Prudential Equity Group, Inc.

RESEARCH

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CHINA FOR INVESTORS: THE GROWTH IMPERATIVE

Topical Study #62

All important disclosures can be found at the end of this report.

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I. Large & Small Numbers

Demography is destiny. Over the past 20 years, the aging of the Baby Boomers in the United States was probably one of the most significant events for the global economy and financial markets. This was one of my major themes during the 1980s and 1990s. Over the next 20 years, and probably beyond, China's demography will most likely drive and dominate many of the most important economic, financial, political, and military developments around the world. This is the first of an occasional series of Topical Studies on the consequences of China for global investors.

Historically, dynasties determined the destiny of China's masses. Now and in the future, China's demography is likely to determine the destiny for all of us on Planet Earth. We all know that there are 1.29 billion people in China (Figure 1).[1] For investors, smaller numbers may be just as important:

1) Since 1990, the population of China increased by 141 million, close to the current population of Japan (Figure 2). Birth control policies held population growth down to 1.07% per year over this period. China is the world's fastest-growing major economy. During the 1800s, the United States was the world's fastest-growing emerging economy. A huge influx of immigrants contributed to the rapid development of the American economy during that century. Today, the Chinese have the potential to expand internally simply by giving birth to so many people.

2) The percent of the population living in rural areas fell to 61% last year, down from 79% in 1982 and 88% in 1952 (Figure 3). This trend toward urbanization is very similar to the experience of the United States during the 1800s and through the 1970s. In 1800, 94% of the U.S. population resided in rural areas. By 1900, this percentage declined to 60%. It fell to a record low of 26% in the 1970s (Figure 4). It is likely that more than half of China's people will be living in urban neighborhoods by the end of this decade, in my opinion.

[1] China is not only the most populous country in the world, but it has 250 million more people than the second most populous country, India. China is not only large in population, but also in geography. Among the five largest nations in terms of geographic size, China is third. While it is not nearly as large as the Russian Federation, it is not much smaller than Canada, nor much bigger than the United States. China's income per capita is low. There are 148 nations in the world with incomes per capita higher than China's. But despite China's low income per capita, its large population means China is the world's seventh-largest economy. While China's economy is markedly smaller than the sixth-largest economy, Italy, it is also significantly larger than the eighth-largest economy, Brazil.

3) The consequences of rapid urbanization in China are staggering. The country's rural population decreased by 13 million during 2002 (Figure 5). At the same time, the urban population rose by roughly 20 million people, which has been the average growth since 1996 (Figure 6). Senior Metals Analyst John Tumazos, one of the many thought-provoking industry analysts at Prudential Equity Group, has made a strong case that the Chinese must, in effect, build a Philadelphia or Houston per month, to meet the needs of the people leaving the farms and moving into the cities. John follows several materials-producing industries. He believes that the expansion of urban infrastructure is significantly boosting demand for such commodities as copper and steel.

4) China must create an estimated 8 million jobs per year to maintain a low unemployment rate, which was about 4% last year (Figure 7). In the United States today, the number of unemployed workers is 8.8 million. In other words, there are roughly as many job seekers in the U.S. today as the number of new jobs the Chinese must find for their workers every year. This is becoming a more challenging task because rapid gains in productivity mean that every 1% increase in real GDP is likely to generate fewer jobs than in the past. In China, output per employed person has been increasing at an impressive 7.2%, on average, from 1995 through 2002 (Figure 8).

5) China's auto industry is likely to be one of the main drivers of economic growth over the next few decades, much as it was during the first half of the 1900s in the United States. Last year, there were nearly 10 million privately owned motor vehicles in China. This total includes cars, trucks, and buses. By comparison, automobile registrations in the U.S. totaled 134 million in 2000 (Figures 9 and 10). Total motor vehicle output in China jumped to a record high of 3.3 million units last year compared to about 12 million units of motor vehicle assemblies in the United States (Figures 11 and 12). Chinese car output rose to a record 1.1 million last year. There is only one way this output is likely to go over the next several years, i.e., straight up.

6) The trends toward greater urbanization and car ownership suggest that China's demand for industrial commodities is likely to increase dramatically over the next few years. Indeed, the recent surges in industrial commodity prices, particularly copper and steel prices, seem to be attributable to Chinese buying (Figure 13). Chinese usage of petroleum products, especially gasoline, is bound to soar along with car sales over the next several years. Currently, coal accounts for 65% of China's energy supply. It is highly polluting and can't be used to meet the needs of the motor vehicle industry. China currently uses crude oil at a rate of 5.1 million barrels per day. The United States, with one fourth the population of China, uses four times as much crude oil (Figure 14).

II. Growth Imperative

After Chairman Mao Zedong died in 1976, China's Communist leadership decided it was time to modernize their economy. Many reforms have been implemented since then (Figure A). This process ultimately led the Chinese to join the World Trade Organization (WTO) on December 11, 2001. The WTO is the 136-nation group that sets the standards for international commerce. The Chinese regard joining the WTO as their most important economic reform in 20 years. To join, they were required to accept numerous agreements to open their domestic markets to more competition from abroad. Why would the Communist regime in Beijing agree to the capitalistic codes of conduct required to be a member of the WTO? They realized that modernization would increase productivity in farming and cause a huge migration from the agrarian sector to the cities. To avoid massive social upheaval, they needed, and continue to need to create lots of jobs in manufacturing, construction, and services. Joining the WTO was seen as an essential way to create more manufacturing jobs among exporters.[2]

Currently, the numbers of Chinese employed in manufacturing and construction are 83 million and 39 million, respectively. By comparison, there are 14.5 million manufacturing and 6.8 million construction workers in the United States today. Official statistics show that some 10 million job hunters will enter the Chinese labor market this year. There are already 6 million laid-off workers and 8 million registered unemployed people nationwide.

The Chinese government is becoming increasingly obsessed with what I call the "Growth Imperative." The government fully realizes that failure to expand employment could have serious consequences for the country's social and political stability. To ease the tension, the government set an annual goal of creating 8 million jobs.[3] To do so, policies must be very stimulative to keep real GDP growing by at least 9% annually, if not more. This is because Chinese economists in the Labor Science Research Institute of the Ministry of Labor and Social Security estimate that every 1% increase in real GDP generates 700,000 to 800,000 jobs. During the 1980s, such an increase might have produced over 2 million jobs.[4]

State-owned enterprises (SOE) are no longer employers of last resort. Instead, they are cutting payrolls, boosting productivity, and attempting to be profitable. They are succeeding. Profits of Chinese SOEs surged 70% during the first seven months of this year. The bad news is that 26 million workers were laid off from these enterprises from 1998 to 2002, many of whom are still jobless.

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[2] In addition to large reductions in tariffs, China's largest and most important reforms involve reductions in nontariff barriers. China's accession to the WTO includes phase-out of import licensing and import quotas. There will be reductions in monopolization of import rights, either by the state itself or by importers designated by the state. Offsets—under which foreign firms are allowed to set up operations in China only if they agree to use a minimum quantity of Chinese inputs, or transfer some minimum quantity of technology to China, or export some minimum quantity from China—will be phased out. Many other nontariff barriers will also fade away. There is a full schedule of service sector commitments that open China to import/export trading companies, retailing and wholesaling, insurance, accountancy, legal and other professional services, and of course banking.

[3] "China Striving to Ease High Employment Pressure," *People's Daily*, August 14, 2003.

[4] "China Faces Uphill Battle to Create Jobs amid Fast Economic Growth," *People's Daily*, August 26, 2003.

Figure A: Briefing On Chinese Reforms*

The most important contributors to China's takeoff are the market-oriented liberalizations that began in 1979. At that time, collective farming was phased out. And even though the state still owned all the land, each farmer got to control his own plot. This new policy was intended to motivate each farmer to grow more, and it did. The government also permitted farmers to sell their products on the open market at a market price. The government did not open all farm production to the market. The government did take a set amount every year from each farmer and did pay a nonmarket price. But farmers could sell everything beyond that. These two steps—individual control of designated plots of land, selling in an open market—yielded large increases in farm output.

In 1984, similar market price reforms were applied to the state-owned industrial sector. So-called dual pricing systems—in which a certain quantity of output was allotted to the government at a government-determined price and the rest sold on the open market at market-determined prices—began to be permitted in the industrial sector. Meanwhile, labor moved out of agricultural work and into industrial work, which was more productive. Nowadays, 95% of industrial products are sold at market prices.

In the early 1990s, China launched a new wave of foreign investment and foreign trade liberalization. China liberalized foreign direct investment to attract firms that would export. In fact, China remained relatively closed to foreign investments designed to serve Chinese customers.

Turning to the issue of trade, in 1993 the government announced major import tariff reductions on 2,800 categories of products. Between 1992 and 1997, Chinese average tariffs fell by about two-thirds. However, half of all imports were also subject to nontariff barriers. Many industries were still heavily protected, and many imports were tightly controlled, regardless of tariff levels. China was afraid to permit foreign competition with its large state-owned enterprises, many of which were inefficient then and many of which even now are losing money.

Over time privately owned entities have begun to account for an increasing portion of Chinese production. The share of total Chinese industrial output produced by state-owned enterprises fell from 78% in 1978 to 28% in 1998. Meanwhile, the portion of industrial output that came from individually owned companies rose from zero percent in the late 1970s and early 1980s to 17% in 1998. The share of total industrial output from other types of private enterprises rose from zero percent in the late 1970s to 23% the year before last [1998].

*Adapted by Dr. Edward Yardeni from "China Takes Another Step Toward Internationalization," Federal Reserve Bank of Dallas, July 2000, http://www.dallasfed.org/research/indepth/2000/id0006.html.
Source: Federal Reserve Bank of Dallas; Prudential Equity Group, Inc.

The good news is that real GDP rose 8.5% in the first nine months of this year. Over this same period, 8.12 million people found jobs. This year China has adopted a completely new GDP calculation method, which should significantly improve the accuracy of the numbers. National accounts experts have long believed that China's real GDP has been overestimated because local government officials exaggerate industrial and agricultural output. Nevertheless, the new figures may not change much, as the severe underestimation of output in the services sector would be corrected.[5]

Disposable income in towns and cities rose 9% in the first nine months of this year. Even as incomes climb, Chinese wages are among the lowest in the world. The hourly pay for a Chinese manufacturing worker is 61 cents rather than the $16.14 paid in the U.S., according to a study by economists at the Federal Reserve Bank of Dallas.[6]

III. Speeding Up

As incomes continue to expand in China, the demand for cars will soar. Under its WTO obligations, China must remove quota and permit barriers on vehicle imports by 2005 and cut tariffs to 25% by the middle of 2006. The domestic industry is racing to become more competitive and is teaming up with foreign auto companies. The top three manufacturers—First Automotive Works Corp., Dongfeng Motor Corp., and Shanghai Automotive Industry Corp. (SAIC)—each have two or more foreign partners and should control half of total vehicle output capacity in China in coming years. Auto giant SAIC has joint ventures with Volkswagen and General Motors.

General Motors entered China about a decade ago, when it beat Ford Motor in a competition to forge an alliance with a Chinese auto maker. Ford is now rushing to enter the Chinese market. GM earned $162 million in its Asian auto operations during the third quarter of this year, or about $1,200 per vehicle sold, compared with net income of $128 million in North America, or $102 per vehicle sold.[7]

Foreign auto makers are very eager to participate in the booming Chinese market. DaimlerChrysler's chief executive, Jurgen Schrempp, predicts that China will be the world's second-largest car market, after the United States, by 2013. In trucks, China already accounts for a quarter of worldwide demand, and should be the world's largest truck consumer within a decade. In early September, DaimlerChrysler announced a huge expansion of its car and truck operations in China.[8]

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[5] "China Implements New GDP Calculation System," *People's Daily*, August 14, 2003.
[6] "China's 3rd-Qtr GDP Grows 9.1%, Faster Than Expected," Bloomberg, October 17, 2003.
[7] "Ford, GM Fight Over Brightest Auto Market," *The Wall Street Journal*, October 17, 2003.
[8] "Carmakers see future in China," *International Herald Tribune*, September 12, 2003.

