to fall through 2007.

Sources of China's Economic Growth

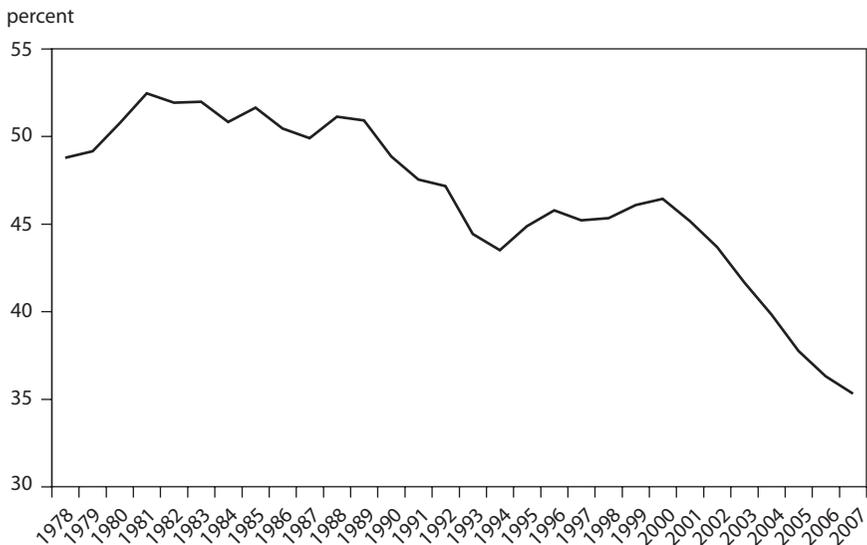
China has been the fastest growing economy in the world for over three decades, expanding at 10 percent a year in real terms. As a result, real GDP in 2006 was about 13 times the level of 1978, when Deng Xiaoping launched China on the path of economic reform.⁴ China is now the world's third largest trader and, measured at market exchange rates, its fourth largest economy. It is highly likely to move up a notch in each category in 2009. Given this stunning long-term success, why would China's leadership seek to shift to a new growth paradigm? In global perspective, how imbalanced is China's recent economic growth?

In all economies, the expansion of output is the sum of the change in three components: consumption (both private and government), investment, and net exports of goods and services. Expanding investment has been a major and increasingly important driver of China's growth. As shown in figure 6.1, investment averaged 36 percent of GDP in the first decade or so of economic reform, relatively high by the standard of developing countries generally but not in comparison with China's East Asian neighbors when their investment shares were at their highest.⁵ But since the beginning of the 1990s, China's average investment rate has been higher and in 1993 and again in 2004–07 exceeded 40 percent of GDP, a level above the experience of China's East Asian neighbors in their high growth periods.⁶ Rising investment has been fueled by a rise in the national saving rate, which reached an unprecedented level of more than half of GDP in 2006.⁷ Rising investment was particularly important in 2001–05, when on average it contributed just over half of China's economic growth, an unusually high share by international standards.⁸

The growth of both household and government consumption has been rapid in absolute terms throughout the reform period. But in most years, growth of consumption has lagged the underlying growth of the economy, a lag that has become particularly noticeable since 2000. As shown in figure 6.2, in the 1980s household consumption averaged slightly more than half of GDP. This share fell to an average of 46 percent in the 1990s. But

Figure 6.1 Investment as percent of GDP, 1978–2007

Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2007*; ISI Emerging Markets, CEIC Database.

Figure 6.2 Household consumption as percent of GDP, 1978–2007

Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2007*; ISI Emerging Markets, CEIC Database.

Figure 6.3 Government consumption as percent of GDP, 1978–2007

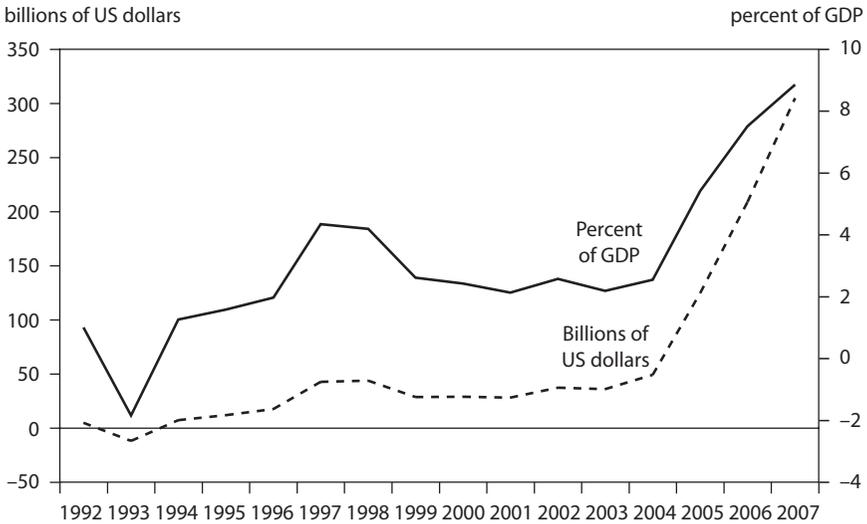
Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2007*; ISI Emerging Markets, CEIC Database.

after 2000, household consumption as a share of GDP fell sharply—and by 2007 accounted for only 35 percent of GDP, the lowest share of any major economy in the world.⁹ In the United States, household consumption accounted for 70 percent of GDP in the same year.¹⁰ In the United Kingdom, it was 63 percent, and in India, 56 percent.¹¹

As shown in figure 6.3, government consumption as a share of GDP has been relatively stable, averaging around 14 percent throughout the reform period. But it declined from a peak of over 16 percent of GDP in 2001 to under 14 percent in both 2006 and 2007.

As a result of these trends in household and government consumption, the relative importance of consumption as a source of growth during the past two decades diminished substantially, particularly compared with that of investment. In the first half of the 1980s, consumption growth accounted for almost four-fifths of China's economic expansion, whereas since 2003, this share has fallen to less than two-fifths.¹²

Beginning in 2005 the growth of net exports of goods and services also became, for the first time in almost a decade, a major source of economic growth. As shown in figure 6.4, net exports of goods and services in 2005 more than doubled to reach \$125 billion, or 5.4 percent of GDP. They expanded rapidly in the ensuing two years, by 2007 reaching \$305 billion, or 8.9 percent of GDP. On average, in 2005–07 the expansion of net exports accounted for over a fifth of China's growth.¹³

Figure 6.4 Net exports of goods and services, 1992–2007

Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2007*; ISI Emerging Markets, CEIC Database.

In sum, despite the decision of the Party in 2004 to increase the role of domestic consumption demand in sustaining economic growth, consumption as a share of GDP has continued to fall and its contribution to China's economic growth has been modest. The government has been successful in slightly moderating the growth of investment. By 2007 the investment share of GDP had fallen by one percentage point and the contribution of investment to GDP expansion had fallen to about two-fifths, substantially less than the extraordinarily high average of 60 percent in 2003–04. On the other hand, net exports of goods and services have soared both absolutely and as a share of GDP, and thus their contribution to economic growth is currently unusually large, leading Premier Wen to opine at the National People's Congress in the spring of 2006 that "we must strive to reduce our excessively large trade surplus."

Rethinking China's Growth Strategy

Several considerations informed the formal decision of China's leadership in 2004 to rebalance the sources of growth. First, investment-driven growth, or what the Chinese sometimes call extensive growth, appeared to be leading to less efficient use of resources. By some metrics, as investment growth accelerated, the efficiency of resource use declined. Multifac-

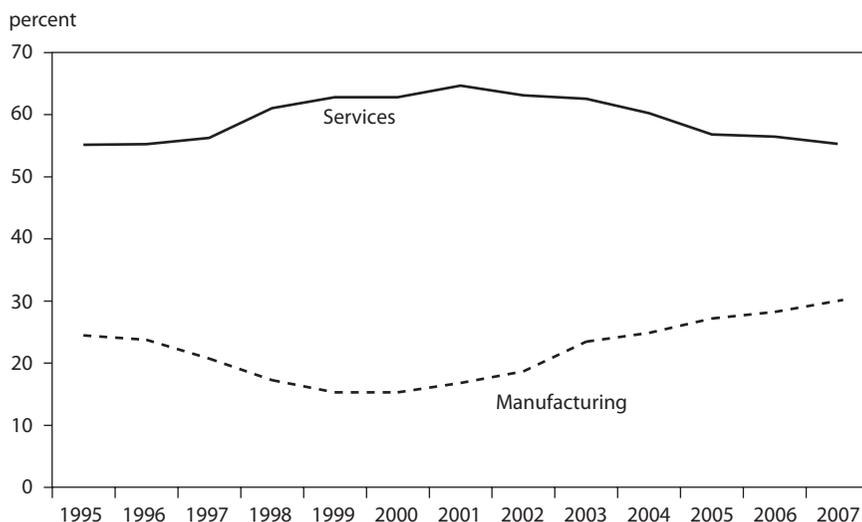
tor productivity growth, a critical contributor to economic expansion in all economies, averaged almost 4 percent per annum in the first 15 years of economic reform (1978–93) but has slowed to only 3 percent since 1993.¹⁴ In short, as the investment share of GDP rose, the contribution of productivity improvements to GDP growth fell. In the words of Martin Wolf, chief economics commentator for the *Financial Times*, the surprising thing about the Chinese economy in recent years is not, as is so frequently asserted, how fast it is growing but rather, given the outsized share of output devoted to investment, that it is not growing even faster.¹⁵

The second reason underlying the leadership decision to rebalance the sources of growth is the desire to increase personal consumption and alleviate or at least slow the pace of increasing income inequality. In 2005 personal consumption in China was 30 percent less in real terms than the level that would have been achieved if the household consumption share of GDP had remained at the 1990 level rather than falling by more than 10 percentage points. India offers a useful comparison. In 2004 China's per capita GDP was two-and-a-half times that of India. But, because household consumption as a share of GDP was so much lower in China, per capita consumption exceeded that in India by only two-thirds.¹⁶ The ultimate purpose of economic growth everywhere is to improve human welfare. By this standard, China is falling far below potential.

