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Weekly Report

A Great Leap Forward, the Second Time Around—Thirty Years of Economic Reforms in China

December of 2008 marks the 30th year of the beginning of China's economic opening. The country's rapid development since 1978 is without historical precedent. Yet this growth is even more impressive when one surveys the entire period from the founding of the People's Republic in 1949 to present. Although the years from 1949 to 1978 were close to catastrophic, and the basis for economic development over the next thirty years could have hardly been worse, on the 60th anniversary of the government's founding, the country's achievements—at least from an economic perspective—must be viewed as an extraordinary success.

On the 30th anniversary of China's economic opening, the following article assesses that which has been achieved to date. It also explores the causes of the economic stagnation of the "lost decades" between 1949 and 1978. The deep stagnation experienced during the early years of the People's Republic as well as China's reorientation in 1978 and subsequent boom can only be understood with reference to this historical period. Any assessment of the country's present-day political and economic situation is also contingent upon an appreciation of the long cycles that characterize Chinese history.

Since the opening of the country and its rise to the world's second-largest economy and trading partner, China has surpassed Japan and taken on equal standing with the EU as the most significant decision maker in economic and political affairs after the US. China's importance is not yet reflected in World Bank and IMF quotas or in the composition of the G8—yet China is sure to take on an increasingly prominent role in coming years.

If China can maintain the growth rates witnessed over the past three decades, in less than 15 years it will surpass the US as the world's largest economy and most significant trading partner. While the future is by no means preordained, all of the preconditions for this to occur are in place. China still possesses large labor reserves; is a net creditor to the rest of the world and holds currency reserves of a historically unprecedented volume; will soon be the largest and most dynamic domestic market in the world (and will therefore continue to attract direct foreign investment); and displays considerable potential for growth in domestic demand. Furthermore, the reform of China's financial sector and the deregulation of capital flows could potentially stoke additional economic expansion. The current financial crisis has not left China

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unscathed, but is unlikely to have a lasting effect on the country's long-term development.

Prior to the rise of the Qing Dynasty (1644–1912), China was a highly developed country, and much more advanced than Europe in the applied sciences and arts. At the beginning of the 19th century, for example, China's share of world GDP was considerably larger than Britain's. A number of factors were responsible for China's economic torpor in the 17th and 18th centuries and its rapid decline in the 20th.

The Qing—unloved rulers from Manchuria—were primarily concerned with maintaining military power. They relied on China's time-tested institutions, but did not develop its administrative structures further. Until the end of the Qing Empire, it was impossible to awake a readiness for modernization and change within the administrative apparatus. The 19th-century Chinese experience stands in sharp contrast to Japan, which embarked on a radical path of modernization in the Meiji Restoration. In the period from 1700 to 1850, the population of China grew from 150 to 410 million. However, during this time period the size of the Imperial administration remained unchanged. As a result, the government was increasingly incapable of managing its administrative tasks. The impoverishment of the rural population and the increasing weakness of governmental authority led to a wave of uprisings, the largest of which was the Taiping Rebellion, which lasted from 1850 to 1864. Approximately 20 to 50 million people died during this tumultuous period, causing China's population to drop to 350 million by 1873.

Beginning with the First Opium War (1839–1841), the Western powers—particularly Great Britain—took advantage of China's evident weakness. The British purchased tea in Canton, but were unable to sell their industrial goods in China due to a lack of demand. To resolve this problem, the British sold industrial goods in India, “created” demand for opium in China, and supplied this demand with opium from India, thus creating a circle of commercial exchange. In 1841 Hong Kong was “acquired,” and efforts were made to establish additional bases for Far East trade. Following the Anglo-French Invasion of 1856–60, China ceded numerous port cities to the British, granted administrative autonomy and exemption from taxation, and later the right to administer and collect tariffs. Following its defeat in the Sino-Japanese War (1894–95), China recognized the independence of Korea and ceded Taiwan to the Japanese. In 1900 anti-Western sentiments in China led to the so-called Boxer Rebellion. Nu-

merous Western powers were involved in quelling the unrest; among them, the German Reich.

China's economic modernization was forestalled by numerous factors at the beginning of the 20th century. Investment in automated tools and machines was largely redundant, for example, due to a vast surplus of human labor. China's ruling class was unable to recognize the advantages of Western-style development. In their view, China, the “Middle Empire,” was the center of the world—intellectually and spiritually superior to the West and dominant in terms of both its size and population. Social unrest and international conflict also weakened China further: All prospects for stable economic development were undermined by rebellions and revolts—which culminated in a civil war that lasted over twenty years—and Japan's military expansionism starting in 1931.

1949–1978: The Agony of the Mao Years

In the wake of the stagnation which lasted from the 17th to the 19th century, and two wars in the first half of the 20th century (the Chinese Civil War and Japanese invasion), the Communist regime that took power in 1949 was confronted by a country in ruin—even worn-torn Germany in 1945 had significantly better prospects for future economic development. In China, for example, there were no factories that could be rebuilt, no trade relations that could be reestablished, no universities, and no experience with industrial manufacturing. An inexperienced ruling class without academic training or practical experience in civil administration stood at the helm of a country with a largely illiterate population. The retreat of the Nationalists to Taiwan and migration of many entrepreneurs to Hong Kong left a vacuum that was exacerbated by the purge of many of the country's remaining elites. In 1950 average life expectancy in China was 36 years.