In early October, China announced the final version of its auto finance regulations, fulfilling a key commitment made upon entering the WTO. Currently, less than 20% of auto sales are financed with loans, far less than the average 70% in the more developed foreign markets, according to the China Banking Regulatory Commission. By opening up this market to foreign and more domestic institutions, the government hopes to spur car sales. Both Ford and GM have already applied to set up car-financing branches in China.[9]

To speed things along, the Chinese government is adding about 3,000 kilometers (km), or 1,900 miles, of expressways a year to the existing network of 30,000 km.[10] By 2020, all major cities will be connected on a 55,000 km nationwide grid that will be second in length only to that of the United States. Transport officials expect the impact of the highway network to be huge. Urban belts will emerge, lifestyles will change, and growth rates will surge at interchange towns as these become instantly more accessible and attractive to investors.[11] China is like America during the 1800s and 1900s, but on speed!

IV. Materials Matter

In America's Gold Rush during the second half of the 1800s, very few miners got rich. The vendors who sold them the picks and shovels did prosper. The Chinese Auto Rush may also be a bust for many of the auto companies rushing to expand capacity. Supply could outpace demand, forcing the auto companies to cut prices and profitability. They might also extend more financing to riskier borrowers. The only sure winners of the auto boom in China are likely to be the companies providing the raw materials needed to make motor vehicles. Raw materials companies will also benefit from demand related to urbanization in China, in my opinion.

Speaking of gold, the May 8, 2003, issue of *The Economist* included an interesting article titled "Bullion for a billion." It suggests that Chinese demand, recently unleashed by government deregulation, may have contributed to the jump in gold prices since the summer:

> For decades the country severely restricted the buying and selling of gold, which put a heavy damper on demand. Now, however, China is liberalizing. When India did likewise in 1996, it promptly overtook America as the world's largest consumer. China, now in third place, might also begin to climb the league.
>
> Until last year, its central bank fixed the domestic price of gold. It bought all the gold produced by China's 1,000 or so mines and allocated it to jewelers. This ended in October when a gold exchange opened in Shanghai where producers and wholesalers trade directly with one another. In March, the central bank went further and gave up its power to license producers and retailers. Now anybody can enter the gold business in China.

[9] "Automobile finance regulations mapped out," *CHINAdaily*, October 6, 2003.
[10] "Cars in China: The great leap forward," *The Economist*, January 30, 2003.
[11] "Working on the highway," *The Economist*, April 18, 2002.

> A far bigger change is planned for June, when individuals will be allowed to invest in gold, either by buying ingots or by opening gold accounts at their banks. China has one of the highest savings rates in the world, officially about 40%. But its mutual-fund industry and stock markets are fledglings, so the Chinese keep most of their money in humdrum bank deposits, which pay a miserly 2% in interest before tax. If India's experience is a guide, many will now shift their money into gold.
>
> This will drive up prices inside China. Since Chinese demand (200 tonnes) already outstrips domestic production (190 tonnes), it will also lead to more imports.

To fuel China's Growth Imperative, the country will need more and more crude oil. China's own reserves, especially at its huge Daqing oil field, are slowly depleting. Since 1993, when China became a net importer, its reliance on foreign oil has increased steadily. The International Energy Agency estimates that net imports could triple during this decade to more than 4 million barrels a day. Moreover, over half of China's imports currently come from the Middle East and seem, to Beijing, worrisomely exposed to the whims of China's biggest potential strategic rival, America. [12]

The Chinese are rushing to diversify to other sources of supply. They are negotiating a deal with Russia to build an oil pipeline from eastern Siberia to the Chinese oil city of Daqing. The Chinese thought they had a deal, but the Russians are dragging their feet while considering a rival plan proposed by Japan. Meanwhile, domestic exploration succeeded recently in finding a huge gas reserve in southwest China, with a total expected storage of more than 100 cubic meters.

The Chinese are also rushing to buy the steel and copper they need to construct the urban infrastructure for all those immigrants from the rural sector. Steel imports are skyrocketing, even though China's domestic steel output has exceeded 200 million metric tons—bigger than that of the U.S. and Japan combined. Surging auto production and the construction boom have driven up steel demand exponentially. China's steel demand is expected to rise this year to 257 million metric tons, up 22% from 2002, according to the International Iron and Steel Institute in Brussels.[13]

Rubber is another auto-related commodity. China now produces more than 50 million commercial vehicle tires—about 19% of world output—and that would likely increase to about 98 million tires by 2020, the International Rubber Study Group reported in July.[14]

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[12] "Drilling for the Party," *The Economist*, May 22, 2003.
[13] "Steel Prices Rise on Strong Demand," *The Wall Street Journal*, October 15, 2003.
[14] "China rubber demand to rise on rocketing sales," *Automotive News*, September 9, 2003.

The rising standard of living, urbanization, and a shortage of good land for farming suggest that China is likely to become a big importer of food. Grain consumption outpaced production in 2000, 2001, and 2002. The nation has been harvesting less grain since 1999. Over the next 20 years, China's net population is expected to increase by 10 million on average every year, while the proportion of urban land is expected to expand by up to one percentage point a year, according to the policy paper, "The State of the Outlook for China's Food Security," which China issued at last year's World Food Summit in Rome.[15]

According to the U.S. Department of Agriculture:

> China's accession to the WTO bodes well for its long-term development prospects. As Chinese incomes grow and the population becomes more urbanized, diets will diversify and consumers will demand more meat, fish, fruits, vegetables, processed foods, and restaurant meals. Demand for feed grains will rise to support a growing livestock sector. This process will generate larger import demand in China and increased global opportunities for bulk feed grain exports to China. In addition, increased import demand for some high-value and processed agricultural products will generate opportunities for exporters.[16]

V. Trading Places

During the 1800s, Britain emerged as the world's economic and military superpower. During that century, the United States was just a great emerging economy. Americans attracted huge capital inflows from Britain and imported many British technologies to build the transcontinental railroad system. Cheap transportation and a huge influx of cheap immigrant workers led to the urbanization and industrialization of the United States. Both also contributed to the exploitation of the country's huge agricultural and mineral resources. By the beginning of the 1900s, Americans had succeeded in commoditizing and deflating the prices of food (e.g., grains) and energy (e.g., kerosene). Cheap labor, food, and energy were essential ingredients to the emergence of the United States as the great superpower of the 1900s.

The current century probably belongs to the Chinese. They are likely to emerge as the great economic and military superpower of the 21st century. During the 1800s, the "Manifest Destiny" of Americans was to acquire and exploit the resources of the entire country from sea to shining sea. For the Chinese, their demography is their destiny. This suggests that America is likely to experience relative decline during the century. That's what happened to Britain during the 1900s. But the British exacerbated their reversal of fortune by adopting anti-competitive policies including socialism, unionism, and protectionism.

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[15] "Experts See No Strain on China's Grain," *People's Daily*, August 18, 2003.
[16] The U.S. Department of Agriculture's *Agriculture Outlook*, April 2002.

Prosperity isn't a zero sum. Americans and others around the world can prosper along with the Chinese. Interestingly, China's prosperity is based on deflating consumer goods prices, rather than falling commodity prices, which are actually soaring. The key is that we all respond to China's successes by promoting freer trade rather than greater protectionism.

In the United States, the widening merchandise trade deficit is arousing protectionist sentiments (Figures 15 and 16, and Figures B and C in the appendix). That's unfortunate, and hopefully won't prevail politically. Interestingly, while non-petroleum imports account for more than one quarter of goods sold in the United States today, China's import penetration is only 3.4% (Figure 17). U.S. merchandise exports to China are only 3.6% of total U.S. exports, but they were only 2.0% during 2000 (Figure 18).

The Chinese are making an effort to be good global citizens, and to head off protectionist measures aimed at them. They are sending trade missions to purchase more American goods including telecommunications and chemicals equipment and potentially billions of dollars in aviation equipment, with Boeing Co. to receive multiyear orders for as many as 30 airplanes. General Electric is selling gas turbines and jet engines to the Chinese.[17] Figure D lists the S&P 500 companies with sales exposure in Asia greater than 15%.

John Leahy, chief commercial officer of Airbus, expects that China will need 1,600 airplanes in the next 20 years. Boeing estimates 2,300 jets will be needed over this period.[18] Chinese officials are projecting purchasing more than 1,900 jets over the next two decades. They expect that by 2020 China will rank number three in the world in terms of aviation passenger and cargo turnover. It currently ranks sixth.[19] The need for new airplanes is required to support a 7.1% annual increase in air travel in China from 2003 to 2022, compared to a world average of 5.1%.[20]

VI. The Currency Issue

The Bush administration has been pressuring the Chinese to stop pegging their currency to the U.S. dollar. The White House has been pressured by U.S. manufacturers to do so in an effort to reduce the competitive position of Chinese products at home. They should be aware of the Chinese curse: "Beware of what you wish for—you might get it."

[17] "China Set to Go On Buying Spree For U.S. Goods," *The Wall Street Journal*, October 30, 2003.
[18] "Airbus: 'China market will soar,' *CHINAdaily.com.cn*, September 30, 2003.
[19] "Future aircraft needs 'colossal': Chinese official," *People's Daily*, September 17, 2003.
[20] "Boeing projects US$197b market for new airplanes in China," September 17, 2003.

The current arrangement isn't such a bad deal for Americans. We get large tax cuts that have bloated the federal deficit, which has been financed by dollar-propping central bankers, including the People's Bank of China. According to data compiled by the U.S. Treasury, the Chinese have purchased $72 billion in U.S. Treasury and Government Agency securities over the past 12 months through August (Figure 19). The Chinese central bank hasn't "sterilized" these inflows, so the domestic money supply is growing rapidly, up 21% over the past year (Figure 20). This rapid growth has been necessary to achieve the Growth Imperative.

One of these days, the Chinese might decide to allow their currency to appreciate. They'll do it when they conclude that the benefits exceed the costs. The most immediate benefit of a stronger yuan is that the local currency prices of imported industrial commodities and other goods (priced in dollars) will immediately drop. The cost might be a less competitive position in the U.S. and other key overseas markets. When the Chinese do let their currency appreciate, they will have concluded that their domestic economy offers more growth opportunities than do overseas markets. That may very well mark the emergence of China as a self-confident superpower.