Similarly, a portion of the increase in income inequality in recent years can be attributed to the highly imbalanced regional pattern of growth. The positive differential in the pace of growth in coastal provinces compared with the national average has increased along with the sharply higher pace of growth of foreign trade (particularly exports) that has occurred since 2000.¹⁷ Moving away from heavy reliance on export-led growth thus is consistent with President Hu Jintao's emphasis on creating a more "harmonious society," which requires, among other things, more balanced development between coastal and inland areas.

Third, China's extensive development has generated very modest gains in employment. Between 1978 and 1993, employment expanded by 2.5 percent per annum, but between 1993 and 2004, when the investment share of GDP was much higher than in the 1980s, employment growth slowed to only slightly over 1 percent.¹⁸ The recent more capital-intensive pattern of growth contributed to a slower pace of job creation for the simple reason that the steel, aluminum, cement, and other investment goods industries employ far fewer workers per unit of capital than do consumer goods industries, not to mention the even less favorable comparison with services. But, as shown in figure 6.5, as investment boomed and the renminbi became increasingly undervalued, the share of investment in urban areas going to the services sector declined from 63 percent in 1999 and 2000 to 55 percent by 2007. Over the same period, the share of investment going to manufacturing doubled from 15 to 30 percent.¹⁹ This clearly slowed the

Figure 6.5 Manufacturing and services share of urban investment, 1995–2007



Note: Investment in services includes property development.

Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2007*; ISI Emerging Markets, CEIC Database.

rate of growth of job creation compared with what would have occurred with more balanced growth.

The fourth reason China's leadership wishes to transition to a more consumption-driven growth path is burgeoning energy consumption and its detrimental effects on the environment. Investment-driven growth has required the output of machinery and equipment, and the inputs to produce them, to grow much more rapidly than the output of consumer goods. Rapid growth of output of investment goods, in turn, disproportionately increases the demand for energy.²⁰ China's energy elasticity of GDP growth (the number of units of energy required to produce an additional unit of output) averaged a modest 0.4 in the 1980s and 1990s, leading over time to a substantial reduction in the amount of energy required to produce each unit of GDP. But this ratio almost tripled to an average of 1.1 in 2001–06.²¹ Although China continued to achieve energy efficiency gains in the production of virtually all products, from 2001 through 2006 these gains were no longer sufficient to offset the effect of the rapid expansion of the most energy-intensive sectors of manufacturing, especially steel, chemicals, and cement.²²

Since two-thirds of China's energy comes from coal, the burgeoning demand for energy generated by capital-intensive growth boosted coal con-

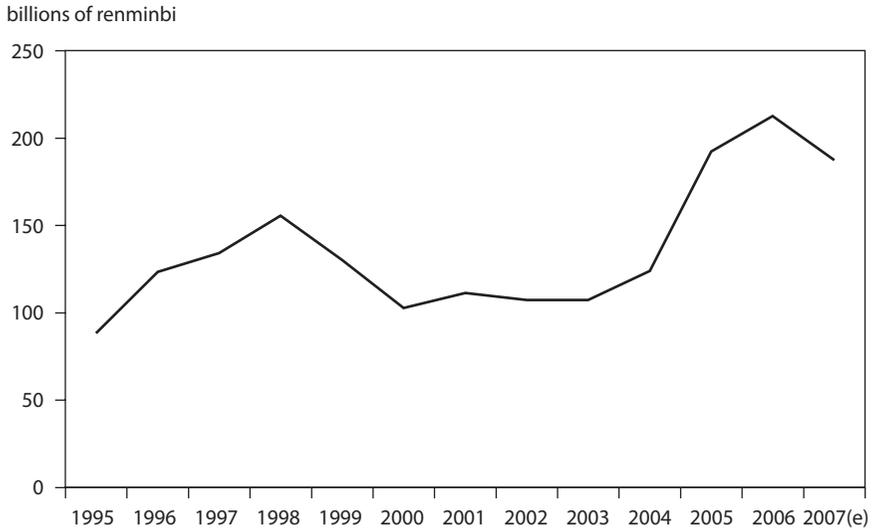
sumption by two-thirds between 2000 and 2005. Coal consumption reached more than 2 billion tons in 2005, almost twice the level of coal consumption in the United States, even though China's economy is only one-sixth the size of that of the United States. As a result, China is now the largest emitter of greenhouse gases. China is home to 16 of the 20 cities with the worst air pollution on the globe. Because of the massive increase in coal consumption, the State Environmental Protection Agency (SEPA) reported that rather than sulfur dioxide emissions declining in 2000–2005 by 10 percent to 18 million tons as planned, they rose to 25.5 million tons by 2005, 42 percent above the goal.²³

A fifth factor motivating China's leadership is less obvious but still important. Excessive reliance on investment and net exports to drive growth threatens to undo some of the progress China has made in recent years in developing a commercial banking system. A critical component of this process has been the injection of almost RMB4 trillion (\$500 billion), mostly from the government, to cover past loan losses and to raise capital adequacy to meet prudential standards.²⁴

Excess investment in some sectors of manufacturing could eventually lead to excess capacity and falling prices, which could create a new wave of nonperforming loans. These loans would erode the substantial improvements that state-owned banks have made in their balance sheets over the past few years and could push some city commercial banks, which on average are far weaker, into insolvency. An undervalued currency naturally raises profitability in the export sector—i.e., manufacturing—and thus tends to tilt investment in that direction. This has certainly been the case in China in recent years, where, as already noted, the share of investment going into manufacturing has doubled. Part of this shift of investment toward manufacturing reflects the increased demand for capital goods associated with the rapidly rising rate of investment in the first half of this decade (figure 6.1). But this shift has almost certainly been reinforced by the fillip to manufacturing profitability provided by an increasingly undervalued currency.

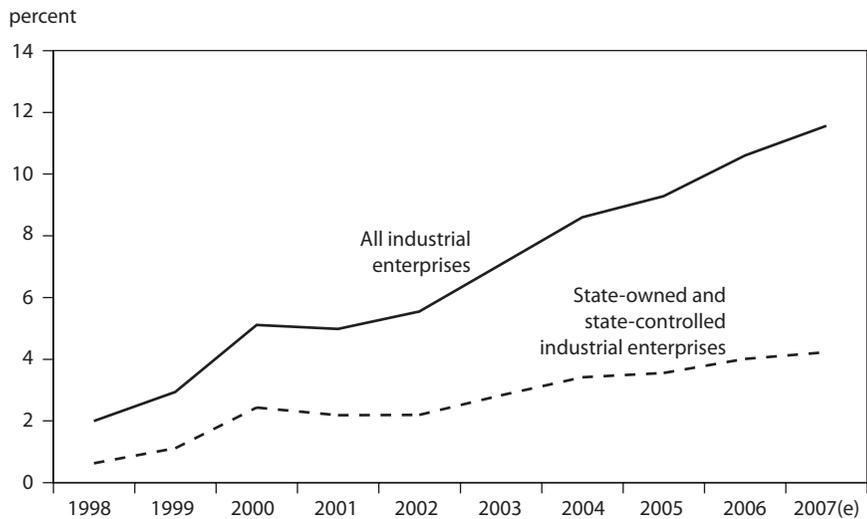
The National Development and Reform Commission (NDRC) has acknowledged that excess investment will have adverse financial consequences.²⁵ In its report to the National People's Congress in 2006, it pointed out that "adverse effects of surplus production capacity in some industries have begun to emerge. Prices for the products of these industries dropped and inventories grew, corporate profits shrank and losses mounted, and potential financial risk has increased."

The rapid increase in the magnitude of financial losses of unprofitable industrial enterprises supports this analysis. As shown in figure 6.6, after several years of stability, losses more than doubled in 2003–06 and then fell slightly in 2007. Since net profits of all enterprises rose sharply in this period (see figure 6.7), the dispersion of the profitability of China's industrial firms has apparently sharply increased over the past three years.

Figure 6.6 Losses of unprofitable industrial enterprises, 1995–2007(e)

(e) = estimate

Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2007*; ISI Emerging Markets, CEIC Database; author's calculations.