The development of an administrative apparatus was the first item on the new government's agenda. Agriculture was nationalized, and farm workers were initially paid based on output. A few year later wages were introduced. While two-thirds of the industrial sector was in state hands under the Nationalists, the Communists quickly placed all of Chinese industry under government control. Small businesses remained in private hands. The goal of becoming as independent as possible from foreign powers necessitated the development of heavy industry. Under Stalin, industrialization in Russia was enabled through the restriction of private consumption and the siphoning off of agricultural surpluses. This strategy was only viable in China on a limited

basis. The production of consumer goods was indeed of secondary importance—as was the material prosperity of the population—yet the agricultural sector, in which 90% of the population was employed, could not be fully harnessed to boost industrial production.

The Soviet Union sent over 10,000 specialists to assist in the industrialization effort, and 28,000 Chinese were trained by the Russians prior to the Sino-Soviet split in 1960. Russian financial assistance, by contrast, was meager: Only 4% of China's industrial investment was financed through Soviet loans (no grants were provided!) Zero assistance, of course, was received from Western countries.

Nevertheless, by 1958 the Communist government could boast a series of successes. The hyperinflation caused by the war was quickly brought under control with wage payments that were coupled to a basket of goods consisting of staple foods and other basic commodities. Average annual growth was 8.9% during the First Five-Year Plan (1953–57). The population grew from 560 million in 1952 to 630 million in 1957, and per capita income rose approximately 5% on an annual basis. The population jump was attributable in no small part to increased life expectancy, which rose rapidly to 57 years by 1958. The Communist Party of China (CPC) also encouraged a high birth rate. Serious doubts have been raised about official data from this period. Yet it is undisputed that the standard of living in China rose considerably in the years up to 1958.

In 1956 the Hundred Flowers Campaign was initiated. Intellectuals were encouraged to criticize the bloated bureaucracy and its methods, but within limits. An “intellectual” was anyone who had graduated from a secondary school. Under this definition, there were some 5 million intellectuals in China in 1956 (of a population of 630 million).

The Hundred Flowers Campaign was directed at a fundamental problem suffered by all socialist systems: Party functionaries didn't always have the necessary training or experience, were often not motivated, worked for their own pecuniary interests, and failed to fulfill official targets. Due to the excessive expansion of the administrative apparatus and power strivings of top officials, Mao feared that the weaknesses endemic to the old, imperial power structure would be reproduced. The intellectuals were initially reluctant to voice criticism, but as criticism appeared within the CPC in 1957, the intellectuals began to take an open stance. After five weeks the entire campaign was stopped and replaced by an Anti-Rightist Movement, aimed at intellec-

tuals. Between 400,000 and 700,000 “intellectuals with rightward leanings” were “displaced.”

Mao's next initiative was the Great Leap Forward (1956–60). This time Mao tested his abilities as an economic expert. Mao had recognized that the Stalinist model couldn't function in China. Instead of siphoning off agricultural wealth for the benefit of industry and drawing the rural population into cities, Mao concluded it would be better to boost agricultural and industrial production in rural regions, which had a surplus of labor and ongoing problems with underemployment. To achieve this—so Mao's rationale—one didn't need to make large investments. One simply needed to fire the revolutionary passions of the rural population and exhort them to heroic acts of selflessness. With so much unused manpower, dams could be built, canals dredged, land re-cultivated, and iron forged, or so Mao's thinking. His ideas were not entirely new and remind one of the mass effort involved in the construction of the Great Wall of China.

30 Million Die of Starvation in the Great Leap Forward

In 1958 the Chinese harvest was a good one. In 1959, by contrast, the harvest was catastrophic. Poor weather was partially to blame. While the peasants were busy winning the revolution in the trenches, the fields were neglected. Large swaths of China began to suffer from famine. Over 30 million Chinese starved or fell victim to disease. This was not reflected in official statistics, however. Agricultural production, in fact, was said to have doubled. Even industrial production fell during this period.

Mao suffered a considerable loss of prestige. Bitter conflict broke out in the Central Committee, which soon led to the formation of two opposing factions. Mao was the leader of a romantic mobilization of the rural population. Liu Shaoqi and Deng Xiaoping, by contrast, represented the principle of individual responsibility. In 1960, as discordant relations with the Soviet Union intensified, Khrushchev suddenly withdrew all Russian advisors from China.

Mao won the power struggle against the pragmatists in his party with the launch of the Great Proletarian Cultural Revolution. In the narrowest sense the Cultural Revolution lasted from the end of 1965 to April of 1969. A more expansive interpretation, however, sees the revolution continuing to 1976. It occurred in four phases and was aimed at eliminating “revisionism” and creating new revolutionary structures.