VII. Bottom Line

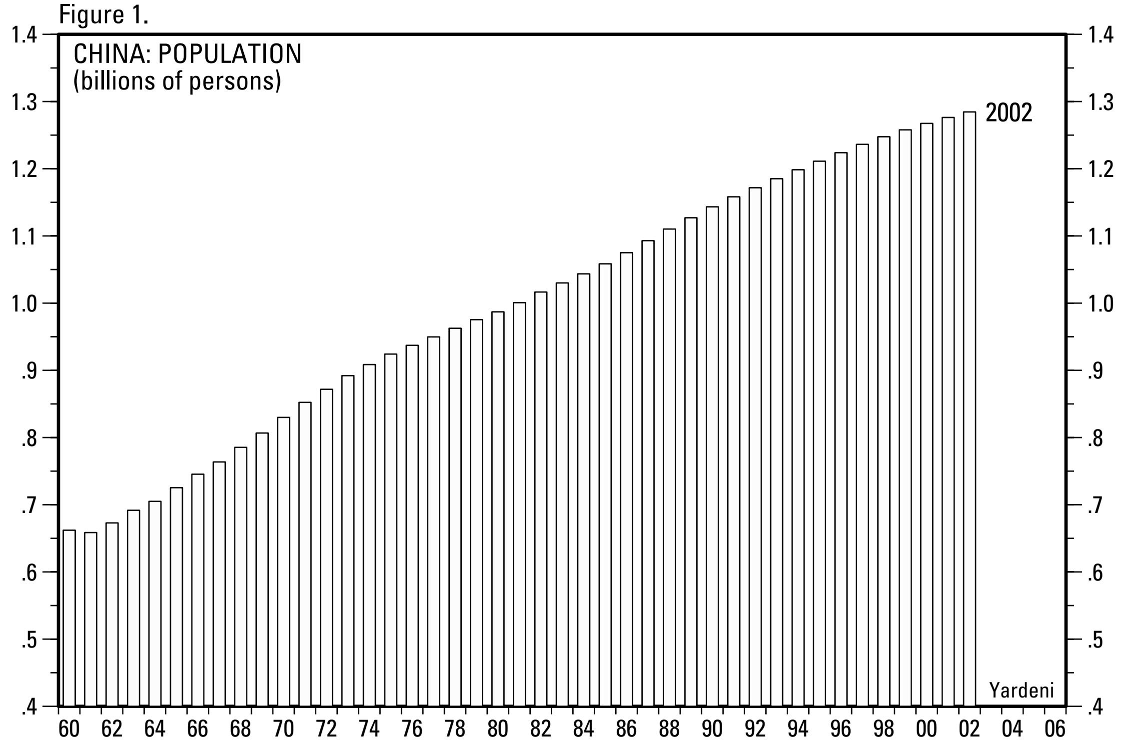
Investing in China is difficult and has proven unrewarding in the past. However, there are ways of investing in China's Growth Imperative. Foreign car companies, including U.S. and Japanese producers, might be profitable in China. So might auto part suppliers. Industrial commodity companies should benefit from rising demand and prices. Gold may be another winner among the commodity markets. Many U.S. capital goods manufacturers—i.e., aircraft, power-generating systems, construction and farm equipment—are likely to see their export orders from China rise. Hotels, theme parks, and casinos in the United States should also do well as Chinese tourists seek exotic vacations in Las Vegas and Orlando.

* * *

China: Population

China's population rose to 1.29 billion during 2002. That is four times the population of the United States. Imagine if the Chinese rise to the same standard of living as Americans during the current century.

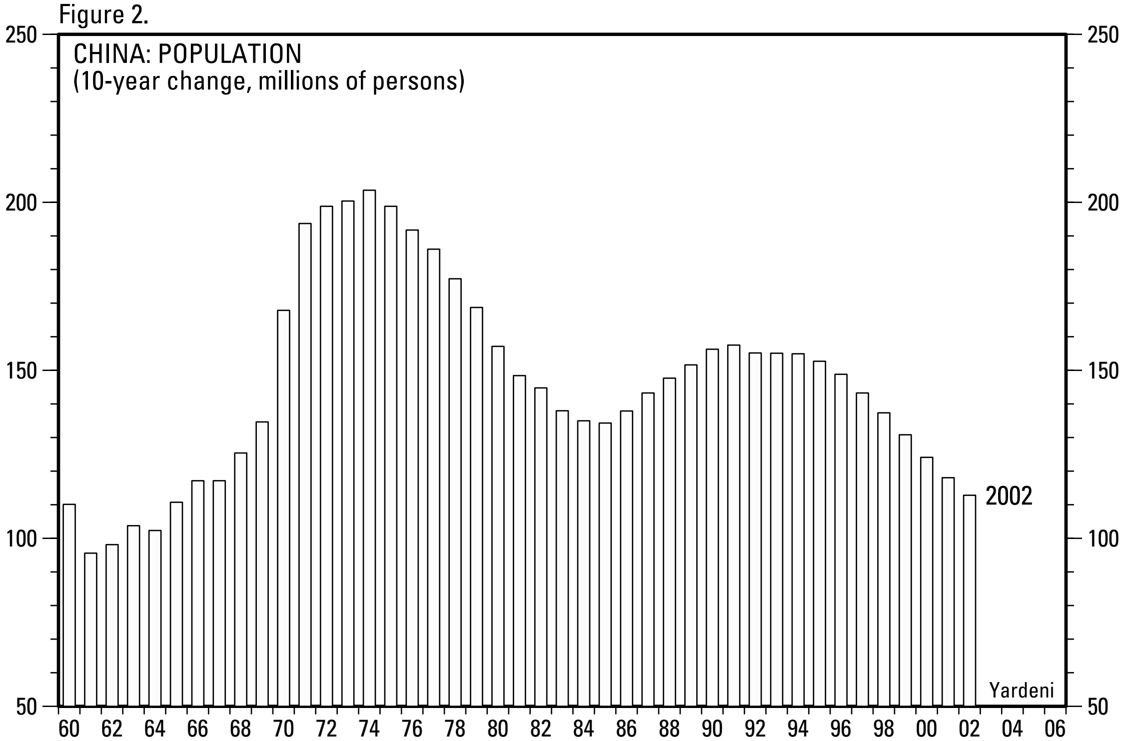
Figure 1.



Source: State Statistical Bureau of the People's Republic of China.

China's population rose by 113 million over the past 10 years. It rose by 141 million since 1990. Japan's total population is 128 million!

Figure 2.

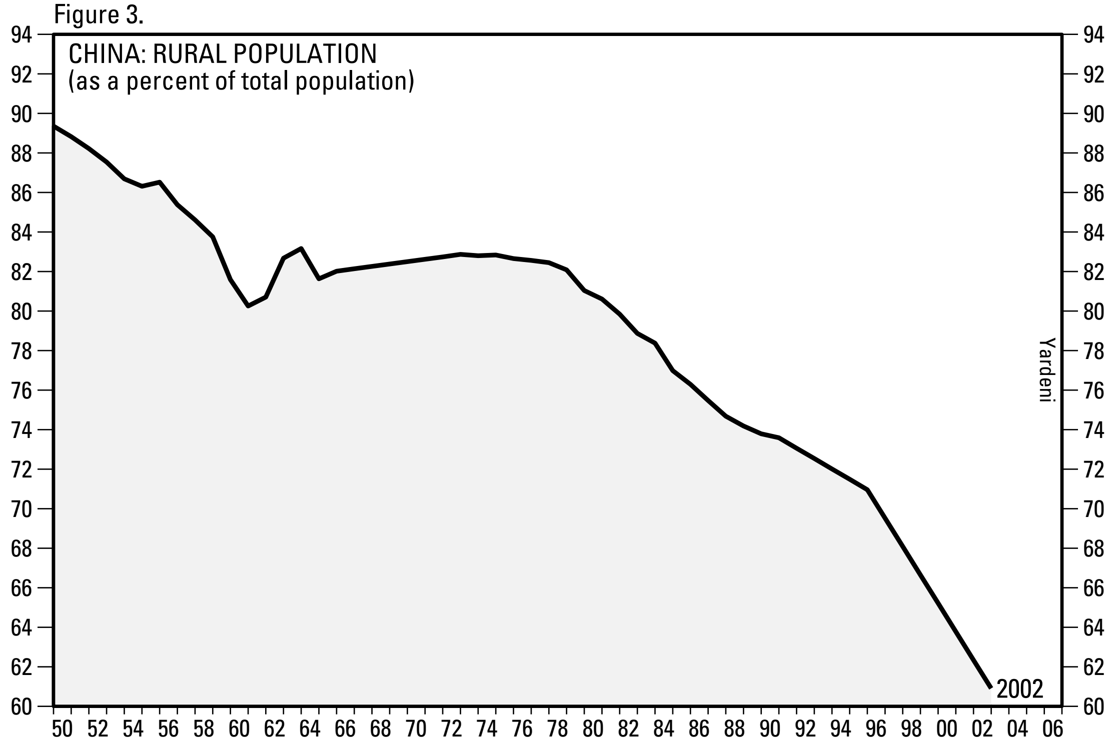


Source: State Statistical Bureau of the People's Republic of China.

China: Population

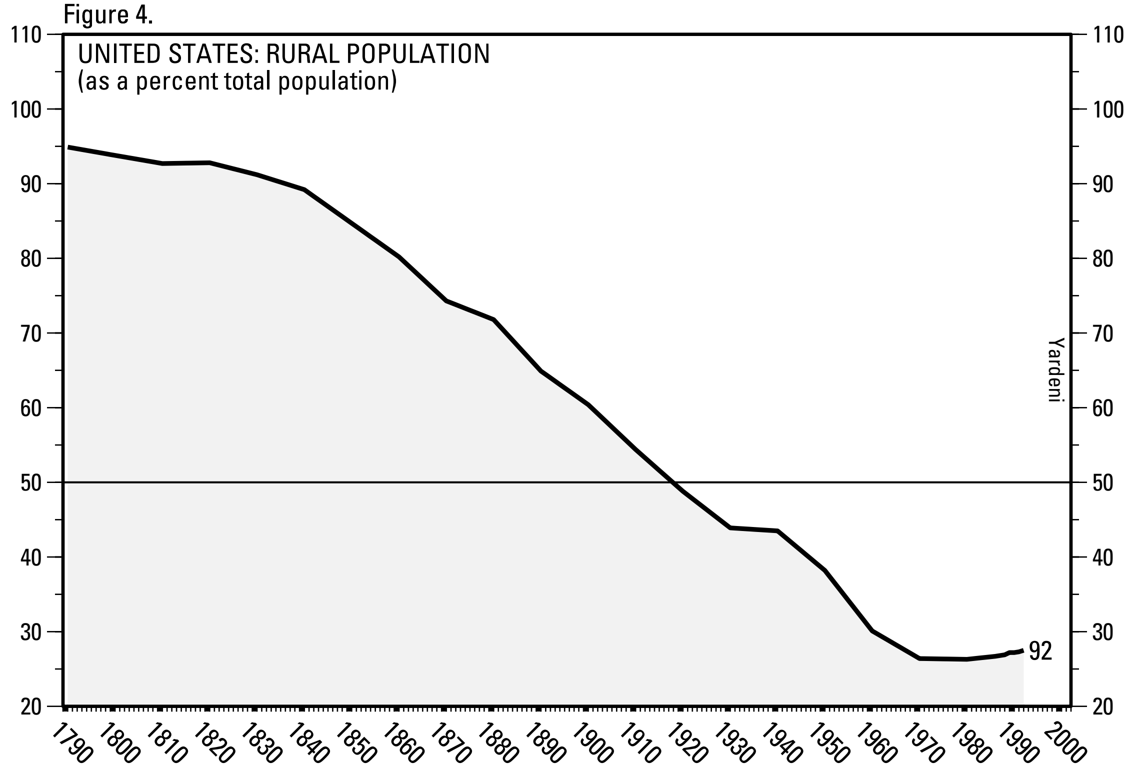
China is evolving into an urbanized society, much as the U.S. did during the 1800s and 1900s. China is doing it faster, though. Think of China as like the U.S. during the 1800s and 1900s on speed!

Figure 3.



Source: State Statistical Bureau, People's Republic of China.

Figure 4.