Figure 6.7 Industry profits as percent of GDP, 1998–2007(e)

(e) = estimate

Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2007*.

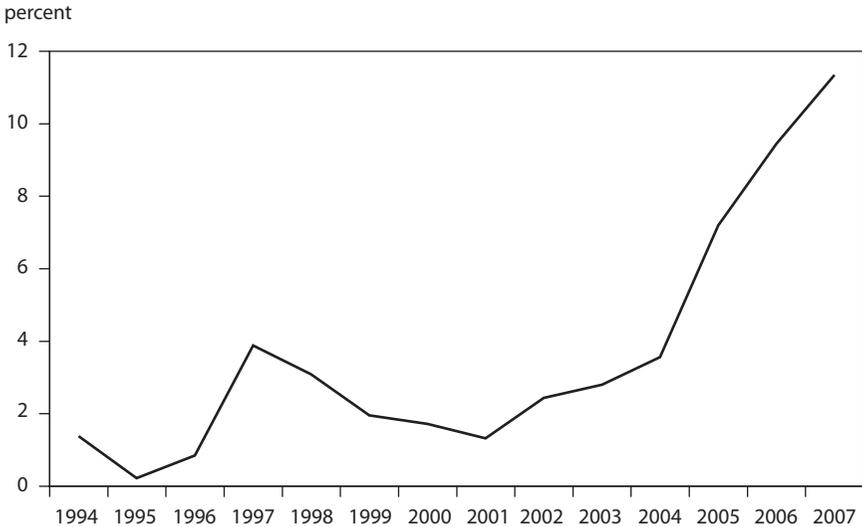
The continued decline in the share of nonperforming loans in the banking system in the past few years is not necessarily a sign that all is well. By 2007, on the back of five consecutive years of double-digit growth and an increasingly undervalued currency, profitability in the tradable goods sector—i.e., manufacturing—had surged to unprecedented levels (see figure 6.7). Thus most corporates have been in a strong position to service their bank debt. Distress in the banking system could emerge, however, either from a slowdown in economic growth over the next few years or from a significant appreciation of the currency. The former would reduce profitability throughout the economy while the latter would concentrate the reduction in profits to firms producing tradable goods. In either case the ability of firms to service their bank debt could be impaired.²⁶

A final factor underlining the leadership's desire to transition to a more consumption-oriented growth path is that excessive reliance on expansion of net exports—i.e., a growing trade surplus—raises the prospect of a protectionist backlash in the United States, Europe, and other important markets for Chinese exports. China's central bank, the People's Bank of China, was perhaps the first to explicitly acknowledge this factor in its *Report on the Implementation of Monetary Policy 2005Q2*, in which it candidly stated that China's excessive trade surplus "will escalate trade frictions."²⁷

In sum, for a variety of reasons China's top political leadership and its leading economic advisory institutions came to the view by late 2004 that sustaining long-term rapid growth required a significant modification of the underlying growth strategy.

Implications for the Global Economy

If realized, China's new growth strategy would have positive implications not only for China but also for the global economy. As shown in figure 6.8, China's current account surplus has soared in recent years. In 2006 it reached \$249 billion, making China, for the first time, the world's largest global current account surplus country. The surplus expanded further to \$372 billion, or 11 percent of GDP in 2007, both unprecedented for a large country that is not a large exporter of resources such as oil.²⁸ In 2007 China's current account surplus as a share of GDP was almost three times that of Japan in the mid-1980s when its current account surplus as a share of GDP peaked. China now is the second largest contributor to global economic imbalances, after only the United States, which has the world's largest current account deficit. China's successful transition to a pattern of growth driven more by domestic consumption demand necessarily entails a reduction in China's national saving rate relative to its investment rate. That, in turn, would reduce China's current account surplus. Thus rebalancing of China's economic growth would contribute to a reduction of global economic imbalances as well.

Figure 6.8 Current account balance as percent of GDP, 1994–2007

Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2007*; State Administration of Foreign Exchange of China, www.safe.gov.cn.

Similarly, rebalancing economic growth would reduce upward pressure on global oil prices. Although China accounts for less than 10 percent of global oil demand, its increasingly energy-intensive growth path between 2000 and 2006 meant that China alone accounted for more than 30 percent of the increase in global oil demand and global oil imports, far more than any other country. On current trends China alone will continue to account for 30 percent of the increase in global oil demand to 2030.²⁹ Rebalancing growth would reduce (1) the pace of growth of China's domestic energy consumption, (2) upward pressure on global oil prices, and (3) the pace of growth of China's carbon emissions.³⁰

Promoting Consumption-Driven Growth

Promoting domestic consumption demand as a more important source of economic expansion requires that the growth of household and/or government consumption increase faster than the combined growth of investment and net exports. The government can promote consumption via fiscal, financial, exchange rate, and price policy. Fiscal policy options include cutting personal taxes, increasing government consumption expenditures (i.e., government noninvestment outlays), or introducing a dividend tax on state-owned companies. Financial reform could increase interest income received by households, thus raising household disposable income

and potentially consumption. The government's policy of maintaining caps on interest rates on bank deposits has reduced substantially the return on savings, reducing household incomes below the level that would prevail in a more liberalized interest rate environment. Appreciation of the renminbi would simultaneously reduce net exports and allow the government greater flexibility in the use of interest rate policy.³¹ As will be argued later, higher real interest rates on bank lending are almost certainly necessary to reduce China's excessive rate of investment, which in turn is a prerequisite to a successful transition to a more consumption-driven growth path. Finally, price reforms could contribute to the rebalancing of economic growth. In recent years the Chinese authorities have tightly limited the extent to which rising global oil prices are reflected in the domestic prices of gasoline and diesel fuel. Similarly, they have limited the extent to which rising coal prices are reflected in the domestic price of electricity. These policies have provided a growing subsidy to manufacturing, particularly energy-intensive production.

Fiscal Policy

One obvious policy to stimulate private consumption is to cut personal taxes, thus raising disposable income and personal consumption expenditures. In addition, governments can increase their own budgetary expenditures, notably those on health, education, welfare, and pensions, to add to domestic consumption demand. The low level of social expenditures on the eve of the Party's decision to rebalance the sources of economic growth was reflected in the very limited share of the population covered by health, unemployment, and workers' compensation insurance. In 2003 only about half the urban population was covered by basic health insurance and less than a fifth of the rural population was covered by a cooperative health insurance program initiated on a trial basis in 2002.³² In the same year, only 14 percent of China's workforce was covered by unemployment insurance, and only 6 percent was covered by workers' compensation. In 2003 the pension scheme covered 116 million workers, only 16 percent of those employed, plus 39 million retirees.³³

The government has considerable potential to increase its social expenditures without raising taxes on households. Raising taxes likely would depress household consumption, offsetting to some degree the increase in government consumption. The government could simply reduce its own investment expenditures and reallocate the funds to consumption.³⁴ The government itself directly undertakes about 5 percent of all investment, an amount equivalent to a little over 2 percent of GDP.³⁵ In addition, the government budget provides "capital transfers," which are used to finance additional investment expenditures.³⁶ For 2004 these capital transfers were RMB380 billion, the equivalent of 6 percent of all fixed investment.³⁷ Thus

the government's direct and indirect investment outlays combined amount to about 5 percent of GDP. Reducing the government's direct investment and cutting capital transfers would free up resources to increase government consumption—i.e., outlays for health, education, welfare, and pensions. This would contribute significantly to a rebalancing of the structure of demand away from investment and toward consumption.

Increased government consumption expenditures also would contribute indirectly to increasing household consumption as a share of GDP by reducing the household saving rate, which rose significantly in the 1990s and has been running at about 25 percent of disposable income since 2000.³⁸ One reason for the rise in the saving rate was the reduction in the social services provided by the government and state-owned enterprises. For example, the share of total health outlays borne by individuals on an out-of-pocket basis increased from around 20 percent in 1978 to a peak of 60 percent in 2001.³⁹

Increased provision of health care and unemployment compensation through the government budget can reduce household precautionary saving. As families gain confidence that the government will provide more of these services, they voluntarily will reduce their own saving—i.e., increase consumption as a share of their own disposable income. Similarly, greater government provision of educational services and old age support could lead to a reduction in saving associated with lifecycle events, such as children's education and retirement.

In other countries, increased government provision of health services has stimulated increased household consumption.⁴⁰ For example, the introduction of National Health Insurance in Taiwan, which raised the fraction of the insured population from 57 percent in 1994 to 97 percent in 1998, substantially reduced household uncertainty about future health expenditures and thus stimulated increased consumption. Households that previously enjoyed no health insurance coverage increased their consumption expenditures by an average of over 4 percent.⁴¹ Thus, China's transition to a more consumption-driven growth path needs to start with increased government consumption expenditures but with time is likely to be reinforced by changes in household consumption and saving decisions.