Box 1

Chronology of Reform

1978	Start of the Open Door policy for foreign trade and investment	1995	Employee relationship for workers in state enterprises
1979	Transfer of agricultural collectives to private households; township and village enterprises (TVEs) receive enhanced status	1996	Full convertibility for the current account
1980	Creation of Special Economic Zones (SEZs)	1997	Restructuring of state enterprises Return of Hong Kong and Macau to the People's Republic of China
1984	Private companies permitted (with fewer than eight employees)	1999	Private ownership provided for under the Chinese constitution
1986	State enterprises can now go bankrupt	2001	China becomes member of the World Trade Organization (WTO) In the Tenth Five-Year Plan (2001–2005) the reduction of environmental impacts is identified as a goal for the very first time
1988	TVEs begin to wane in importance	2003	Closer Economic Partnership Arrangement signed between the Hong Kong Special Administrative Region and the People's Republic
1990	Opening of the first stock exchange in Shenzhen	2004	Ownership rights provided for under the constitution
1993	Political decision made to create a "socialist market economy"		
1994	Creation of corporate law; abolition of multiple exchange rates		

In the first phase, which lasted until the summer of 1966, Mao won the upper-hand in the Central Committee and successfully pursued his campaign to expunge "revisionism." In the second phase, which lasted until the end of 1966, the Red Guards were established. The Red Guards, a mass movement that primarily drew its membership from the adolescent population, were tasked with abolishing the so-called "Four Olds": Old Customs, Culture, Habits, and Ideas. In the third phase, which lasted from January 1967 to mid-1968, the Red Guards seized power. With this seizure of power, the dispute between the radicals and conservatives broke out, the revolutionary momentum crumbled, and there was no clear answer to the question: what should one do with power? In mid-1968 Mao called on the People's Army and demobilized the Red Guards. In the fourth phase, which lasted from mid-1968 to April 1969, Mao re-organized the party and the military gained in influence. Although the Cultural Revolution was officially over, the largest excesses took place after 1969 in military purges.

One can assume that the official statistics—particularly between 1966 and 1976—were manipulated. It's unknown how many Chinese lost their lives in this period. The estimated death toll ranges from a few million to 30 million people. Nevertheless, the population is estimated to have increased by 170 million during this period. The constant unrest dealt a severe blow to the economy, particularly in the first three years of the Cultural Revolution. Elites and other "intellectuals," such as party functionaries,

teachers, and researchers, were interned in labor camps or killed. Most schools and universities were closed. According to official statistics, inflation-adjusted GDP rose by more than 100% from 1966 to 1978, while per capita income increased by more than 70%. A Chinese economic miracle!

1978–2008: Forced March to Prosperity

China was bitterly poor in 1978, as the first economic reforms were introduced: inflation-adjusted per capita income was US\$250, and the population stood at just over one billion. By 2007 the population had increased to more than 1.3 billion, and per capita income to US\$5,330—a twenty-fold increase in less than 30 years.

The Cultural Revolution, which persisted for almost ten years, led to the closing of numerous secondary schools and universities. This damage to the educational system, alongside the persecution of the "intellectuals," left deep scars in the quality of China's leadership class. The new leaders under Deng Xiaoping recognized that a fundamental change of course was imperative. This change of course was called "Opening" and "Motivation." The opening of the country to foreign investment and international trade ended the development strategy of autarky that had previously been pursued. In 1978 the total value of exports and imports was approximately US\$6 billion. The second half of Deng's new strategy—"Motivation"—was aimed at the rural

population. The agricultural collectives were progressively abolished, and their holdings transferred to the rural population, which was encouraged to take on more “personal responsibility.” Following the fulfillment of production quotas, which were purchased by the government at an intervention price, surpluses could now be sold by farmers on the free market. The intervention prices—initially far below market value—were gradually adjusted to prevailing market prices. Quotas were also reduced, and finally abolished in the 1990s. Land could not be sold, but it could be leased for long periods (15 to 30 years). The Chinese government is currently preparing to reform agricultural-land ownership rights.

The Chinese have always been pragmatists who don't think much of theory. As a consequence, they tend not to develop their own theories. They developed gunpowder, the printing press, navigational instruments, dam construction, and irrigation systems before the Europeans. Yet prior to the opening of the country, the Chinese had not developed a single pioneering theorem in mathematics or physics. In this way, no new theory of economic development has been devised or adopted by the Chinese. “We must cross the river by feeling the stones with our feet,” Deng said with regard to China's program for reform. A new approach would be tested in a province, and continued if successful. If the case of failure, the approach would be stopped. The costs of preserving the status quo thus become visible for the participants, as do the risks, costs of change, and profits. After the zigzag course taken during the Mao years, this new direction seemed appropriate, even if long-term success was beyond the immediate horizon. Without knowing it, Deng's approach was in complete alignment with the findings of the modern school of behavioral economics.

With a second principle—embodied in Deng's statement that “it doesn't matter what color a cat is, as long as it catches mice”—the role of ideology was devalued. In 1987 a three-step development strategy was initiated: The first step was to double the GDP from 1980 in ten years (this goal was reached ahead of schedule). The second step, to quadruple GDP by the end of the century, was also attained early. The third step was to increase per capita income to the level of a middle-income country by 2050. In the view of CPC, once this was achieved, modernization would be complete.

After the fall of the Soviet Union, the question was posed in Eastern Europe as to whether reform should be undertaken gradually, or whether it would be better to radically restructure all enterprises and institutions in one fell swoop. This question was

never posed in China. In contrast to Eastern Europe, reforms in China were introduced from within—the political structure was never a subject of debate. Consequently, China could not serve as an empirical demonstration of the advantages of a strategy of progressive reform which could be adopted by Eastern European countries—the challenges they faced emerged in a fundamentally different context. Indeed, if anything, China is a poor example for progressive restructuring. Numerous factors distorted market mechanisms and resource allocation while also contributing to corruption in the first twenty years of reform: the incongruence between prices set by the market and government, the competition between state enterprises and private firms, and the rationing of inputs provided by state enterprises. Today, however, government intervention in the economy is much less pronounced: 85–95% of all transactions take place under free-market conditions.