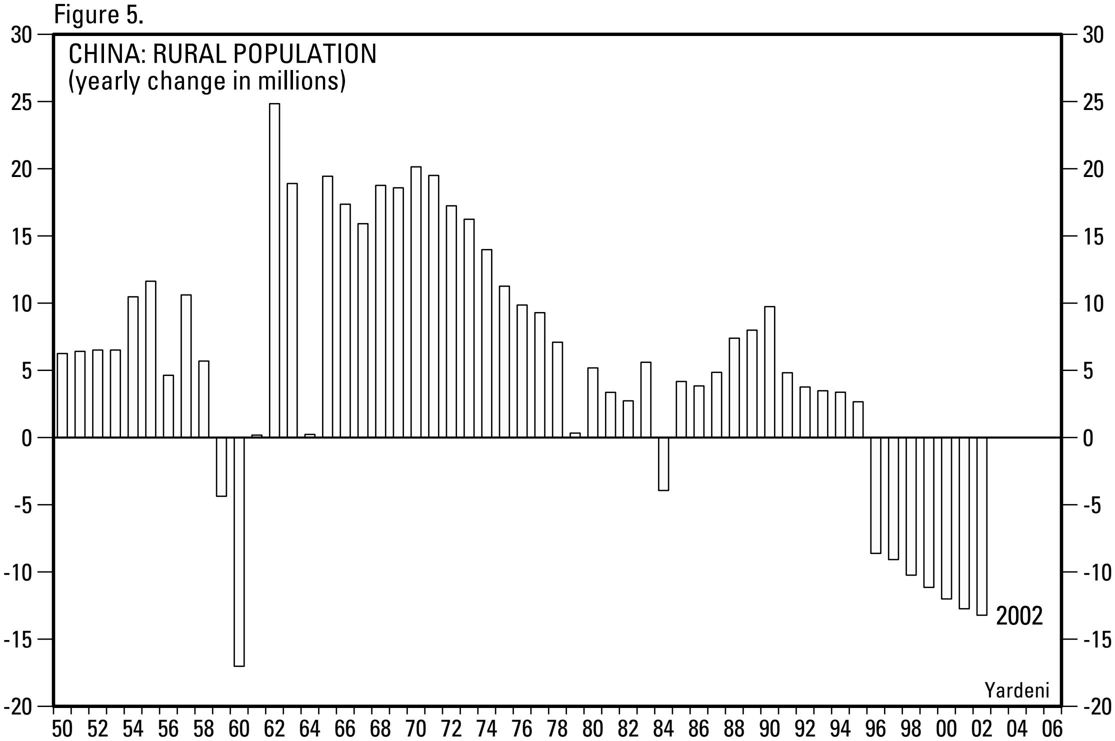


Source: Bureau of Labor Statistics.

China: Population

China's rural population is falling at a rate of 10-15 million per year now.

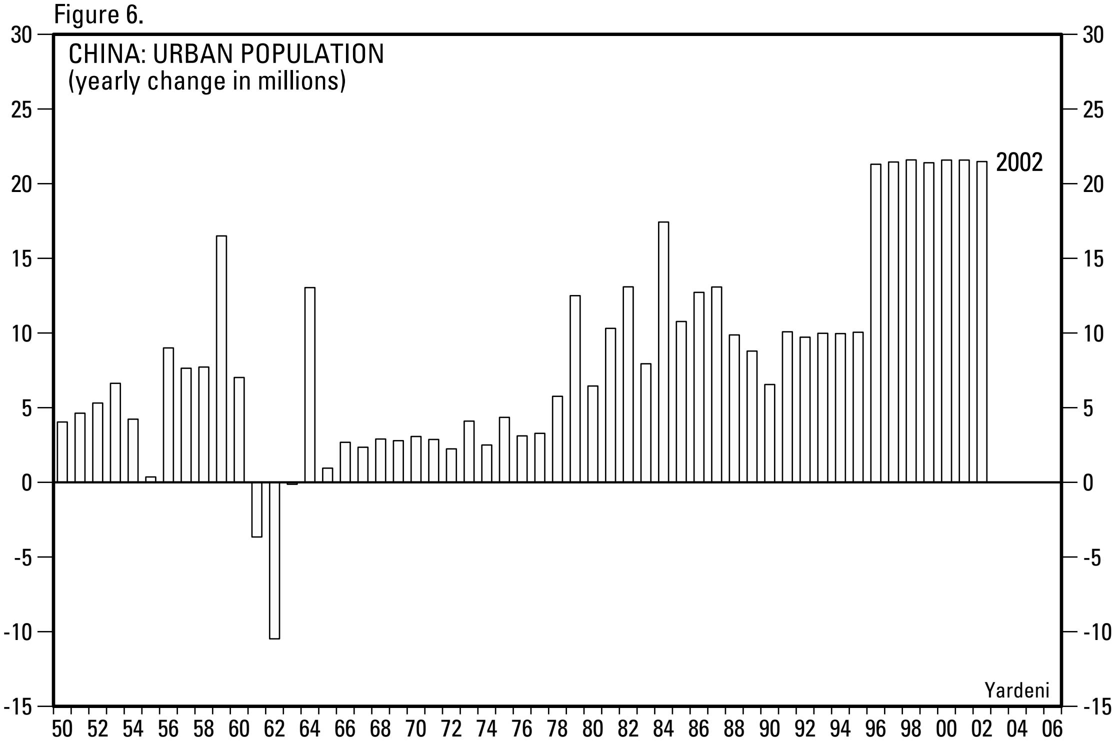
Figure 5.



Source: State Statistical Bureau, People's Republic of China.

China's urban population has been growing by more than 20 million per year since 1996.

Figure 6.

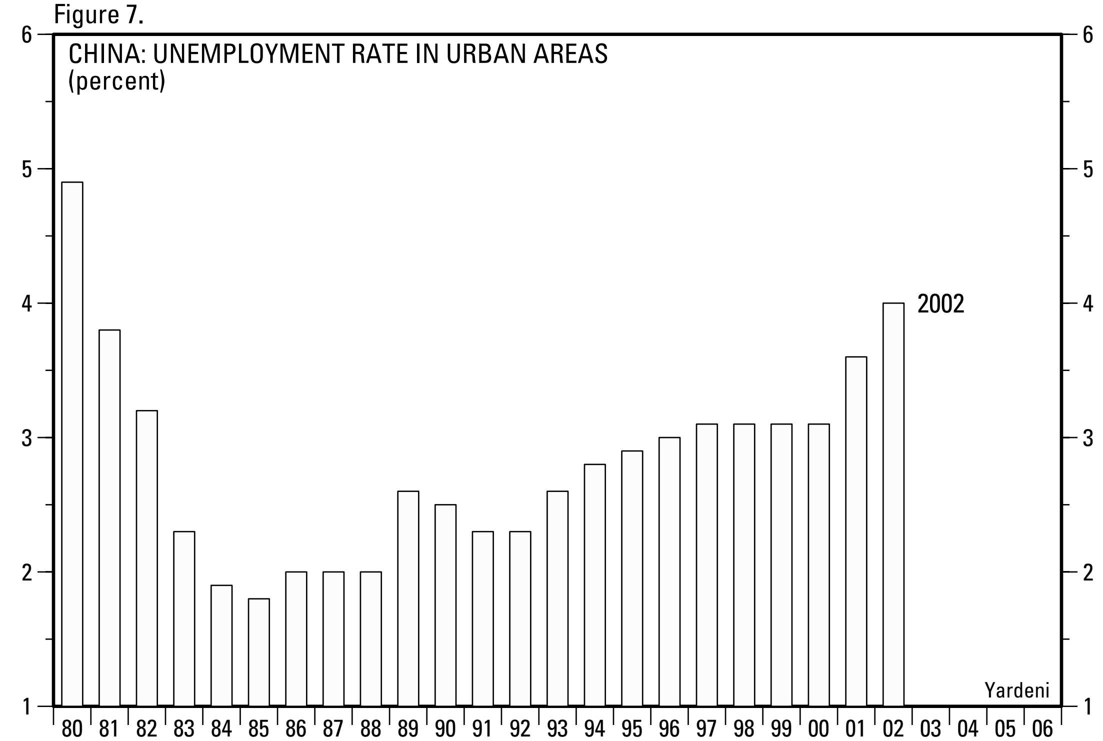


Source: State Statistical Bureau of the People's Republic of China.

China: Labor

China's economy must grow at a rapid pace to create enough jobs.

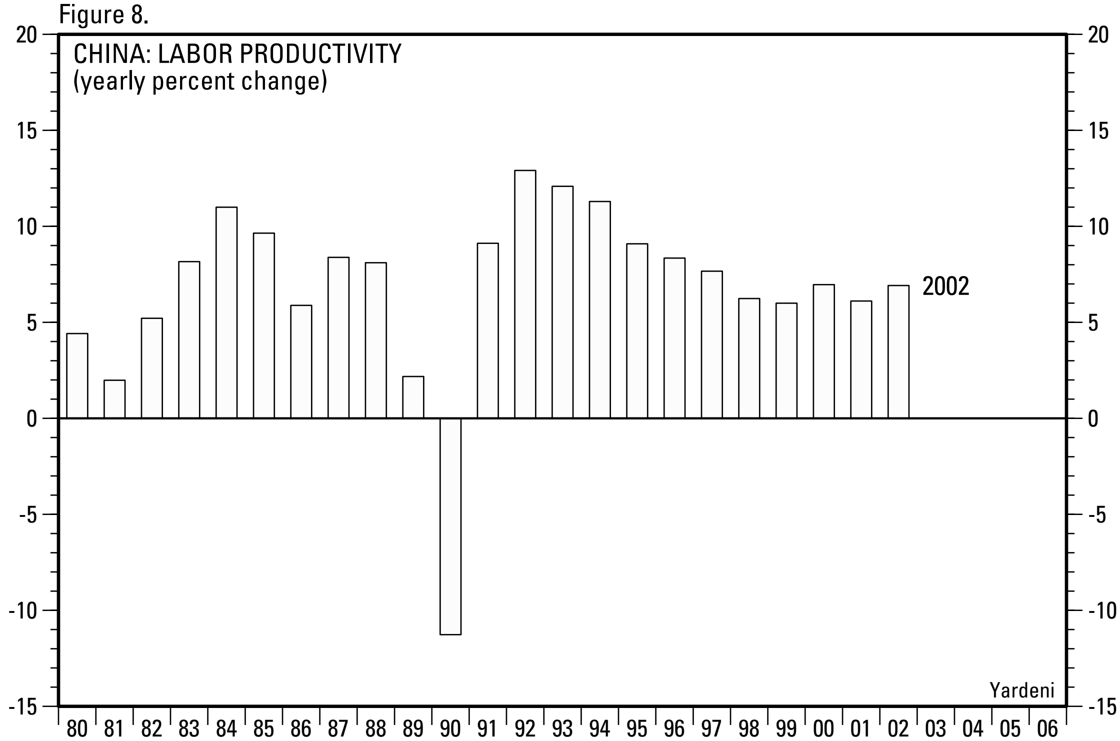
Figure 7.



Source: State Statistical Bureau, People's Republic of China.

Jobs growth in China is challenged by big gains in productivity.

Figure 8.