Finally, corporate tax policy should contribute importantly to the rebalancing of China's sources of economic growth. As shown in figure 6.7, from 1999 through 2007, profits of industrial enterprises in China soared from 3 percent to almost 12 percent of GDP.⁴² Although these profits are subject to China's corporate income tax, estimated retained after-tax earnings of industrial firms in 2006 amounted to 8 percent of GDP, compared with an estimated 1.5 percent in 1998.⁴³ In addition, industrial firms retain depreciation funds that amount to another 6 to 7 percent of GDP.⁴⁴

Unfortunately, in state-owned firms these funds are not subject to a significant rate of return test prior to being reinvested. The reason is that the only available legal alternative to reinvestment is low-yielding bank de-

posits. Taking into account the relevant measure of inflation, the real after-tax rate of return on corporate deposits is typically negative.⁴⁵ Given a negative real rate of return on deposits, it is rational for enterprise managers to reinvest all retained profits and depreciation funds—even when the investment projects have slightly negative anticipated rates of return.

Given the strong upward trend in profits as a share of GDP since 1999 and an apparent upward trend in depreciation funds as a share of GDP as well, retained earnings have become an increasingly important source of investment financing in China's corporate sector and have contributed to the rising investment share of GDP in recent years.

For a number of years, the authorities have discussed requiring state-owned enterprises to pay dividends to their owner—the government.⁴⁶ A dividend tax would directly reduce business saving and investment as well as provide the government with additional resources that could be used to enhance government-provided social services.

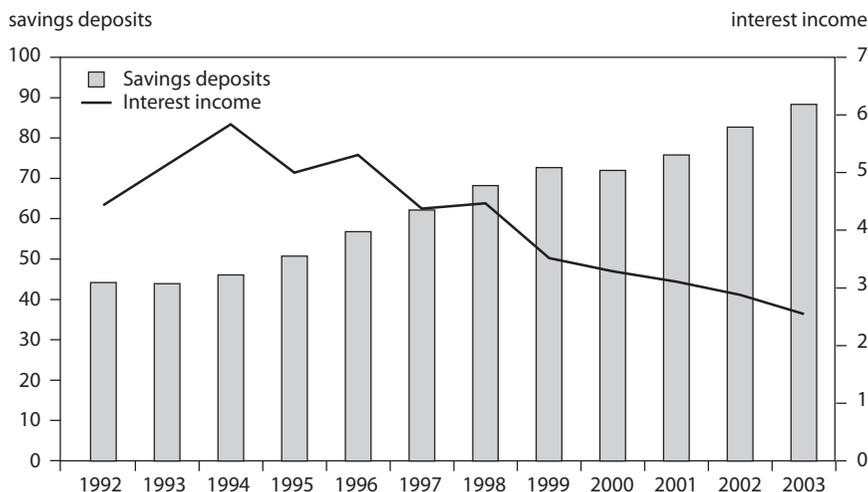
Financial Reform

The decline in household consumption as a share of GDP (figure 6.2) reflects not only an increase in savings as a share of household disposable income in the 1990s but also a decline in the share of disposable income in GDP. Between 1992 and 2003 household disposable income as a share of GDP fell by 4.8 percentage points.⁴⁷

Part of the explanation of this decline is increasing financial repression. China's financial sector has been undergoing far-reaching reform for more than a decade, suggesting that the degree of repression has eased. However, from the point of view of households this is not the case. As shown in figure 6.9, although household deposits in the banking system as a share of GDP increased by about two-thirds between the early 1990s and 2003, the stream of pre-tax interest earnings generated by these savings declined from an average of about 5 percent in 1992–95 to only 2.5 percent of GDP in 2003. The contribution of interest earnings to disposable income has declined even further since the government introduced a 20 percent tax on interest income in 1999.

The reason for this decline was government interest rate policy on savings deposits. As inflation rose to record highs in 1993, the flow of savings deposits into the banking system plummeted. To avert a crisis the government in July introduced so-called value-guarantee deposits designed to insulate longer-term deposits from inflation. These accounts paid a base interest rate plus a subsidy interest rate. The subsidy rate, calculated when the deposit matured, was set so that the total nominal interest rate offset the inflation that occurred while the funds were on deposit. Thus savers willing to shift their funds into longer-term time deposits received a real rate of return that was at least zero. These value-guarantee deposits

Figure 6.9 Household savings and interest income, 1992–2003
(percent of GDP)



Sources: National Bureau of Statistics of China, *China Statistical Yearbook 2006*; ISI Emerging Markets, CEIC Database.

were offered to new depositors from July 1993 through April 1996.⁴⁸ Subsequently, however, the government fixed interest rates on household savings deposits that were much lower in real terms, leading to the decline in interest income reflected in figure 6.9.

The shrinking contribution of after-tax interest income to household disposable income accounts for almost two-thirds of the decline in household disposable income as a share of GDP between 1992 and 2003. More importantly, if interest earnings after the early 1990s had grown in line with the stock of household bank deposits and the tax on interest income had not been introduced, by 2003 the contribution of interest income to household disposable income would have been 8.9 percent of GDP, 6.4 percentage points greater than the actual contribution.

Exchange Rate Policy

Exchange rate policy should be a third element supporting China's transition to a more consumption-driven growth path for two reasons. First, through its effect on relative prices, appreciation of the renminbi will reduce the growth of exports and increase the growth of imports, reducing China's external imbalance. Second, China's highly undervalued exchange rate constrains the independence of monetary policy.⁴⁹ China's central bank has had some success in sterilizing large foreign capital inflows, a key

element in its program of controlling the growth of monetary aggregates and bank credit. But it has generally been reluctant to raise domestic interest rates, since that would reduce the carry costs of foreigners moving money into China in anticipation of further renminbi appreciation. Since lower carry costs increase profits from any renminbi appreciation, the authorities fear that raising domestic interest rates could cause capital inflows to become unmanageably large. Fixed nominal domestic interest rates on loans in 2002–03, when domestic price inflation was rising, led to a sharp decline in and ultimately to negative real interest rates on loans. Between the first half of 2002 through the third quarter of 2004, the real interest rate on loans fell by 13 percentage points, from almost 9 to –4 percent.⁵⁰ This decline fueled a very large increase in the demand for bank loans and thus a sharp increase in capital formation.

A more appreciated exchange rate would allow the central bank greater flexibility in setting domestic interest rates and thus increase the potential to mitigate macroeconomic cycles by raising lending rates to moderate investment booms. That would lead, on average, to a lower rate of investment. A reduction in the rate of investment is a critical component of the policies to transition to a more consumption-driven growth path. In the absence of a reduction in investment, increased consumption demand would lead to inflation.

Price Reform

A final policy domain is pricing. Among the most important prices that are currently not in accordance with relative scarcities and social preferences are those for land, energy, water, utilities, and the environment.⁵¹ All of these are important manufacturing inputs, so more appropriate pricing, including enforcement of existing environmental standards, would tend to reduce investment in manufacturing, particularly the most energy-intensive industries, and increase investment in services. Appropriate pricing at a minimum means full cost recovery and more ambitiously would mean marginal opportunity cost pricing—i.e., include the cost of environmental damage in both production and consumption as well as the opportunity cost of resource depletion.⁵²

China's Pursuit of Consumption-Driven Growth

Fiscal Policy

Even before the December 2004 Central Economic Work Conference, which formally endorsed the transition to a more domestic consumption-driven growth path, in mid-2004 the government initiated a program to

raise farm incomes by reducing the agricultural tax levied on farm income.⁵³ The government reduced the tax in stages, with the largest reductions in 2004 and 2005, and eliminated it entirely by 2007.

The early initiative to eliminate the agricultural tax was followed in 2006 with a doubling, from RMB800 to RMB1,600, in the monthly income exempt from the personal income tax levied on wage earners. The government raised the exemption amount to RMB2,000 per month in 2008.

Another policy that raised disposable income above the levels it would otherwise have achieved was the reduction in the tax on interest income to 5 percent effective August 15, 2007.

The central government also has encouraged local governments to raise the minimum wage in urban areas, potentially increasing the incomes and thus consumption of low-income workers.

Taken together, the first three of these initiatives are raising household incomes above the levels they would otherwise attain. Cumulatively, in the four years ending in 2007 the agricultural tax burden was reduced by an average of RMB133.5 billion per year,⁵⁴ an amount equal to an average of 0.7 percent of GDP in those years. Similarly, the State Tax Bureau estimated that raising the personal income tax exemption in 2006 would reduce the personal income tax take by RMB28 billion in 2006, or 0.13 percent of GDP.⁵⁵ A further reduction of RMB30 billion was anticipated as a result of the further increase in the exemption in 2008. The cut in the tax on interest income similarly will increase household disposable income by at least RMB30 billion in 2008.

The fourth initiative, minimum wage policy, appears to have had at most only a modest effect on household income for two reasons. First, the Regulations on the Minimum Wage of the Chinese Ministry of Labor and Social Security give local governments considerable leeway in setting the minimum wage.⁵⁶ These governments have raised minimum wage rates at a pace substantially below the growth of average wages in their locality. In Beijing, for example, in recent years the minimum wage has been increased at an annual rate of less than 8 percent, far below the 16 percent pace of increase in the average wage of workers and staff in the city.⁵⁷ As a result, the minimum wage in Beijing fell from a third of the average wage of workers and staff in the city in 1999 to only a fifth in 2007.⁵⁸ Second, the share of the workforce earning the minimum wage appears to be quite small. In Beijing, for example, minimum wage workers accounted for only 2.4 percent of the workforce in 2002.⁵⁹ Given the low ratio of the minimum wage to the average wage and the small share of the workforce earning the minimum wage, recent annual increases in the capital's minimum wage had only a minuscule effect on the total wage bill.