The program for reform initiated by Deng was not always implemented smoothly. The CPC was not unified in its commitment; reformers regularly struggled against conservative elements within the party. The decisive test between opposing factions was carried out in Tiananmen Square. Direct confrontation is traditionally avoided in Chinese culture. Linguistically, references are made to historical or literary metaphors. In the case of actual conflict, one typically sends representatives or proxies to advance one's interests. Tiananmen Square was a conflict between the radicals, who used the students as proxies, and the conservatives, who relied on elite units of the military. Over the short term, the conservatives were victorious, and were able to slow the tempo of political reform that had been induced by economic development. Over the long term, however, the reformers have been able to maintain control both economically and politically. As cynical as it may sound in light of the many thousands who perished: Tiananmen Square was an act of shadowboxing. A direct confrontation between the impoverished interior provinces—from which the conservatives drew their support—and the wealthier, reform-oriented coastal regions would not have been a desirable alternative.

Agriculture: More Productive than the US

The reform of the Chinese economy began in the agricultural sector. In 1978 some 330 million Chinese were employed in the agricultural sector, and only 100 million in other areas (25 million in state enterprises; 15 million in industrial TVEs; 6.5 million in construction; 9 million in the transportation sector; and 18 million in trade, restaurants, and banking).

Box 2

China's Economy Today

The industrial sector, which is composed of some 8 million companies, accounts for 42% of China's GDP (in Germany, this figure is xx%). Of China's working population of approximately 800 million people, 22.5% are employed in industry. 15% of industrial output is produced by state-owned enterprises, and an additional 25% by state-controlled holding companies. Government ownership, currently on a sharp decline, is highest in the following sectors (according to value added): Tobacco (98.6%), oil and gas drilling (93.8%), water (86.7%), coal mining (81.4%), oil refinement (77.3%), metal industry (46 to 64%, depending on the source), transportation vehicles (63%).

About 10% of global industrial production takes place in China, and the country is the world's largest manufacturer of steel in the world (420 million tons were produced in 2006). China is also the world's largest producer of coal, which supplies 70% of domestic energy demand. Coal deposits are located in northern China. Southern China, for its part, is home to the world's largest dam, which was constructed for a cost of US\$24 billion. China is the third-largest energy producer in the world after the US and Russia and the second-largest consumer of energy after the US.

China's service sector (the seventh largest in the world) is less developed than the industrial sector, comprising some 40% of GDP. Tourism, which contributes more than 5% to GDP and is a rapidly growing market, is increasingly in line with international standards. China has the second-

highest number of Internet users after the US, and 34% of the population has a cellular phone. China is making extensive efforts to promote the growth of the natural and social sciences. Top students are educated in the US and, after returning home, can draw on the international contacts they've established. 2.8 million scientists and academics are active at more than 5,000 government research centers, 3,400 university research institutions, and 14,000 economic research centers. China's biotechnology and computer sciences are considered first rate, and have the chance of playing a leading role worldwide. The country also takes great pride in its space program. A manned satellite was launched in October of 2005. In nuclear research, as well, China has closed the gap separating it from Western powers.

The total sum of exports and imports rose from an insignificant amount in 1978 to US\$325 billion in 1997 and to US\$1.8 trillion in 2006. China is a member of the Asia-Pacific Economic Cooperation (APEC) and was accepted into the World Trade Organization in 2001, after almost 15 years of negotiations. The most important outlets for China's exports in 2007 were: the US (21%), European Union (18%), Hong Kong (17%), Japan (12.5%), and ASEAN countries (7%). 80% of China's exports are industrial goods (machines, electronics, textiles). Crude oil and other raw materials are China's main imports. The key importers to China are Japan (17%), the European Union (12.5%), ASEAN countries (11%), South Korea (11%), and the US (8%). The proportion of high-tech goods exported by China rose from 15% in 1998 to 30% in 2007.

The growth in agricultural production triggered by reform was rapid and continuous. From 1980 onward the production of high-quality foodstuffs grew for the first time. In 2007 some 300 million Chinese were still employed in agriculture, contributing some 13% to GDP. The degree of productivity that has been obtained is considerable: China, for example, possesses 25% less arable land than the US, yet its agricultural output is 30% higher. Then as now, the rural population was largely underemployed, yet further migration to the cities was undesired. For this reason, municipal governments were encouraged to establish small township and village enterprises (TVEs). These enterprises were quickly and unexpectedly successful. Their success, however, led to undesired secondary effects such as increased corruption, and they quickly reached the limits of their productive potential. Political support also dwindled from 1988 onward with increasing privatization. Industrial enterprises in China are primarily located in metropolitan areas on the coasts. The Chinese go-

vernment has augmented the natural advantages of the coastal regions (a large population; lower transportation costs; higher education) with the creation of Special Economic Zones (SEZs). Approximately 10% of all Chinese industrial production is based in Shanghai, and approximately 60% of all industrial production is located on the coast. The four richest regions are located on the Pearl River Delta (Guangdong), at the mouth of the Yangtse (Shanghai), on the Bohai Gulf, and in the Peking-Tianjin-Liaoning region. The creation of the SEZs is responsible for an additional problem: a widening gap between the coastal and inland regions. To date rapid growth has been primarily focused in coastal regions, which has resulted in rising tensions between the populations of the wealthier coastal cities and poorer inland areas (see box 2).