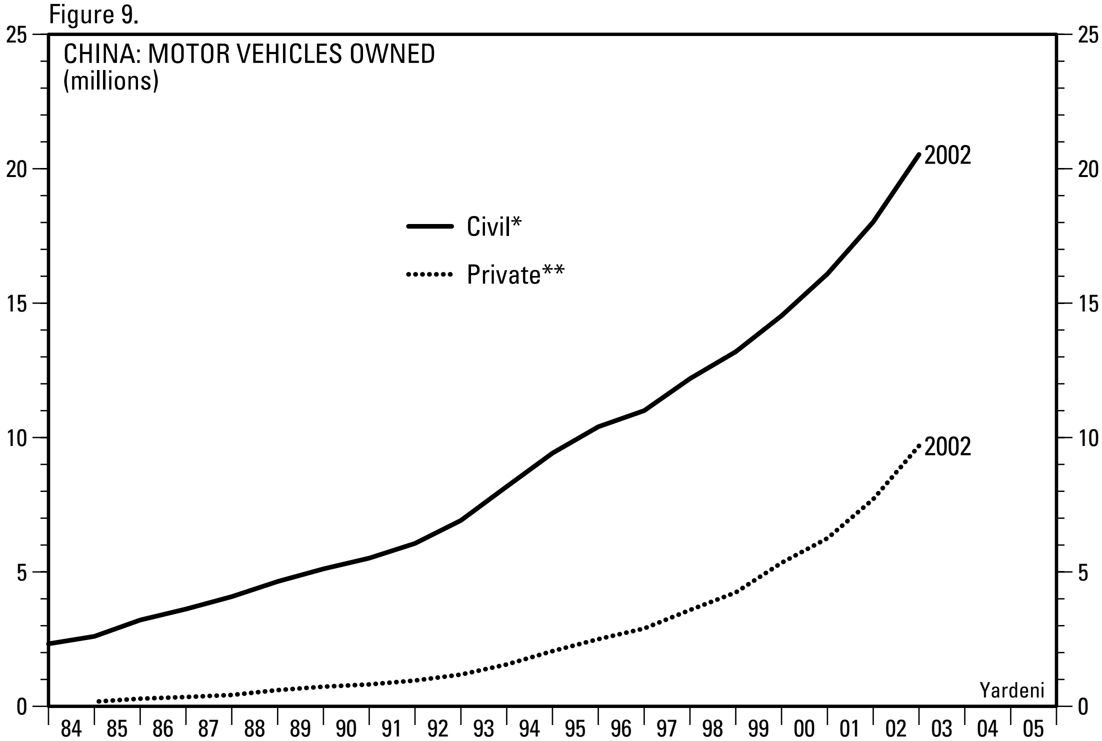


Source: China National Bureau of Statistics/Haver Analytics.

China: Autos

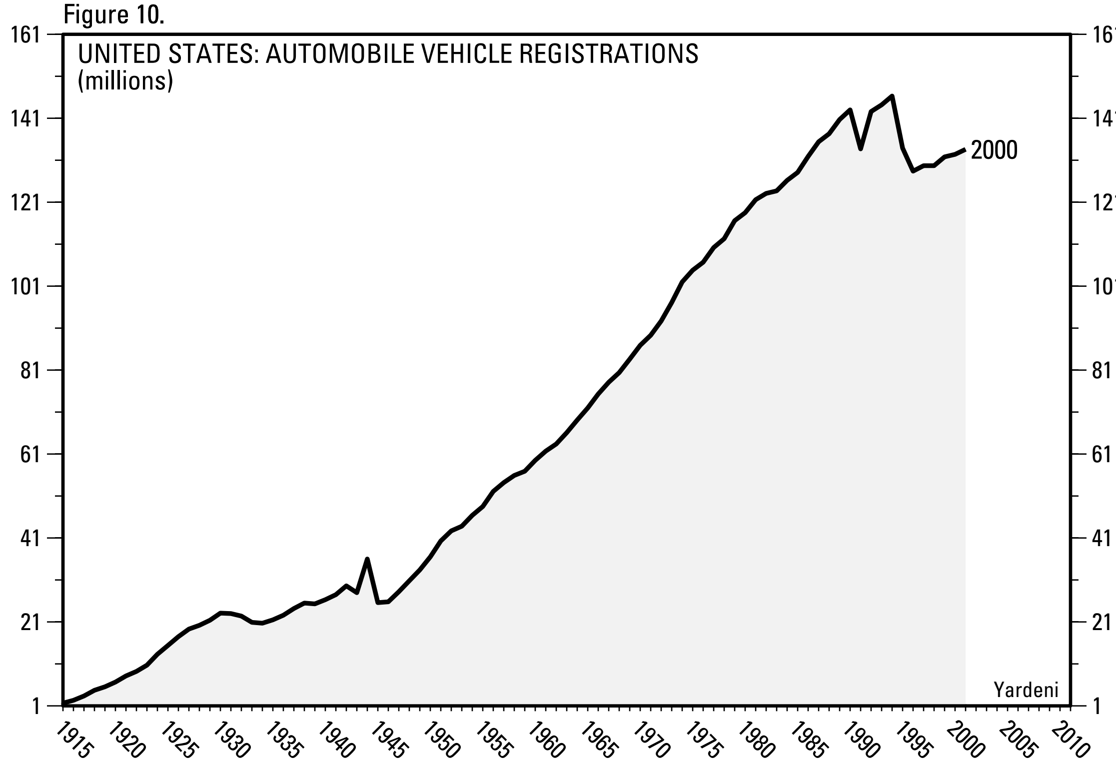
If the Chinese had the same car ownership rate as Americans, the number of cars on Planet Earth would double!

Figure 9.



* Includes cars, trucks, buses, other special vehicles, special motor vehicles, and tractors.
** Includes cars, trucks, and buses.
Source: China State Statistical Bureau/Haver Analytics.

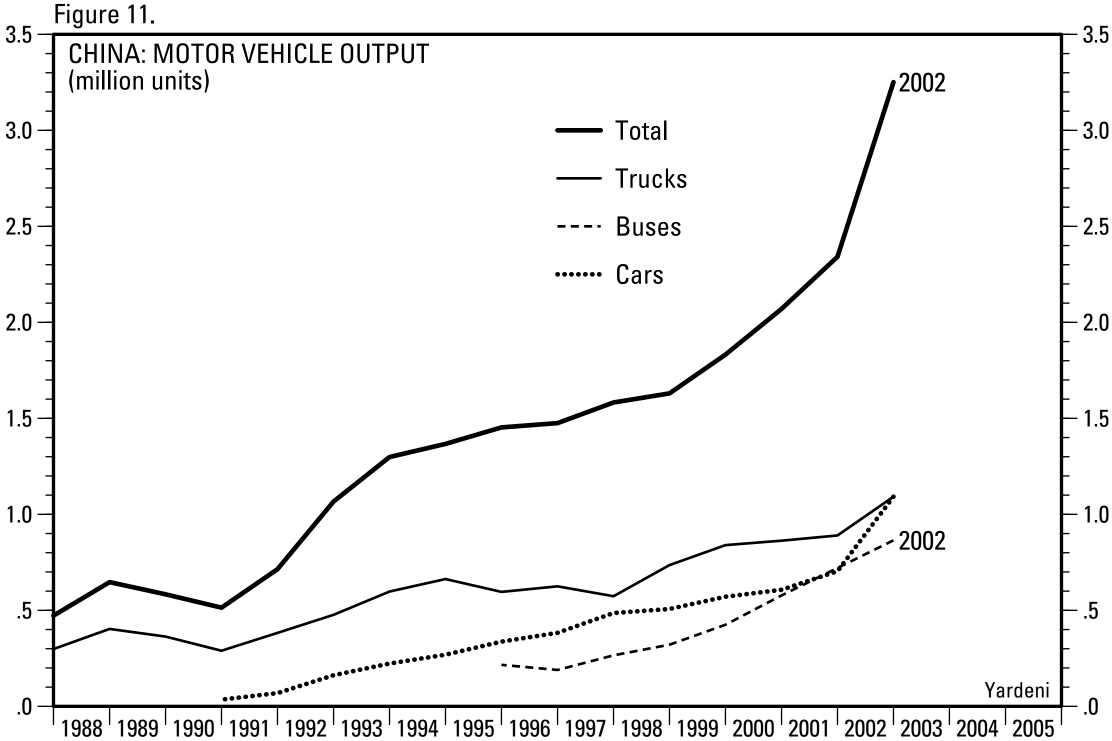
Figure 10.



Source: Statistical Abstract of the United States.

China: Autos

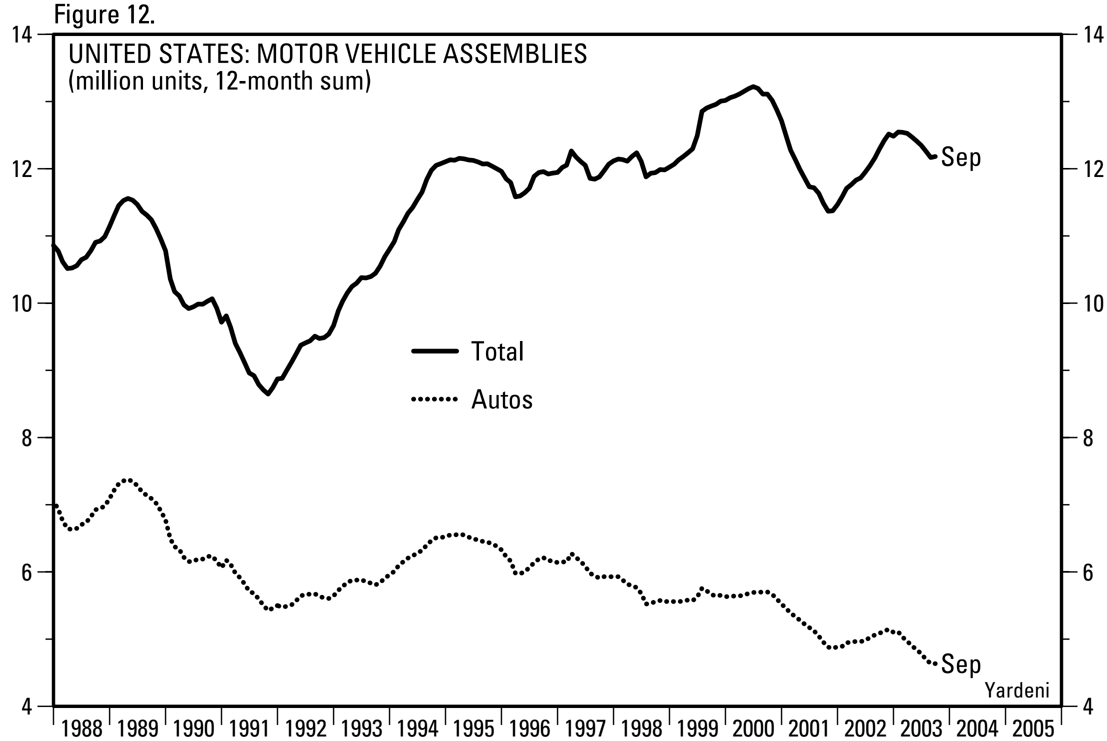
Figure 11.



Source: China State Statistical Bureau/Haver Analytics.

There is lots of upside for the auto industry in China, which produced a record 1.1 million passenger cars last year. Total Chinese motor vehicle output was 3.3 million units. U.S. total motor vehicle output is about 12 million units.

Figure 12.