In summary, the cuts in taxes on rural and urban incomes instituted in 2004 raised household disposable income by about 1 percent of GDP per year above the level it would otherwise have attained, contributing mod-

Table 6.1 Government expenditure on social programs, 2002–07
(billions of renminbi)

Year	Education	Health	Social security and employment		Total	Percent of GDP
2002	300.61	66.33	268.91		635.85	5.28
2003	335.21	83.08	271.22		689.52	5.08
2004	385.43	93.59	318.56		797.58	4.99
2005	452.78	113.26	378.71		944.75	5.14
2006	546.43	142.12	439.41		1,127.96	5.32
2007	706.54	197.38	539.60		1,443.51	5.78

Source: Xinhua News Agency, "The Course of Improvements in the People's Livelihood from the Perspective of Public Finance Expenditure over the (Past) Five Years," March 7, 2008, <http://news.xinhuanet.com>.

estly to higher levels of household consumption expenditures than would otherwise have been achieved.⁶⁰

Government expenditures on health, education, and pensions and unemployment programs have increased significantly since 2004, with a record increase in 2007. As shown in table 6.1, by 2007 budgetary expenditures on education, health, social security, and employment combined were RMB1,444 billion, an increase of four-fifths compared with 2004. Of course this was a period of exceptionally rapid growth of the economy and of government budget revenues, so the increase is less impressive relative to those metrics.

One rationale for increased social outlays is Premier Wen's program to create a "new socialist countryside." The program entails increasing subsidies for grain producers, designed to raise the incomes of some of China's poorest farmers; expanding the coverage of the rural cooperative medical system, which was first rolled out on a trial basis in 2002; and eliminating educational fees for rural primary education.

The increase in expenditures on programs tied to the new socialist countryside initiative is impressive.⁶¹ Central government outlays on the rural cooperative medical system rose to RMB11.4 billion in 2007, a twenty-fold increase compared with 2005, raising the number of rural residents covered by the program to more than 730 million, quadruple the number covered in 2005. This program is now available in 86 percent of China's county-level administrative units, an increase of more than seven-fold compared with 2004. The central government has budgeted RMB25.3 billion for this program in 2008, allowing both a broadening of the program to all administrative regions and an increase in the subsidy provided to each participant.

The government budgeted RMB220 billion (\$27.5 billion) over five years (2006–10) to provide free rural primary school education, a significant

commitment. Expenditures on this initiative in 2006 were RMB36.6 billion, allowing the government to eliminate tuition and miscellaneous school fees for 52 million students in 12 western provinces. Outlays jumped to RMB69 billion in 2007 as the program was extended to central and eastern provinces, reaching a total of 150 million students.

The government also greatly expanded some programs that reach primarily urban residents. Compared with 2004, by 2007 the number of workers covered by basic retirement, health, unemployment, and workers' compensation insurance expanded by 23, 80, 10, and 78 percent, respectively.⁶²

Despite the initiatives summarized earlier, combined government expenditures at the national and subnational levels on education, health, and pensions and employment programs rose by less than one percentage point of GDP between 2004 and 2007, and a chunk of that increase simply offset the decline that occurred in 2003 and 2004—i.e., the share of GDP devoted to these programs in 2007 was only 0.5 percentage points higher than in 2002. Similarly, expenditures on these programs as a share of total government fiscal outlays increased by just over one percentage point between 2004 and 2007. But because of the decline in 2003, social expenditures as a share of the consolidated government budget in 2007 were only slightly more than in 2002.

The apparent contradiction between the large percentage increases in central government expenditures on selective social programs, notably the new rural cooperative medical system, and the somewhat more modest increase in total social outlays, is explained in part by the overwhelmingly dominant role of provincial and local governments in financing social programs. In 2005, for example, subnational governments financed 94 percent of all government spending on education and 98 percent of all government spending on public health. Thus until subnational governments increase the priority they assign to funding education and health programs, total expenditures on these programs will rise much more slowly than central government outlays.

Corporate tax policy initiatives are not facilitating a rebalancing of the sources of economic growth. On September 8, 2007 the State Council announced that the government would begin collecting dividends from state-owned industrial companies in 2007.⁶³ Dividends are being levied at 10, 5, and 0 percent of after-tax profits earned in 2006, depending on the sector in which the firm operates. For example, highly profitable firms in the petroleum, electric power, and telecommunications sectors are to pay at the rate of 10 percent of their after-tax profits, and firms in less profitable sectors such as steel, transportation, electronics, trade, and construction industries will pay at the rate of 5 percent, while a few firms, such as those in the military industry, are exempt from paying dividends at least for an initial three-year period. In 2007, as part of the phase-in process, dividends were to be paid at half of these statutory rates.

Three factors have undermined the potential of the dividend tax to contribute to economic rebalancing. First, the dividend tax rates are too low. The magnitude of dividend payments to be collected from central state-owned firms under the administrative guidance of China's State-Owned Asset Supervision and Administration Commission (SASAC) in 2007 was set at only RMB17 billion. That amount is vanishingly small, only 4 percent of the 2006 after-tax profits of the firms controlled by SASAC. Even if the half-rate phase-in had not been used and dividend payments had totaled RMB34 billion, that amount was only one-tenth of 1 percent of 2007 GDP. A more robust effort, for example, might have required all state-owned and state-controlled industrial companies, including those under the administrative guidance of local SASAC bureaus, to pay half their after-tax income as dividends. This would have amounted to RMB325 billion or 1.3 percent of 2007 GDP.⁶⁴ Additional dividends could also be collected from state-owned firms in the service sector, raising the potential of a dividend tax to reduce corporate savings and investment and thus contribute to rebalancing.

Second, and perhaps more importantly, it is not clear what portion of these dividend payments will be available to finance social programs and other forms of government consumption and what portion will be used to finance investment. Li Rongrong, the chairman of SASAC, initially argued that dividend payments should not be made to the Ministry of Finance, where they might be subject to budgetary allocation and thus could potentially fund additional social services. Rather, he asserted that dividend payments should be made directly to SASAC, which he said SASAC would use to finance additional investment outlays. If this approach had been adopted, a dividend policy would not have reduced the corporate saving and investment rate and would not have contributed to a rebalancing of the sources of economic growth.⁶⁵

While the debate on the disposition of dividend payments is probably far from over, a compromise seems to be emerging in which dividend payments are to be partially allocated to a capital management budget managed separately from the fiscal budget by the Ministry of Finance and partially allocated to support social programs. Proposals for the use of dividends paid by central state-owned enterprises are to come from SASAC, with the Ministry of Finance determining the final capital management budget and distributing the funds directly to units that will spend it. The amounts to be used for noninvestment expenditures appear to be under debate. When the dividend tax and the capital management budget were first announced in mid-September, it was said that "when necessary some" of the dividend tax payments could be used to fund social security expenditures.⁶⁶ A few months later in December 2007, when more details were announced, it was said that a majority of the dividend payments could be used to support social and pension programs.

A third reason corporate tax policy is not contributing to rebalancing is that the introduction of the dividend tax in 2007 coincided with a reduction in the corporate income tax rate. Domestic firms had long complained that their statutory tax rate of 33 percent was well above the 15 percent rate paid by foreign-invested firms. After years of debate the government decided to unify the rate paid by indigenous and foreign firms at 25 percent beginning in 2007. This reform reduced the corporate income tax payments of indigenous firms by an estimated RMB134 billion, offsetting by a factor of almost eight the additional dividend tax collection.⁶⁷ The result is that retained earnings of the corporate sector as a share of GDP continued to expand in 2007.

Financial Reform

Reforms of the banking system in recent years have not reduced the degree of repression of the banking system from the perspective of Chinese households. Central bank policy continues to place caps on the interest rates that banks can pay on deposits and floors on the interest rates that they can charge on loans, presumably to prop up bank profitability. This, in turn, makes it more likely that banks will be able to write off future nonperforming loans from their own earnings, thus minimizing the potential fiscal burden of additional bank recapitalization programs.

One measure of growing financial repression is the expanding differential between the interest rate households receive on savings deposits compared with consumer price inflation. In the first quarter of 2008 the central bank fixed the maximum interest rate banks could pay on household demand deposits at 0.72 percent, unchanged from February 2002.⁶⁸ But inflation, as measured by the consumer price index, had ticked up by almost 9 percentage points—from -0.8 percent in 2002 to 8 percent in the first quarter of 2008.⁶⁹ Thus the real rate of return on demand deposits went from 1.52 to -7.28 percent. The central bank has increased rates paid by banks on term deposits but by far less than the increase in inflation. For example, the one-year term deposit rate in the first quarter of 2008 was 4.14 percent, an increase of only 2.06 percentage points since February 2002. That increase is less than a fourth of the increase in the pace of inflation and has converted a real return of 3 percent in 2002 into a real return of -3.86 percent. If households in the first quarter of 2008 had received the same real rate of interest on their demand and time deposits as in 2002, the additional interest income they would have received would have been the equivalent of about 6 percent of GDP. Thus declining real returns to savings have significantly depressed household disposable income as a percentage of GDP.