From Socialism to Capitalism with Chinese Characteristics

Deng pursued a four-tiered growth strategy: Foreign trade, foreign direct investment, an extremely high savings rate (for a high rate of domestic investment), and a restrictive budget policy. The danger of developing high budget and current-account deficits (a so-called “twin deficit,” a classic problem faced by developing countries) has thus been avoided, and the growth process has been able to proceed unimpeded. A more detailed exploration of the four key elements of China’s economic strategy is undertaken here.

Foreign Trade: The Economic Crisis Forces a Demand Shift

Foreign trade has been the primary driver of China’s growth to date. A striking fact is that China’s leadership has focused on an export-driven growth strategy instead of pure import substitution. This strategy is based on a recognition that initial weakness will be supplanted by later strength. The export strategy is geared at perfecting production and achieving penetration of global markets, in order to subsequently supply growing domestic demand with world-class products, yet with a home-field advantage.

China’s strategy of export-driven growth has flooded the world with low-cost products, which has stabilized prices in recipient countries. However, this growth strategy, which requires enormous inputs of energy and raw materials, has increased commodity prices worldwide and worsened the terms of trade for advanced nations (as well as China).

Due to the rigid pegging of the Yuan to the US dollar, China was also one driving force behind the liquidity glut of recent years. Although China is at the core of the global imbalances that have developed over this decade, it has continually resisted US pressure to allow the Yuan to appreciate or to encourage its own domestic consumption, either of which would help to address distortions in global trade and capital flows. While the Yuan has gained more than 15% in value against the US dollar since May of 2005, the real effective exchange rate in 2008 was congruent to that in 2000. The potential for appreciation in real terms thus remains large.

China’s current account surplus in 2007 was US\$370 billion, or 11% of GDP (at market prices); it exported 40% of GDP (at market prices), or 18% of PPP-adjusted GDP. The relative degree of Chinese dependence on foreign demand has become a key question in light of the current recession in the world’s advanced economies. As exports are measured in terms of market prices, but GDP in terms of

value added, one must take into account the extent to which exports contain inputs which have been imported. According to estimates produced by UBS in 2008, the value added by exports represents 45% of export revenues. Consequently, China’s degree of dependence on exports (in relation to PPP adjusted GDP) is closer to 10% than 40%. Together, the US and European Union are the destination for approximately 1/3 of Chinese exports. Were the degree of penetration of Chinese exports to remain the same (which is a realistic assumption on account of the price flexibility of Chinese companies), a 1% fall in GDP growth in the US and European Union would only lead to a 0.1% fall in Chinese GDP.

This doesn’t mean that the current crisis will leave China untouched. It will most certainly restrict China’s freedom of action while necessitating a shift in the sources of demand for Chinese goods. If the Chinese are successful in rapidly realigning demand from export markets to the domestic economy (as currently foreseen by the government’s economic stimulus program), and if foreign direct investment does not dry up, the crisis should have a relatively moderate impact on Chinese growth, which is, incidentally, currently bolstered by low commodity prices.

Foreign Direct Investment: Few Limitations Remain

Modern technologies, modern management methods, and an understanding of the global marketplace have all been essential to the development of China’s export economy. Foreign direct investors are attracted to China primarily because of the latent growth potential of the world’s most populous domestic market. At the beginning of the 1980s China preferred foreign investments that helped to develop their export economy. In order to ensure knowledge transfer, investors were required to sign joint venture partnerships with Chinese firms. Tax advantages were also offered on a staggered scale, depending on the priority of the sector.

Existing limitations to foreign investment were largely abolished at the beginning of the 1990s; the precipitous drop in direct investments following the Tiananmen Square massacre was certainly one factor in this development. Foreigners could now produce for China’s domestic market outside of joint ventures with Chinese firms, and retained their tax advantages. China quickly became a net creditor to the rest of the world. As of 2008, China has amassed currency reserves of over US\$2 trillion. China’s interest in foreign direct investment remains strong, however, in order to continue the acquisition of foreign knowledge. In 2006 foreign

direct investment made up 14% of GDP and China's direct investment abroad was equal to 3.5% of GDP. The sum of China's current account surplus and net direct investment equals more than 20% of GDP. China thus has sufficient reserves for its own foreign investment and to endure setbacks. China is increasingly becoming an important direct investor to the rest of the world. Its investment is aimed at securing raw materials and access to foreign markets, particularly in developing economies.

Savings and Investment: The Highest Savings Rate Ever Measured

Since 1990 the national savings rate has exceeded 40% of GDP and even reached 50% in 2007. A sustained savings rate of this magnitude has never been witnessed in another country in the history of economics, and it provides China with a share of GDP for domestic investment that even Stalin was unable to achieve using the most heavy-handed interventionist policies. While more than 90% of the national savings rate in 1979 was attributable to the government and private sector, the savings rate for private households has continually grown, and, at last measure, constituted almost 25% of GDP (German households, by contrast, have a savings rate of 11%).