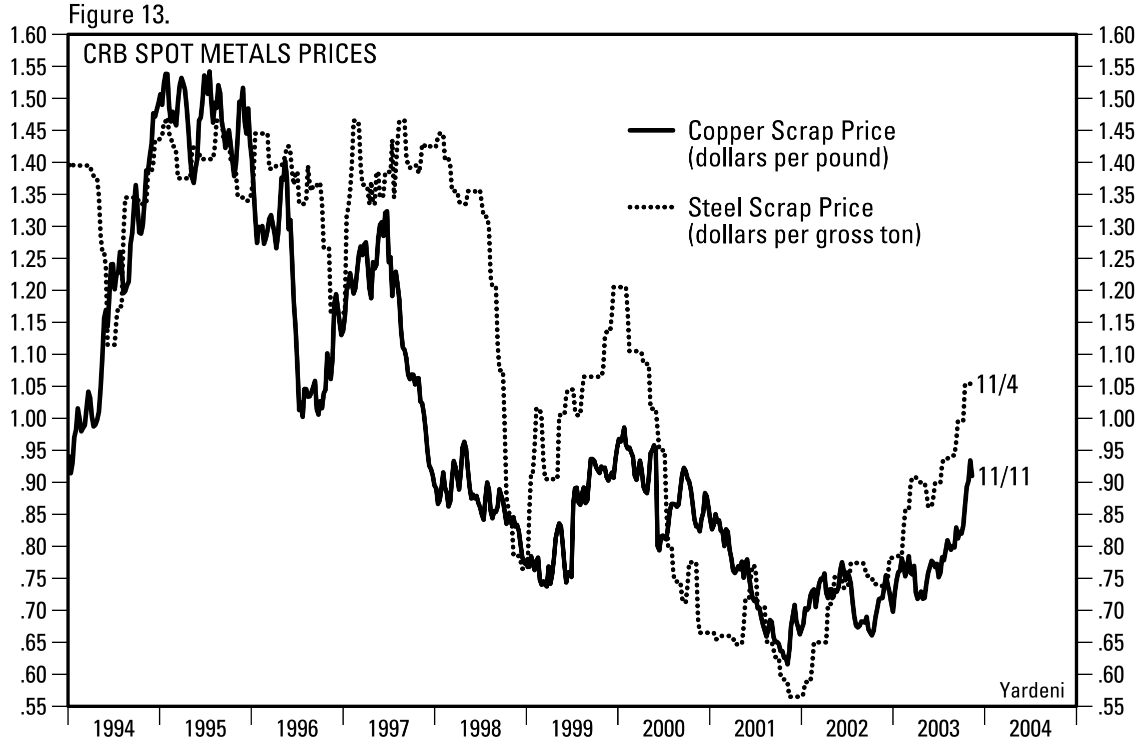


Source: Board of Governors of the Federal Reserve System.

China & Commodities

China is boosting global demand for raw materials and that's raising the prices of many commodities including copper, steel, and cotton.

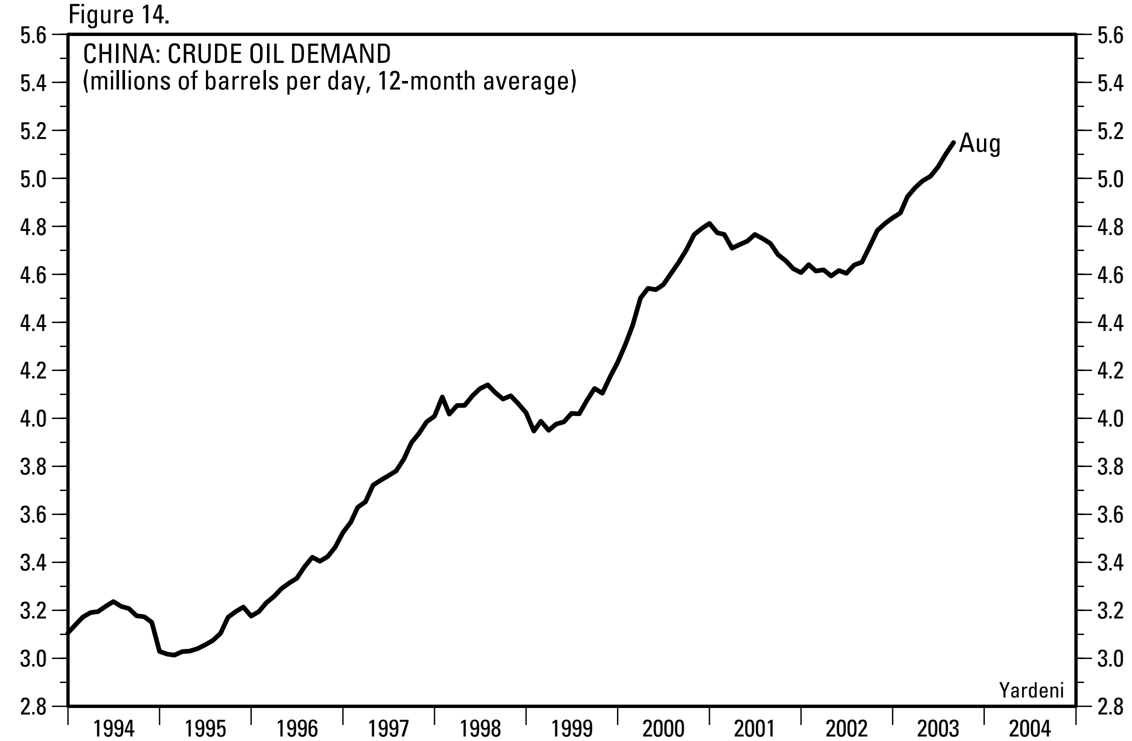
Figure 13.



Source: Commodity Research Bureau and Investor's Business Daily.

There are 1.3 billion people in China and they currently are using crude oil at a rate of 5.1 million barrels per day. There are 288 million Americans, using crude oil at a rate of 19.8 million barrels per day.

Figure 14.

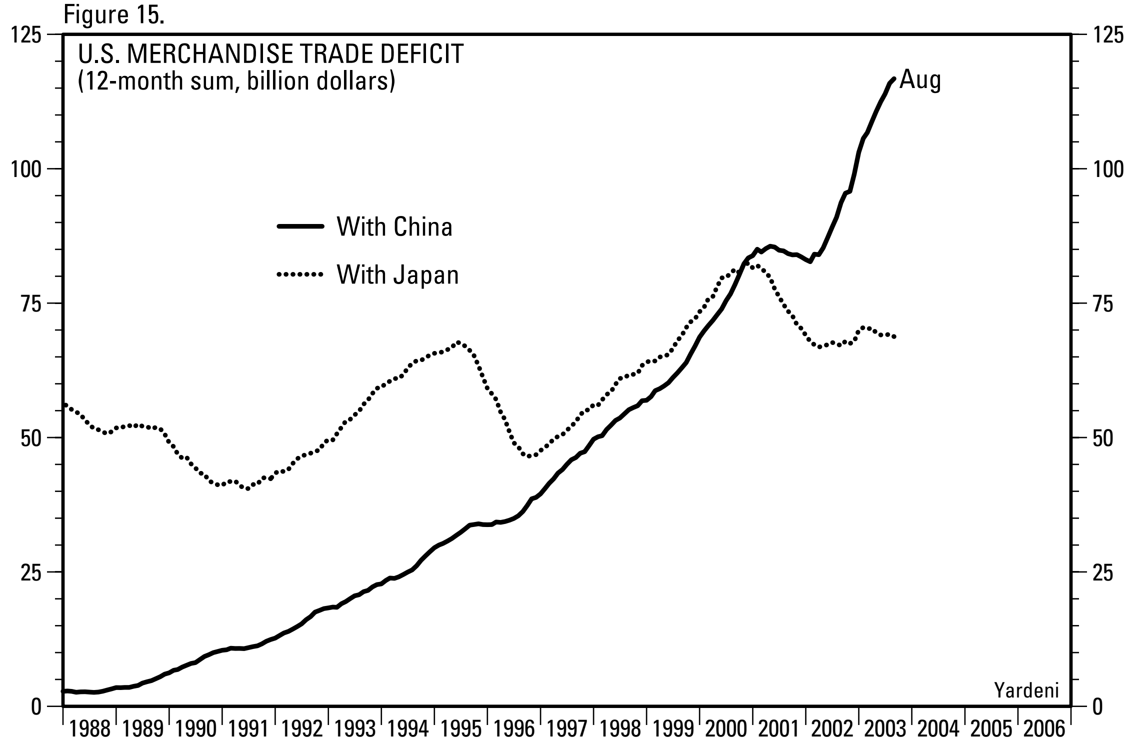


Source: Oil Market Intelligence.

China: Trade

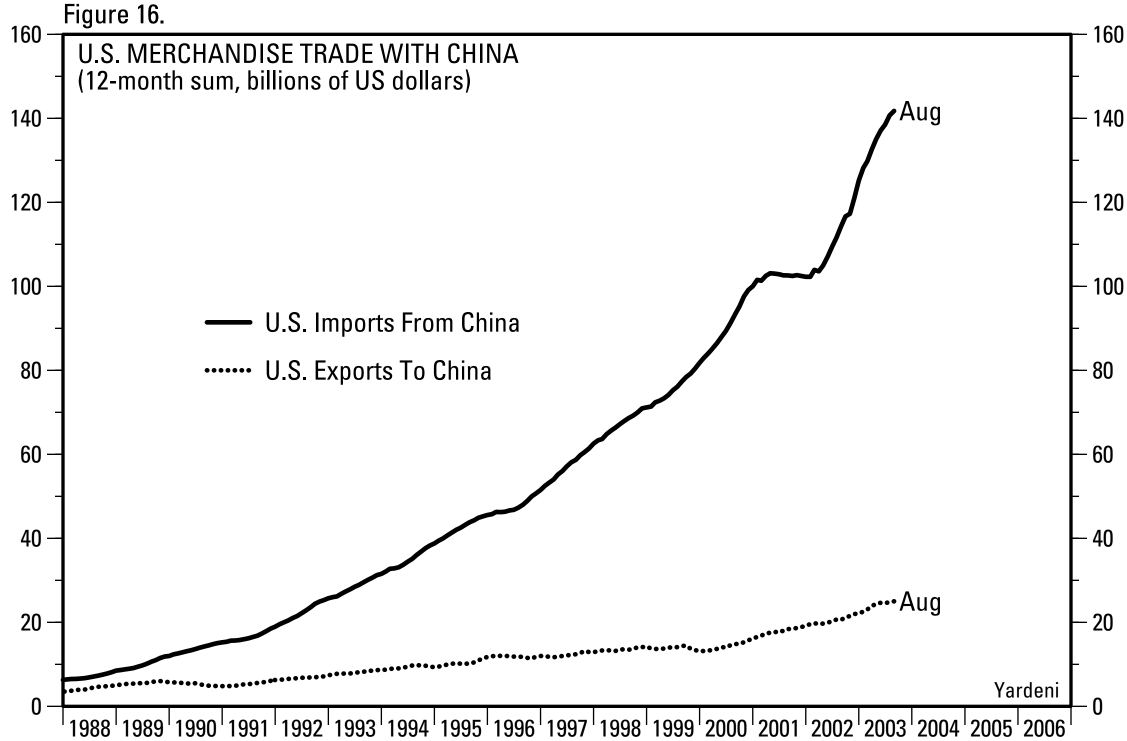
The U.S. trade deficit with China has widen to a record $117 billion over the past 12 months as imports from China have soared.

Figure 15.



Source: U.S. Department of Commerce, Bureau of the Census.

Figure 16.