Jonathan Anderson, a keen observer of China's financial and banking system, believes that "if the government were to completely liberalize

interest rates tomorrow we believe average deposit rates would rise sharply.”⁷⁰ But interest rate liberalization seems to have fallen off the reform agenda in Beijing. The last step of interest rate liberalization was in October 2004 when the central bank gave commercial banks the authority to raise lending rates without limit from the benchmark rates set by the central bank. However, benchmark interest rates set by the central bank on deposits remain rigid caps.

The implicit taxes imposed on households by the distorted interest rate structure fixed by the central bank resulted in a massive subsidy for corporate borrowers, further increasing profits in the corporate sector. In the first quarter of 2008 the benchmark interest rate paid by corporate customers for a one-year loan was 7.47 percent. But in March, prices for the machinery and equipment and other capital goods that firms would purchase to expand their businesses rose 7.95 percent, making the real rate of interest for corporate borrowers -0.5 percent, an extraordinarily low rate in an economy expanding at 10.6 percent.

Exchange Rate Policy

In July 2005 the Chinese authorities revalued the renminbi by 2.1 percent vis-à-vis the US dollar and announced that the currency could fluctuate by up to 0.3 percent per day and that the renminbi would be managed with reference to a basket of currencies, rather than simply being pegged to the US dollar. These reforms could have contributed to a slowing of the growth of China’s external surplus and given the People’s Bank of China greater flexibility in adjusting interest rates.

Cumulatively, by the end of the first quarter of 2008, the renminbi had appreciated by 18 percent vis-à-vis the dollar. But, as calculated by the International Monetary Fund, JPMorgan, and other investment banks, on a real effective basis the currency had appreciated by only 11 percent.⁷¹

Why have China’s net exports as a share of GDP continued to rise rapidly while its exchange rate, on a real trade-weighted basis, has been appreciating by more than 3 percent per year since mid-2005? Normally, with a lag of a few quarters, an appreciating currency leads to a slowing expansion and then an absolute reduction in a country’s trade surplus. One hypothesis is that the conventionally calculated real effective exchange rate of the renminbi understates China’s growing competitiveness in international markets. JPMorgan and other institutions calculate the real exchange rate by comparing the rate of movement of prices in China and in its trading partners. For example, if while the nominal effective exchange rate of the renminbi was unchanged China experienced one percentage point more price inflation than the average of its trading partners, the real exchange rate of the renminbi would appreciate 1 percent. The problem is that the inflation measures used by investment banks and in-

ternational financial organizations appear to be a poor measure of the prices of China's exports. For example, despite an 18 percent nominal appreciation of the renminbi vis-à-vis the US dollar, from June 2005 through March 2008 the price of Chinese goods imported into the United States had increased by only 2.5 percent.⁷² Available data do not suggest that Chinese exporters cut their profit margins in order to avoid passing through the renminbi appreciation to US consumers. The most likely explanation is that productivity growth in China's export sector was sufficiently high that firms producing exports could absorb the effect of the rising value of the renminbi on their export earnings. In short, productivity growth in the export sector over the period must have been about 15 percent. Over that period, prices in China's major trading partners rose on average by about 8 percent. Thus the Chinese currency would have needed to appreciate in nominal terms by almost a quarter to maintain the initial level of competitiveness of Chinese exports. But nominal appreciation of the renminbi against its trading partners was only 7 percent, so Chinese goods grew in competitive terms. This calculation suggests that taking into account the rapid productivity growth in export manufacturing, China's real effective exchange rate depreciated by about 15 percent. In contrast, the standard calculation, which does not take into account the concentrated nature of productivity growth in China, shows appreciation of 11 percent between June 2005 and the end of March 2008.

Price Policy

In the 1980s, when China was still self sufficient in crude oil and not so deeply integrated into the global economy, the domestic price of crude was a small fraction of the international level. But in the 1990s the Chinese government gradually raised crude oil prices to international levels and by 1998, when convergence was completed, adopted a formal plan to adjust domestic crude oil prices monthly to keep them in line with international prices. Similarly, the government raised the retail prices of refined petroleum products toward international levels and in mid-2000 adopted a program to adjust these prices on a monthly basis so that refined product prices reflected crude prices.⁷³ However, as the global price of crude oil began to rise rapidly in 2004, Chinese pricing policy changed. The domestic price of crude continued to be adjusted in line with the international price, but only a part of the rising price was passed through to retail prices. As a result, in 2005 China's major oil companies lost money on their refining operations, part of which was offset with government subsidies.

By early 2008 retail prices in China for gasoline and diesel fuel were the lowest of any oil-importing country in the world. Sinopec, China's largest oil refiner, reported in April that it lost RMB25 billion on its refining operations in the first quarter of 2008. The government provided

RMB7.4 billion to offset a portion of its losses, but the firm's net profit plunged by two-thirds. In June 2008 the NDRC raised the retail prices for diesel and gasoline by 18 and 17 percent, respectively. These increases will still leave Chinese refiners with significant operating losses and no return on the capital employed in refining. Thus unless the authorities raise the retail prices of diesel and gasoline further or the global price of crude falls and retail prices are not adjusted downward, shortages of refined products subject to price control are likely to persist.

A similar development has emerged in electric power. Until recently thermal power generators have been profitable—i.e., full-cost pricing has been in effect. This was insured in part by a 2005 policy that called for an adjustment in electric power rates if the price of coal rose by more than 5 percent in a half-year. Like the policy for pass-through of rising crude prices to prices of gasoline and diesel fuel, it was abandoned as coal prices rose sharply. Long-term contract coal prices paid by China's five main power-generating companies rose 9 percent in 2007 and an additional 10 percent beginning in January 2008. Moreover, the market price of coal rose much more rapidly, meaning that coal companies frequently defaulted on their contracts, forcing generators to buy a larger share of their coal needs at the market price. At the same time, however, the price the generators received for the power they deliver to the grid companies had remained unchanged since the summer of 2006. With coal accounting for 60 to 70 percent of the total cost of electricity, by the first quarter of 2008, the five largest generators all lost money on their thermal power business.

The NDRC also in June raised the average price paid by industrial users of electric power by RMB0.025 per kilowatt hour or about 5 percent. Barring an unexpected decline in the price of coal, this increase, like the one for fuels, is unlikely to restore profitability to the generating business. The price increase is too small and households are exempt. Abandoning full-cost prices is likely to lead to shortages of electric power as generators pare production.

Glass Half Full or Half Empty?

The government has taken some steps to initiate the transition to a more consumption-driven growth path. For example, outlays on social programs increased more rapidly, particularly in 2005–07, which should contribute over time to a reduction in precautionary savings by households. Cuts in taxes on agricultural, wage, and interest income added modestly to the growth of household income.

But some policies are undermining the goal of rebalancing. For example, recent corporate tax reform has had the perverse effect of raising after-tax retained earnings of Chinese firms, contributing to the ongoing high rate of investment; interest rate caps on savings deposits in the face

of rising inflation mean that the real returns to savers are increasingly penurious while the subsidy to corporate borrowers is soaring. Adjusting for productivity gains in the production of export goods, an alternative measure of the real effective exchange rate suggests that the Chinese currency has depreciated rather than appreciated over the past three years, adding to China's external imbalance. And increased government intervention has resulted in a growing subsidy of energy use, likely undermining the goal of reducing the energy intensity of economic growth.

The adverse effect of these policies is reflected in some measures that show economic growth actually has become even more unbalanced since 2004. In 2005–07, the pace of investment demand moderated slightly, as reflected in a cumulative one percentage point reduction in investment as a share of GDP compared with 2004. But China became increasingly dependent on a growing trade surplus to sustain high growth. Net exports jumped from 2.5 percent of GDP in 2004 to 8.9 percent of GDP in 2007 and accounted for one-fifth of China's economic growth in 2005–07. Over the same period household and government consumption as a share of GDP declined by 5.3 percentage points of GDP.⁷⁴

Energy consumption per unit of GDP fell by 1.2 percentage points in 2006 and an additional 3.3 percent in 2007. However, this falls short of the government's goal of reducing the consumption of energy per unit of output by 4 percent annually in the five years through 2010. And even after these improvements, energy intensity per unit of GDP remains well above the average of the first two decades of economic reform.

Other macro measures also suggest the limited effect of rebalancing policies. The share of investment in urban areas allocated to manufacturing continues to rise, reaching 30 percent by 2007, while the share devoted to investment in the services sector continues to fall. This is not surprising. China is a market economy in which firms respond to price signals. China's undervalued exchange rate boosts profitability in manufacturing, a trend that is reinforced by low or even negative real interest rates on loans and the more recent underpricing of energy.