This extremely high savings rate is the result of structural anomalies in the Chinese economy and social system. In the first instance, Chinese households must shoulder nearly the full burden of providing for retirement, health care, and the education of their children. The government assists by providing full tax exemption for education or retirement savings that are invested in bank accounts or government securities. The modern, urban family in China has on average three members. The goal of reducing population growth was achieved with China's one-child policy. The current fertility rate is 1.8, down from 6 in 1970. China's modern households are thus able to retain a higher portion of their incomes, but are compelled to save more for retirement or emergencies.

An additional reason for the high savings rate is connected to the financing of the educational system. Primary and secondary school education is free in Germany and many other countries; in Communist China, by contrast, fees are widespread, and university tuitions are comparable to the annual salary of a skilled laborer. Many Chinese families thus begin saving for educational expenses as soon as a child is born. The average German household devotes one-quarter of its income to retirement funds and health insurance (when employer contributions are factored in). This is roughly equivalent to 12% of

Table1
Value Added by Sector. 2007
Figures in percent

	Industry	Construction	Services	Agriculture
USA	11.7	4.1	68.5	1.2
EU	19.7	6.6	51.6	1.7
China	42.0	5.5	40.0	12.5
India	22.0	6.8	51.0	20.5

Source: Chinese National Bureau of Statistics. . **DIW Berlin 2008**

GDP. If these contributions were saved by households instead of being paid into government funds, Germany would have a private savings rate of approximately 23%, just below China's.

The second structural anomaly is related to the underdevelopment of China's banking system, a system which does not readily provide for the financing of consumption, education, or the purchase of real estate. Families must save for many years before purchasing a car or home. Traditionally, bank deposits, government debt, and stocks have been the only financial instruments available to households for the investment of their savings. The fixed-interest return on these investments is below market rates for institutional investors, and for years has meant an interest rate that is considerably negative in real terms. Large areas of China's interior are undersupplied with financial services. Stuffing bank notes under the mattress is literally the only option for many Chinese savers. If families have a particular savings goal, then low interest rates alone force a higher savings rate. If Chinese families were able to finance just 50% of their real-estate purchases with mortgage loans, the savings rate could sink 3–4%.

The contribution made by businesses to the national savings rate has fallen considerably. The exorbitant profits earned by Chinese companies in the past have evaporated due to intense competition in the domestic market—the result of deregulation and the opening of China to foreign business—in conjunction with a continuous reduction in privileges for companies closely affiliated with the government. That being said, Chinese companies still earn handsome profits, which are sufficient to finance the greater portion of their rapid expansion. Small- and mid-sized companies have little access to outside financing, particularly long-term loans, and are forced to finance their expenses with non-disbursed profits. Previously the government also contributed to the high national savings rate. The Chinese government has for the most part been running budget surpluses since 1992 (there is no data prior to this year). A comparison with Germany yields a margin of difference between 2 and 5% (i.e., Chinese surpluses weighed against German deficits).

How Long Will China's High Savings Rate Be Sustained?

Viewed in terms of the goal of optimizing prosperity, China's savings rate is too high. Its financial system is also extremely inefficient. China's high current account surpluses are the result of a savings rate that exceeds domestic-investment requirements. A reduction in the savings rate would help to bring China onto a more optimal development path. China's savings rate would fall considerably if, through deregulation and opening of the market to foreign banks, its financial system more closely resembled that of advanced Western countries.

China's population is currently aging more rapidly than Germany's. The average senior expends accumulated savings. Consequently, a lengthening of China's age structure will automatically reduce the savings rate. In addition, efforts are currently underway to establish a national retirement system. This would reduce the need to save for retirement. The largest problem involves gathering data on the rural population—which still comprises 50% of the overall population—for inclusion in such a system. China aims to at first limit the safety net of a retirement system to the industrial and service sectors. This will further exacerbate the divide between urban and rural population.

China's high investment rate of more than 40% of GDP is reflective of a rapidly growing country with high demand for expensive infrastructure, modern residential development and commercial real estate. In 2007 China spent more than US\$169 billion on transportation infrastructure alone. 22% of all investment is made in infrastructure; 20% in residential construction; 15% in commercial real estate; and 32% in equipment investments. The remaining 11% is invested in agriculture and rural infrastructure. In light of high business revenues and low levels of debt, it's difficult to appraise this investment rate as too high.¹

Public Sector Share of GDP Lower than the US

The division between the private and public sector in China is blurry, as the government exercises wide-reaching authority through state-owned enterprises, holding companies with a majority government stake, and town and village enterprises (TVEs). The distribution of total government expenditures and revenues between the central government and provincial/municipal governments has changed fundamentally since the beginning of the economic reforms. While the central government disbursed

¹ A study by the World Bank came to the conclusion that the wage ratio in industrial production fell from 24% in 1998 to 17% in 2005. At the same time, production output also grew rapidly.

Table 2

Chinese Government Expenditures, 2006

In Yuan billions

Investment	439
Innovation, science, & technology	189
Industry, transportation, trade	58
Agriculture	216
Culture, science, health care, education	743
Social expenditures	436
Defense	298
Administration	564
Subsidies	139
GDP	16000

Source: Chinese National Bureau of Statistics. **DIW** Berlin 2008

47% of expenditures and collected 15.5% of revenues in 1978, by 2006 its share of revenues had risen to 53%, with revenues falling to 25%. The goal of significantly strengthening the central government has thus been attained. China's budget discipline is impressive. Surpluses are achieved more often than deficits. Moreover, in recent years none of China's deficits would have breached the limits under Europe's Maastricht Treaty.