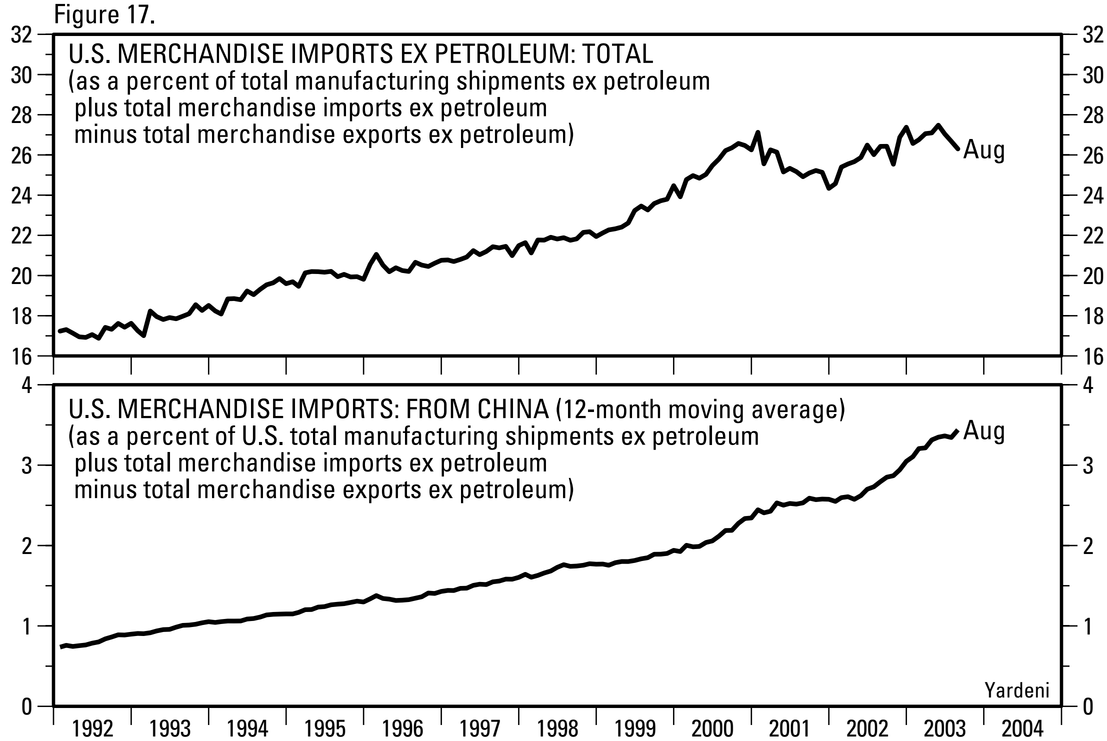


Source: U.S. Department of Commerce, Bureau of the Census.

China: Trade

Non-oil merchandise imports account for 26% of goods sold in the U.S. China's import penetration of the U.S. market is 3.4%.

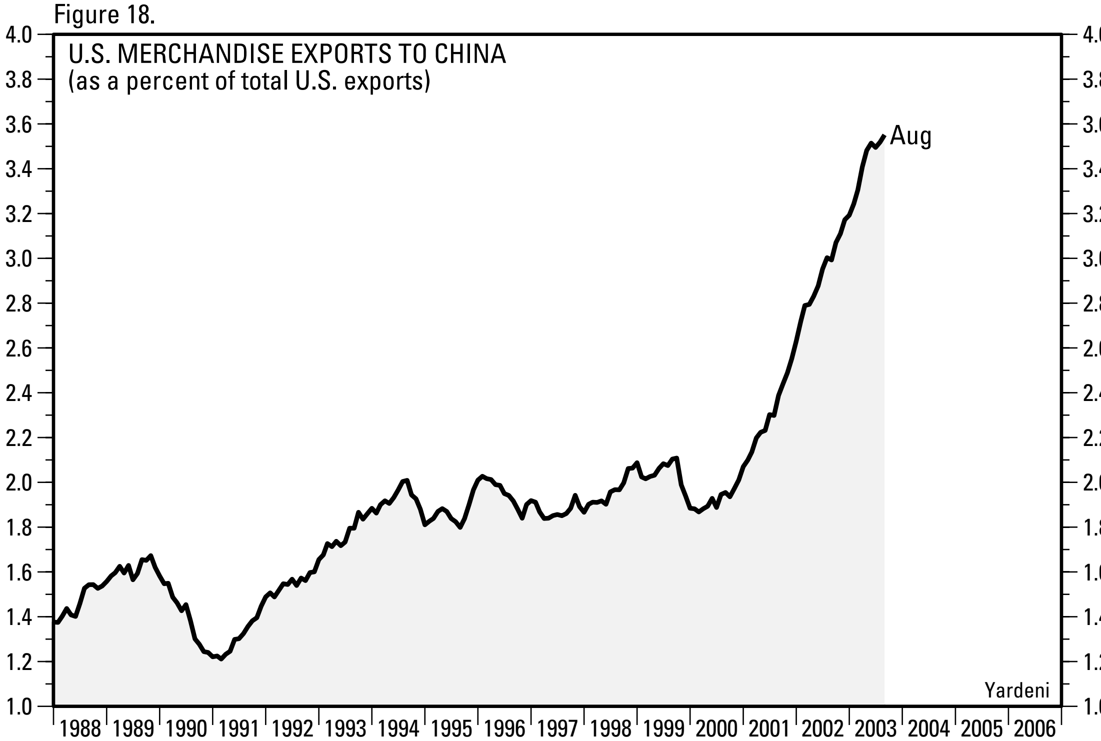
Figure 17.



Source: U.S. Department of Commerce, Bureau of the Census and China Customs/Haver Analytics.

U.S. exports to China are only 3.6% of total U.S. exports, but the ratio is rising rapidly.

Figure 18.

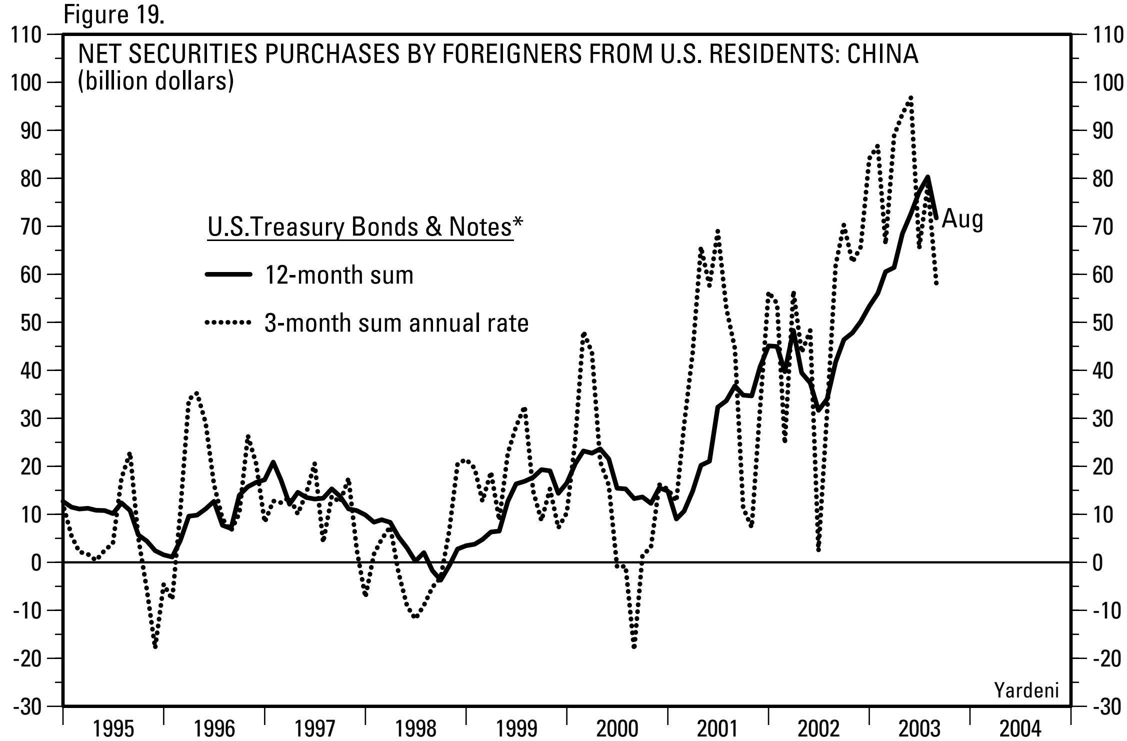


Source: U.S. Department of Commerce, Bureau of the Census.

China: Finance

Chinese have been big buyers of U.S. Treasury and Government Agency bonds.

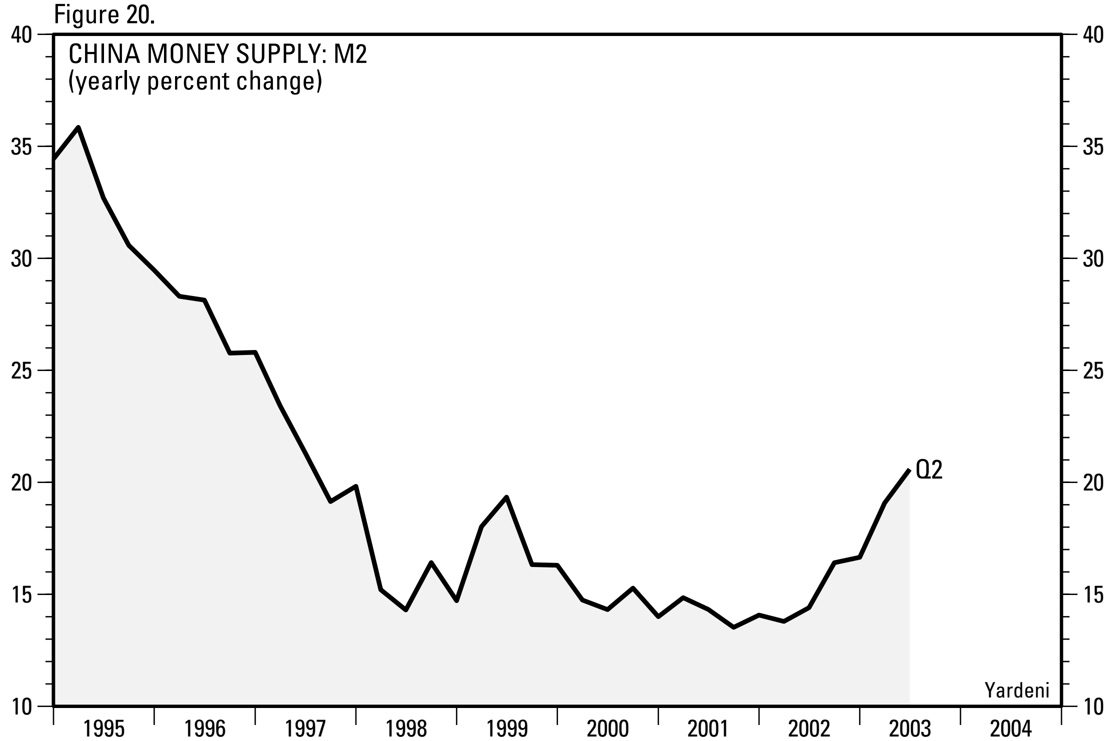
Figure 19.



* Including U.S. government agency bonds.
Source: U.S. Department of the Treasury, Office of International Affairs.

There's been rapid money supply growth in China.

Figure 20.



Source: People's Bank of China.