The same trend is reflected in the share of services in GDP. In the first 25 years of economic reform, the share of services in GDP roughly doubled, reaching 41 percent in 2002–03. This is a typical pattern of development for a rapidly growing low-income country. But since then the services share has actually declined slightly, a very peculiar if not wholly unprecedented development for a country with a per capita income of about \$2,000 to \$3,000.

This evidence suggests that a transition toward more consumption-driven growth in China will require more vigorous government policy action than we have seen to date in all four domains—fiscal, financial, exchange rate, and pricing. The implications for the global economy of slow policy adjustment in China are adverse. China's external surplus will grow much more moderately in 2008 and could even shrink in absolute

terms, but this would reflect as much the slowdown of growth in the United States and elsewhere as the modest currency appreciation seen to date. Absent more appreciation of the currency, China's external surplus likely will resume expanding when global growth returns to trend. China's continued high dependence on investment to generate growth contributes to upward pressure on global prices of oil and other commodities and could lead to continued outsized increases in China's energy consumption and carbon emissions.

Notes

1. *People's Daily*, "Central Economic Work Conference Convenes in Beijing December 3 to 5," December 6, 2004, www.people.com.cn (accessed July 21, 2006).
2. Wen Jiabao, "Report on the Work of the Government," *People's Daily*, March 14, 2006, <http://english.people.com.cn> (accessed March 14, 2006); New China News Agency, "We must concretely grasp eight work items to do well in next year's economic work," December 1, 2006, <http://politics.people.com.cn> (accessed December 12, 2006); Wen Jiabao, *Report on the Work of the Government* (Beijing, March 5, 2007); Wen Jiabao, *Report on Work of the Government* (Beijing, March 5, 2008), www.npc.gov.cn (accessed April 18, 2008).
3. Ben S. Bernanke, "The Chinese Economy: Progress and Challenges" (speech, Chinese Academy of Social Sciences, Beijing, December 15, 2006).
4. National Bureau of Statistics of China, *China Statistical Yearbook 2007* (Beijing: China Statistics Press, 2007), 60.
5. For details, see Nicholas R. Lardy, "China: Toward a Consumption-Driven Growth Path," Policy Briefs in International Economics 06-6 (Washington: Peterson Institute for International Economics, October 2006), www.petersoninstitute.org.
6. National Bureau of Statistics of China, *China Statistical Yearbook 2007*, 72. All of the analysis of the expenditure components of GDP—i.e., consumption, investment, and net exports—is based on the revised GDP expenditure data for the years 1978 through 2005 released by the National Bureau of Statistics of China, *China Statistical Yearbook 2006*, in late September 2006. Data for 2007 were released in May 2008 and are available from ISI Emerging Markets CEIC Database, available by subscription at www.securities.com (hereafter CEIC).
7. By definition, the national saving rate is equal to investment as a share of GDP plus the current account as a percent of GDP. In China, these were 42 and 9 percent of GDP, respectively, in 2006.
8. National Bureau of Statistics of China, *China Statistical Yearbook 2007*, 75.
9. The declining share of consumption in GDP is due to both a decline in household disposable income as a share of GDP and a decline in consumption as a share of disposable income. Some analysts believe that the National Bureau of Statistics of China undercounts household consumption, particularly of services, and thus

the share of household consumption in GDP is biased downwards. If GDP was undercounted by 8 or 12 percent, and the entire increment was private consumption of services, household consumption would have constituted 42 and 44 percent, respectively, of GDP in 2005; see Dragoneconomics Research & Advisory, "Consumption: A Chinese Puzzle," *China Insight*, no. 33 (February 13, 2007). Even on these alternative assumptions, however, private consumption as a share of GDP would be unusually low by international standards. These adjustments would also lower the investment share of GDP by three and four percentage points, respectively. The higher consumption and lower investment share of GDP would mean the degree of internal imbalance is less than that reflected in the official data. Note, however, that on these alternative assumptions, China's large and growing external imbalance would decline by only a few tenths of a percentage point of GDP.

10. US data are available at US Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts Tables, www.bea.gov (accessed May 15, 2008).

11. UK data are available at UK Statistics Authority, National Statistics, "First Release: UK Output, Income and Expenditure, 4th Quarter 2007," www.statistics.gov.uk; Indian data are available at Press Information Bureau, Government of India, "Press Note: Quick Estimates of National Income, Consumption Expenditure, Saving, and Capital Formation, 2006–07," January 31, 2008, <http://mospi.nic.in> (accessed May 15, 2008).

12. National Bureau of Statistics of China, *China Statistical Yearbook 2007*, 75; CEIC.

13. Ibid.

14. Louis Kuijs and Tao Wang, "China's Pattern of Growth: Moving to Sustainability and Reducing Inequality," World Bank Policy Research Working Paper 3767 (Washington: World Bank, November 2005), 2.

15. Martin Wolf, "Why Is China Growing So Slowly?" *Foreign Policy* (January–February 2005), www.foreignpolicy.com (accessed August 4, 2005).

16. Calculated on the basis of the Indian Ministry of Statistics and Program Implementation, *National Account Statistics*, <http://mospi.nic.in>; IMF, *International Financial Statistics*; National Bureau of Statistics of China, *China Statistical Yearbook 2006* (Beijing: China Statistics Press, 2006), 34, 36, 171.

17. From 1978 through 2000, China's trade turnover (imports plus exports) measured in value terms expanded at an average rate of 15 percent per year. From 2000 through 2006, the pace accelerated to 25 percent per year.

18. Kuijs and Wang, World Bank Policy Research Working Paper 3767.

19. National Bureau of Statistics of China, *China Statistical Yearbook 2005*, 208, and *China Statistical Yearbook 2007*, 214. For recent years China's statistical authorities have released data on total investment in manufacturing and investment in manufacturing in urban areas. For these years urban investment has consistently accounted for about 75 percent of all investment in manufacturing. Thus the rising share of urban investment going to manufacturing is likely a good proxy for the share of total investment going to manufacturing.

20. For a detailed analysis, see Daniel Rosen and Trevor Houser, "China Energy: A Guide for the Perplexed," (report, Washington: Peterson Institute for International Economics, May 2007), www.petersoninstitute.org.
21. National Bureau of Statistics of China, *China Statistical Abstract 2006* (Beijing: China Statistics Press, 2006), 147.
22. For example, in 2003 overall efficiency gains were the equivalent of about 30 percent of the adverse effects on energy efficiency stemming from the structural shift toward the most energy-intensive subsectors of the industrial sector. Jiang Jin, "Managing Energy Demand: The Bridge to Sustainability," *China Economic Quarterly* 10, no. 4: 31.
23. Shai Oster, "Pollution Takes Rising Toll in China," *Wall Street Journal*, August 4, 2006, <http://online.wsj.com> (accessed August 4, 2006).
24. Ma Guonan, "Who Foots China's Bank Restructuring Bill?" in *The Turning Point in China's Economic Development*, eds. Ross Garnaut and Ligang Song (Canberra: Asia Pacific Press at the Australian National University, 2006).
25. National Development and Reform Commission, *Report on the Implementation of the 2005 Plan for National Economic and Social Development and on the 2006 Draft Plan for National Economic and Social Development* (Beijing, March 5, 2006), www.npc.gov.cn.
26. This is hardly an argument against further appreciation of the renminbi, however. The longer China maintains an undervalued currency, the greater the distortion of investment in favor of tradables and the greater the size of the ultimate adjustment required when the currency does move toward a long-term equilibrium value.
27. People's Bank of China, Monetary Policy Analysis Small Group, *Report on the Implementation of Monetary Policy 2005Q2* (Beijing, August 4, 2005), www.pbc.gov.cn, 28.
28. ISI Emerging Markets CEIC Database, available by subscription at www.securities.com.
29. International Energy Agency, *World Energy Outlook—China and India Insights* (Paris, 2007).
30. For details, see chapter 7 of this book.
31. Marvin Goodfriend and Eswar Prasad, "A Framework for Independent Monetary Policy in China," IMF Working Paper 06/11 (Washington: International Monetary Fund, May 2006), www.imf.org (accessed October 6, 2006).
32. Organization for Economic Cooperation and Development, *China*, OECD Economic Surveys, 2005/13 (Paris, September 2005), 185.
33. National Bureau of Statistics of China, *China Statistical Abstract 2004* (Beijing: China Statistics Press, 2004), 41, 187.
34. This reallocation, of course, would reduce government savings, since the latter are defined as current revenues less current (i.e., noninvestment) outlays.
35. National Bureau of Statistics of China, *China Statistical Abstract 2006*, 52.