The government invests its budget surpluses in infrastructure on a massive scale. More money was invested in infrastructure between 2000 and 2005 than in the preceding 50 years. At the end of 2007 China had approximately 33,000 miles of freeways (all toll roads), and 49,000 miles of railway lines.

Despite high revenues and investment, the national budget (without investments) represents less than 20% of GDP, placing it below the US. China's pattern of expenditure more closely resembles the US than the social market economies of Europe. In this way, the unprejudiced observer is persuaded to characterize China's economic system as fundamentally capitalist in nature. Expenditure on social programs is extremely modest and only comprises some 3% of GDP; expenditures on culture, science, health care, and education account for an additional 4.5% of GDP.

China's Growth since 1979: Growth Factors, Increased Social Services, Sustainability

China's four-tiered growth strategy—the strengthening of exports; the attraction of foreign direct investment; the encouragement of higher savings rates; and the reduction of the public spending ratio—must be judged in terms of its success. Since 1979 China's economy has grown an average of 10% annually. After a 12% growth rate from 1979 to 1988, GDP growth leveled off to 9% between

1988 and 2003, only to increase again to almost 10% since 2003—annually. This blistering pace of growth has not yet slowed. With the aid of a production function, growth can be subdivided into the production factors of labor and capital, with a remaining element, the so-called Solow residual, which is generally interpreted as an improvement in production technology. China's labor reserves have been mobilized, but not exhausted. Labor only contributed 1.5 percentage points in the first phase and, more recently, less than 0.3 percentage points to GDP growth. Per capita capital stocks have risen by 7.5% annually and have made the largest contribution to growth: approximately 5 percentage points. The Solow residual was constant at 5.6 percentage points in the first phase, and was 2.8 percentage points at most recent measure. Since 1978 the Solow residual has contributed 3.7% to GDP on average. The Solow residual itself is composed of three elements: a sectoral shift to industries with higher productivity; education; and multifactor productivity. (In the standard production function a one-sector economy with a homogeneous labor force of invariable skill level

is used for the sake of simplification.) A shift to higher-productivity sectors contributed more than 2 percentage points to GDP early on, yet made only a marginal contribution at last measure, as China's economic structure is being shaped to an ever greater extent by market conditions. A redeployment of the labor force from agriculture to the industrial and service sectors and the lesser importance of state-owned enterprises have been the hallmarks of this shift. Education has made a steady contribution of approximately 1 percentage point. The contribution made by multifactor productivity has oscillated between 1 and 3.5 percentage points.

After such a long period of high growth, the question arises: how wealthy is China? In 2007 GDP at market prices was US\$3,238 billion, or US\$2,500 per capita. Average values, however, mask China's extremely uneven income distribution. 300 million Chinese have no access to drinking water, yet, after the US, China has the largest number of billionaires. It bears mentioning, however, that the Gini coefficient has fallen continuously over the course of China's development, meaning that inequality has also fallen.

In order to compare China's wealth internationally, a purchasing-power-parity (PPP) adjustment is necessary, as very low wages lead to considerably lower prices for comparable non-tradable goods. An OECD study came to the conclusion that the purchasing power factor for China is extremely difficult to measure, but would produce at present at least

a doubling of GDP at market prices. This correction will diminish in size with increasing growth in China's standard of living and wage convergence. In 1975 the PPP multiplier was 12.

In this way, China had a PPP-adjusted per capita income of US\$5,325 in 2007, or about 16% of Germany's (US\$35,000). China's PPP-adjusted GDP is US\$7.034 trillion (Germany: US\$2.81 trillion). The Chinese PPP-adjusted GDP is thus approximately 2.5 that of Germany, half that of the US, and the second largest in the world. China will soon surpass Germany as the world's leading exporter. China already has the world's largest currency reserves, the world's largest banks, and is a forerunner in numerous branches of the economy.

If China can continue to maintain an average growth rate 6 percentage points higher than the US, China will overtake the US as the world's largest economy in 15 years at the very latest, with a per capita income roughly one-third that of the US. But can China maintain 8 to 10% growth for another ten years, particularly in light of the growth deceleration experienced by other developing countries in the past?

Chinese Age Structure a Key Problem

With regard to its future prospects for growth, China possesses a number of trump cards and is also confronted by three central problems. The first problem is China's age structure, which requires a higher retirement age and the setting aside of provisions for old age. The second problem is the uneven development between the inland and coastal provinces. Large infrastructure investments are already planned in order to enable growth in China's interior. Enormous assistive measures (already passed by the government) are necessary in this regard. From 2006 to 2010 some 180,000 miles of roads will be built, increasing China's road network by 50%. By 2015 China also plans to expand its railway network by 60%, and construct 97 new airports by 2020. China's cities will also have to be developed further to absorb the annual migration of 10 to 20 million people to urban areas.