36. Louis Kuijs believes these funds are transferred to state-owned enterprises in electric power, water, transport, and other infrastructure sectors. See Kuijs, "How Will China's Savings-Investment Balance Evolve?" World Bank China Office Research Working Paper no. 5 (Beijing: World Bank China Office, May 2006), 7.
37. National Bureau of Statistics of China, *China Statistical Yearbook 2007*, 73, 92–93.
38. Kuijs, World Bank Research Working Paper no. 5.
39. IMF, *Regional Economic Outlook: Asia and Pacific* (Washington, May 2006), www.imf.org (accessed August 16, 2006); National Bureau of Statistics of China, *China Statistical Yearbook 2005*, 770; National Bureau of Statistics of China, *China Statistical Yearbook 2006*, 882.
40. China Economic Research and Advisory Programme, "China and the Global Economy: Medium-term Issues and Options," December 2005.
41. Consumption increased by 2.6 percent in households where one spouse was not in the labor force or unemployed and by 5.7 percent in households where both spouses worked. See Shin-Yi Chou, Jin-Tan Liu, and James K. Hammit, "National Health Insurance and Precautionary Saving: Evidence from Taiwan," *Journal of Public Economics* 87 (2002): 1873–94.
42. National Bureau of Statistics of China, *China Statistical Yearbook 2005*, 494; People's Bank of China, *Quarterly Statistical Bulletin*, no. 41 (Beijing, 2006), 33.
43. Before-tax profits of industrial firms with sales above RMB5 million were RMB1.95 trillion in 2006 (National Bureau of Statistics of China, *China Statistical Yearbook 2007*, 503–505). In 2004 the profits of all industrial firms exceeded those of firms with sales of more than RMB5 million by 15 percent. Assuming this ratio was unchanged in 2006, profits of all industrial firms in 2006 can be estimated at RMB2.2 trillion. China's three largest oil producers are subject to a windfall profits tax, which amounted to RMB45 billion in 2006. Profits also are subject to the corporate income tax. While the statutory rate is 33 percent, various tax waivers reduce the applied rate to 24 percent for most domestic enterprises (Zhu Zhe, "Unified 25% Corporate Tax Proposed," *China Daily*, December 25, 2006). Assuming the average corporate tax rate on domestic firms was 24 percent, after-tax profits can be estimated at RMB1.67 trillion or 8 percent of 2006 GDP.
44. Louis Kuijs, William Mako, and Chunlin Zhang, "SOE Dividends: How Much and to Whom?" World Bank Policy Note (Beijing: World Bank, October 17, 2005), www.worldbank.org (accessed August 9, 2006).
45. For example, effective August 19, 2006, the People's Bank of China raised the nominal interest rate on a one-year term corporate deposit to 2.52 percent. The corporate goods price index in August 2006 was up 2.9 percent compared with August 2005, making the real return –0.4 percent. Nominal returns on short-term deposits are less than 2.52 percent, as low as 0.72 percent for demand deposits, making the real return on deposits of less than one year as low as –2.2 percent. The next adjustment was effective May 19, 2007 when the one-year deposit rate was raised to 3.06 percent. But the corporate goods price index for May 2007 was up 5.1 percent compared with May 2006, making the real return –2 percent. The de-

mand deposit rate was left unchanged at 0.72 percent so by mid May the real return fell to -4.4. In short-deposit rates for corporates are becoming increasingly negative in real terms.

46. Kuijs, Mako, and Zhang, World Bank Policy Note.

47. Calculated from data in the flow of funds accounts reported in the annual *China Statistical Yearbook*. The flow of funds data for 2004, released in the fall of 2007, show a further 4.7 percentage point decline in household disposable income as a share of GDP in 2004 alone. However, because the 2004 flow of funds accounts are based on the revised GDP data released in late September 2006, the 2004 numbers on disposable income and GDP are not comparable with those previously published.

48. Nicholas R. Lardy, *China's Unfinished Economic Revolution* (Washington: Brookings Institution, 1998), 109.

49. Morris Goldstein and Nicholas Lardy, "China's Exchange Rate Policy: An Overview of Some Key Issues," in *Debating China's Exchange Rate Policy*, ed. Morris Goldstein and Nicholas Lardy (Washington: Peterson Institute for International Economics, 2008), 4–9.

50. The real interest rate is calculated as the one-year lending rate minus the inflation rate reflected in the corporate goods price index. The latter index is compiled and published by the People's Bank of China.

51. Jianwu He and Louis Kuijs, "Rebalancing China's Economy—Modeling A Policy Package," World Bank China Research Paper no. 7 (World Bank, September 2007), www.worldbank.org.cn.

52. World Bank, "Water Supply Pricing in China: Economic Efficiency, Environment, and Social Affordability," Policy Note (Washington, December 2007), 4.

53. Ministry of Finance, Ministry of Agriculture, and State Tax Bureau, "Notice Concerning Issues in Lowering the Agricultural Tax Rate and Carrying Out the Reform of Eliminating the Agricultural Tax in Trial Points" (Beijing, June 30, 2004), www.mof.gov.cn (accessed July 21, 2006).

54. Wen Jiabao, *Report on Work of the Government* (Beijing, April 18, 2008).

55. Based on the revised 2006 GDP figure of RMB21,192 billion the National Bureau of Statistics reported in April 2008. State Tax Bureau, "The Adjustment of the Individual Income Tax Will Bring RMB28 Billion in Benefit to Tax Payers" (Beijing, November 17, 2005), www.mof.gov.cn (accessed July 21, 2006); National Bureau of Statistics of China, "Report Concerning the Results of the Verified Final Data on 2006 GDP and the Verified Preliminary Data on 2007 GDP" (Beijing, April 10, 2008), www.stats.gov.cn (accessed June 12, 2008).

56. Ministry of Labor and Social Security, "Regulations on the Minimum Wage" (Beijing, December 30, 2003), www.tr.s.molss.gov.cn (accessed June 29, 2006).

57. Workers and staff is a category that includes a substantial portion of individuals employed in urban areas but excludes those working in private firms and the self employed, as well as foreigners and persons from Hong Kong, Macao, and Taiwan.

58. Beijing Municipal Labor and Social Insurance Bureau and Beijing Statistical Bureau, "Announcement on Developments in Beijing Municipal Wage and Social Insurance Affairs in 1999," www.bjld.gov.cn (accessed June 24, 2008); Beijing Municipal Labor and Social Insurance Bureau, "Notice Concerning the Adjustment of the Minimum Wage Standard in Beijing Municipality in 2007," www.bjld.gov.cn (accessed June 24, 2008); and ISI Emerging Markets, CEIC Database.
59. China Statistical Information Net, "Wages of Beijing Workers and Staff Increase Steadily; Differentials Across Industrial Branches Expand" (Beijing), www.hebei.gov.cn (accessed July 10, 2006).
60. This appears to have been partially offset by the actions of local officials in rural areas. In response to the abolition of the agricultural tax, which had accrued to local governments, they imposed increased levels of unauthorized fees on rural residents.
61. Data in the paragraphs that follow are taken from speeches presented at the National People's Congress in Beijing in early March 2008.
62. National Bureau of Statistics of China, *China Statistical Abstract 2007*, 209; National Bureau of Statistics of China, *Statistical Report on the Development of Labor and Social Insurance in 2007* (Beijing, May 21, 2008), www.stats.gov.cn (accessed May 21, 2008).
63. State Council, "Opinion on the Trial Implementation of the State Capital Management Budget" (Beijing, September 8, 2008), www.sasac.gov.cn (accessed September 25, 2007).
64. Profits of all industrial firms in 2006 are estimated to be RMB2.2 trillion (note 43). I assume that 41 percent accrued to state-owned and state-controlled firms, the share they accounted for in 2005; National Bureau of Statistics of China, *China Statistical Yearbook 2005*, 491, 497, and *China Statistical Yearbook 2006*, 509. Deducting the windfall profits tax of state-owned oil companies and the average corporate income tax of 24 percent (note 43) results in an estimate of after-tax profits of RMB650 billion.
65. Ministry of Finance, "Progress in the Work of Reforming Rural Taxes and Fees in 2004 and the Direction for Work in 2005" (Beijing, March 2, 2005), www.mof.gov.cn (accessed July 21, 2006).
66. Ministry of Finance, "The State Capital Management Budget Is Not the So-Called 'Taking from the Fat to Subsidize the Skinny'" (Beijing, September 14, 2007), <http://news.xinhuanet.com> (accessed October 3, 2007).
67. Zhe, *China Daily*, December 25, 2006.
68. The central bank did raise the demand deposit rate briefly by 9 basis points to 0.81 percent for five months in 2007, between July 21 and December 20.
69. National Bureau of Statistics of China, "Overall Stability in National Economic Circulation in the First Quarter" (Beijing, April 16, 2008), www.stats.gov.cn (accessed April 16, 2008).
70. Jonathan Anderson, *The Chinese Monetary Policy Handbook* (Hong Kong: UBS, November 2007).

71. An effective exchange rate is a weighted average of the bilateral exchange rates with each of a country's trading partners where the weights are the trade shares of each trading partner. A real exchange rate is one adjusted for relative price changes at home and abroad, typically based on consumer price data.

72. US Department of Labor, Bureau of Labor Statistics, "Import/Export Price Indexes," 2006, <http://data.bls.gov> (accessed April 17, 2008).

73. Nicholas R. Lardy, *Integrating China into the Global Economy* (Washington: Brookings Institution, 2002), 26.

74. National Bureau of Statistics of China, *China Statistical Yearbook 2007*, 72.