The third problem is connected to China's energy-intensive economic structure and the attendant costs to the environment. Although Chinese life expectancy is comparable to that of Western countries, its energy-intensive growth has been taking a considerable toll on the environment. According to a World Health Organization report published in 1998, of the world's ten most polluted cities, seven are in China. The government had to take extreme

measures in order to satisfy conditions for the 2008 Olympic Games. Nevertheless, in the Tenth Five-Year Plan (2001–2005) the goal of reducing environmental impacts was stated for the very first time, and in the Eleventh Five-Year Plan the Chinese aim to reduce energy consumption by 20% by 2010.

Yet China's extremely high energy consumption and the pollution it creates are not only a result of rapid growth. A diverse range of energy subsidies and the Chinese tolerance for pollution are two additional factors. China has developed a comparative advantage in the production of CO₂-intensive goods, and has a global market share for such goods of 31%. Yet progress has been made. At the beginning of December the Chinese government voted to abolish subsidies for gasoline and diesel fuel. Consumer prices have increased by a factor of ten (!) due to the exploitation of the currently low international fuel costs.

An additional circumstance that provides grounds for optimism is that a solution to the aforementioned problems requires financial reserves, and China is well off in this regard. As China's population was uniformly poor, a social security net and environmental consciousness were of low importance. Growing wealth has automatically enhanced the importance attached to these two issues, and the Chinese government has already undertaken a change of course. An effort to counteract the heterogeneous development of the coastal and inland regions is also becoming apparent. The current financial crisis, for example, has stimulated a greater focus on investing in China's interior regions.

China's trump cards for future growth are its labor reserves and low wage costs; the potential for reforming its inefficient state-owned enterprises; its enormous financial reserves; as well as the potential for reforming its financial market—which would fulfill the precondition for the deregulation of external capital flows.

China's Labor Market: Immense Potential for Development

Any evaluation of China's potential for future growth should not overlook its labor market. High growth always reaches its limits when full-employment is achieved and wages climb to international levels. With a workforce of 800 million, China has a labor-force participation rate of approximately 60% (Germany's is less than 50%). A considerable workforce potential is offered by the agricultural sector, in which 300 million are still employed, yet are for the most part underemployed—up to 200 million

laborers could be redeployed from this sector over the mid-term.

While labor costs, particularly for skilled employees, have risen considerably, wages for unqualified laborers are still just one-tenth of that in Germany. In the industrial sector, unit labor costs are 50% that of the US and under 40% that of Europe. Consequently, with a view to China's labor market, there is still a great deal of flexibility for a steady contribution to growth.

In the future the public sector will also continue to make an important contribution to economic expansion. Approximately half of all employment and value added in the industrial sector is attributable to state-owned enterprises, companies with a majority stake controlled by the government, and TVEs. In 1998 this figure was 70%. Profitability is one of the areas that has been improved considerably in recent years, yet on the whole there are many resource-intensive problem areas. Productivity in the non-private sector is considerably lower on average. If the trend witnessed in recent years continues, it will be possible to obtain further productivity increases in government-controlled and -owned enterprises.

Banking Sector Still Waiting for the Great Leap Forward

China's partially privatized banking sector, which is still controlled by the government and protected from competition by capital controls, also evinces potential for a great leap forward in productivity. Most of the Chinese economy's problems and anomalies are connected to its underdeveloped financial market. At present the inflation rate is nearly 10%, yet long-term government securities have a yield of 3%, or a real interest rate of -7%. Debtors are thus able to obtain easy money at the expense of savers. On the whole, government intervention in the financial market and the negative real interest rate lead to the distorted allocation of resources.

Outlook

Over the last 30 years China has undergone a radical process of modernization, producing a rapid rise in per capita income. The extreme gap separating China from the world's highly industrialized economies and its policy of gradual opening and modernization have made this record growth possible. Foreign investors have recognized China's growth potential and have made massive investments in its economy, which will soon be the world's largest domestic market.

China has sufficient reserves to keep growth high: Labor reserves, financial reserves, latent potential for reform and an interior that is still to be developed. Even worldwide recession will not decisively slow China's efforts to catch up with the world's leading industrialized economies. With Asian wealth growing rapidly and efforts to create an East-Asian free trade zone, China will be influenced to an ever-decreasing extent by the Western world and has already become the epicenter of the most economically dynamic region in the world. China's extremely high current account surpluses have also lost their economic justification. China should realign its economy to encourage a long-overdue increase in consumption and make the necessary infrastructure investments to develop its interior provinces. Both of these moves would be in China's own interest.

Capital controls have previously served the country well and helped to insulate China from the Asian crisis. The time is now ripe, however, to open up and deregulate its financial market. This would rationalize resource allocation while boosting consumption.

When China—soon to be the world's largest exporter—allows full currency convertibility, the Yuan will quickly achieve the status of a reserve currency. In this context the present “one land, two systems” arrangement with Hong Kong will only remain a transitory solution. With full convertibility China's transition will be complete and Hong Kong will be accepted as a center of trade and finance with a special political status in a Yuan-based currency union. China—well on its way to becoming the world's largest economy, with the three large financial centers of Shanghai, Shenzhen, and Hong Kong—will become the steward of the world's third reserve currency, alongside the US dollar and euro. China's weight in international organizations such as the World Bank and International Monetary Fund will also increase considerably in the near future. China, which remains a net recipient of direct investment due to the attractiveness of its market, has already begun to increase its own foreign direct investment. China is already the world's No. 1 net financial investor. China is not only treading a path to prosperity, but to superpower status, as well.

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