Appendix

Figure B: U.S. Imports from China, 1998 to 2002 (billion dollars)

	1998	1999	2000	2001	2002
Toys, shooting and sporting goods, and bicycles	10.6	11.2	13.2	12.4	14.8
Computer accessories, peripherals and parts	5.4	7.3	9.1	9.6	13.2
Other (clocks, port typewriters, other household gds	6.8	8.0	9.4	9.9	12.3
Footwear of leather, rubber, or other materials	6.0	6.1	6.6	7.2	7.4
Apparel and household goods-other textiles	4.6	4.8	5.3	5.6	6.4
Furniture, household items, baskets	2.1	3.0	4.0	4.6	6.3
Radios, phonographs, tape decks, and other stereo	3.7	3.6	4.3	3.9	4.4
Television receivers, vcr's & other video equip.	0.7	1.1	2.0	2.4	4.3
Nontextile apparel and household goods	2.5	2.7	3.7	3.8	3.9
Household and kitchen appliances	1.6	2.0	2.5	3.0	3.7
Sporting and camping apparel, footwear and gear	2.4	2.7	3.0	3.0	3.3
Electric apparatus and parts, n.e.c.	2.0	2.2	2.9	2.8	3.1
Telecommunications equipment	1.0	1.4	2.1	2.1	2.8
Apparel and household goods-cotton	1.9	2.0	2.0	2.1	2.8
Other products (notions, writing and art supplies)	1.7	1.9	2.1	2.1	2.4
Cookware, cutlery, house and garden wares, tools	1.1	1.4	1.7	1.8	2.2
Photo and service industry machinery & trade tools	0.8	1.0	1.2	1.5	1.9
Other parts and accessories	0.8	1.0	1.3	1.3	1.7
Other (boxes, belting, glass, abrasives, etc.)	0.8	1.0	1.2	1.3	1.7
Computers	0.2	0.4	1.5	0.8	1.6
Business machinery and equipment, except computers	1.3	1.2	1.3	1.1	1.3
Generators, transformers, and accessories	0.8	1.0	1.3	1.1	1.2
Artwork, antiques, stamps, and other collectibles	0.8	0.9	1.0	1.0	1.1
Minimum value shipments	0.4	0.6	0.8	0.8	1.0
Other industrial machinery	0.4	0.5	0.6	0.7	0.9
Jewelry (watches, rings, etc.)	0.4	0.5	0.7	0.7	0.9
Other scientific, medical and hospital equipment	0.4	0.5	0.6	0.8	0.9
Fish and shellfish	0.3	0.4	0.6	0.7	0.9
Glassware, porcelain, and chinaware	0.5	0.5	0.7	0.7	0.8
Finished metal shapes & adavanced manuf, except steel	0.4	0.5	0.7	0.7	0.8
Stone, sand, cement, and lime	0.4	0.5	0.7	0.7	0.7
Semiconductors and related devices	0.5	0.7	0.8	0.7	0.7
Photographic and optical equipment	0.7	0.7	1.0	0.9	0.7
Iron and steel manufactures-advanced	0.3	0.4	0.5	0.5	0.6
Other-finished (shingles, molding, wallboard, etc)	0.3	0.4	0.4	0.4	0.6
Other gem stones-precious, semiprecious, and imita	0.2	0.3	0.4	0.4	0.6
Books, magazines, and other printed matter	0.2	0.2	0.4	0.4	0.6
Industrial organic chemicals	0.3	0.3	0.4	0.5	0.5
Industrial engines, pumps, compressors & generators	0.3	0.3	0.4	0.4	0.5
Materials handling equipment	0.2	0.3	0.3	0.3	0.5
Industrial inorganic chemicals	0.4	0.3	0.4	0.5	0.5
TOTAL OF ABOVE	**66.0**	**76.1**	**92.9**	**95.3**	**116.6**
GRAND TOTAL	**71.2**	**81.8**	**100.0**	**102.3**	**125.2**

Source: U.S. Census Bureau (based on 5-digit end use code).

Appendix

Figure C: U.S. Exports to China, 1998 to 2002 (billion dollars)

	1998	1999	2000	2001	2002
Civilian aircraft	3.1	2.0	1.5	2.2	3.1
Semiconductors	0.5	0.7	0.9	1.1	1.6
Industrial machines, other	0.5	0.6	0.7	0.9	1.1
Telecommunications equipment	0.9	0.6	0.8	1.3	1.1
Soybeans	0.3	0.4	1.0	1.0	1.0
Computer accessories	0.5	0.5	1.1	1.3	0.9
Plastic materials	0.3	0.4	0.5	0.6	0.7
Chemicals-fertilizers	1.0	1.0	0.6	0.4	0.7
Measuring, testing, control instruments	0.4	0.3	0.3	0.5	0.5
Chemicals-organic	0.2	0.3	0.5	0.4	0.5
Electric apparatus	0.3	0.3	0.5	0.5	0.5
Steelmaking materials	0.1	0.1	0.2	0.4	0.5
Pulpwood and woodpulp	0.2	0.2	0.3	0.3	0.4
Hides and skins	0.1	0.1	0.2	0.4	0.4
Metalworking machine tools	0.2	0.2	0.2	0.3	0.4
Newsprint	0.3	0.3	0.4	0.3	0.4
Chemicals-other	0.1	0.2	0.3	0.4	0.4
Medicinal equipment	0.2	0.2	0.3	0.4	0.4
Other industrial supplies	0.1	0.2	0.2	0.3	0.3
Copper	0.1	0.1	0.3	0.3	0.3
Parts-civilian aircraft	0.3	0.3	0.2	0.3	0.3
Computers	0.3	0.3	0.4	0.3	0.3
Other parts and accessories of vehicles	0.1	0.2	0.2	0.2	0.3
Industrial engines	0.3	0.2	0.2	0.3	0.3
Manmade cloth	0.1	0.1	0.2	0.2	0.2
Aluminum and alumina	0.1	0.2	0.3	0.3	0.2
Engines-civilian aircraft	0.1	0.2	0.1	0.2	0.2
Logs and lumber	0.0	0.0	0.1	0.1	0.2
Tapes, audio and visual	0.0	0.0	0.1	0.1	0.2
Laboratory testing instruments	0.1	0.1	0.1	0.2	0.2
Fish and shellfish	0.1	0.1	0.2	0.1	0.2
Pharmaceutical preparations	0.1	0.1	0.1	0.1	0.2
Drilling & oilfield equipment	0.2	0.1	0.2	0.1	0.2
Photo, service industry machinery	0.1	0.1	0.1	0.1	0.2
Wood, glass, plastic	0.0	0.0	0.1	0.1	0.2
Other household goods	0.0	0.0	0.1	0.1	0.2
Generators, accessories	0.1	0.1	0.1	0.2	0.1
Cotton, raw	0.1	0.0	0.1	0.0	0.1
Chemicals-inorganic	0.0	0.0	0.1	0.1	0.1
Finished metal shapes	0.1	0.1	0.1	0.1	0.1
Minimum value shipments	0.1	0.1	0.1	0.1	0.1
Meat, poultry, etc.	0.1	0.1	0.1	0.1	0.1
Writing and art supplies	0.0	0.0	0.1	0.1	0.1
Excavating machinery	0.1	0.1	0.1	0.1	0.1
Misc. domestic exports and special transactions	0.1	0.1	0.1	0.1	0.1
TOTAL	**14.2**	**13.1**	**16.2**	**19.2**	**22.1**

Source: U.S. Census Bureau (based on 5-digit end use code).

Appendix

Figure D: S&P 500 Companies With Asia Pacific Sales Exposure Greater Than 15%

Company	% Exposure	Company	% Exposure
Nvidia	66	Autodesk	23
Aflac	55	Adobe Systems	23
Qualcomm	55	Tupperware	22
Texas Instruments	52	3M	21
Analog Devices	49	NCR	20
Molex	48	Applera-Applied Biosystems	20
Maxim Integrated Products	46	Zimmer Holdings	20
LSI Logic	41	Intel	19
Freeport McMoran Copper & Gold	37	Millipore	18
Altera	37	Jabil Circuit	18
Advanced Micro Devices	36	PMC-Sierra	18
KLA-Tencor	35	Sun Microsystems	18
Solectron	33	Eastman Kodak	17
National Semiconductor	30	Gateway	17
Xilinx	30	Boston Scientific	17
Qlogic	30	American Power Conversion	17
Applied Materials	28	Cisco Systems	17
Tiffany	26	Andrew	15
Parametric Technology	25	Wrigley	15
Applied Micro Circuits	24	International Flavors & Fragrances	15

Source: Compustat, PEG Investment Strategy.

Rating Distribution

	Prudential Equity Group, Inc. Research Universe	
11/07/03	**Consolidated**	**Investment Banking Clients**
Overweight(Buy)*	34.00%	2.00%
Neutral Weight(Hold)*	41.00%	5.00%
Underweight(Sell)*	25.00%	1.00%
Excludes Closed End Funds		
09/30/03	**Consolidated**	**Investment Banking Clients**
Overweight(Buy)*	34.00%	2.00%
Neutral Weight(Hold)*	41.00%	3.00%
Underweight(Sell)*	26.00%	1.00%
Excludes Closed End Funds		
06/30/03	**Consolidated**	**Investment Banking Clients**
Buy	40.00%	4.00%
Hold	57.00%	5.00%
Sell	4.00%	0.00%
Excludes Closed End Funds		
03/31/03	**Consolidated**	**Investment Banking Clients**
Buy	39.00%	3.00%
Hold	57.00%	6.00%
Sell	3.00%	0.00%
Excludes Closed End Funds		

* In accordance with applicable rules and regulations, we note above parenthetically that our stock ratings of “Overweight,” “Neutral Weight,” and “Underweight” most closely correspond with the more traditional ratings of “Buy,” “Hold,” and “Sell,” respectively; however, please note that their meanings are not the same. (See the definitions below.) We believe that an investor’s decision to buy or sell a security should always take into account, among other things, the investor’s particular investment objectives and experience, risk tolerance, and financial circumstances. Rather than being based on an expected deviation from a given benchmark (as buy, hold, and sell recommendations often are), our stock ratings are determined on a relative basis (see the, as defined below).

When we assign an **Overweight** rating, we mean that we expect that the stock's total return will exceed the average total return of all of the stocks covered by the analyst (or analyst team). Our investment time frame is 12-18 months except as otherwise specified by the analyst in the report.

When we assign a **Neutral Weight** rating, we mean that we expect that the stock's total return will be in line with the average total return of all of the stocks covered by the analyst (or analyst team). Our investment time frame is 12-18 months except as otherwise specified by the analyst in the report.

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Prior to September 8, 2003, our ratings were Buy, Hold, and Sell. A **Buy** rating meant that we believed that a stock of average or below-average risk offered the potential for total return of 15% or more over the following 12 to 18 months. For higher-risk stocks, we may have required a higher potential return to assign a **Buy** rating. When we reiterated a **Buy** rating, we were stating our belief that our price target was achievable over the following 12 to 18 months. A **Sell** rating meant that we believed that a stock of average or above-average risk had the potential to decline 15% or more over the next 12 to 18 months. For lower risk stocks, a lower potential decline may have been sufficient to warrant a **Sell** rating. When we reiterated a **Sell** rating, we were stating our belief that our price target was achievable over the following 12 to 18 months. A **Hold** rating signified our belief that a stock did not present sufficient upside or downside potential to warrant a Buy or a Sell rating, either because we viewed the stock as fairly valued or because we believed that there was too much uncertainty with regard to key variables for us to rate the stock a Buy or a Sell.

When we assign an industry rating of **Favorable**, we mean that generally industry fundamentals/stock prospects are improving.

When we assign an industry rating of **Neutral**, we mean that generally industry fundamentals/stock prospects are stable.

When we assign an industry rating of **Unfavorable**, we mean that generally industry fundamentals/stock prospects are deteriorating.

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CVCO, CVH, CVII, CVLVA, CVTI, CXP, CYBX, CYTB, DAFC, DAKMF, DATL, DBCI, DCLK, DCSN, DEBS, DEL, DF, DIEC, DIGE, DIVN, DLP, DLX, DNIR, DOX, DPMI, DRI, DRIV, DSCM, DSCP, DSS, DTG, DTPI, DTRX, DVN, DVSA, DYAN, DYN, ECF, EECC, EF, ELOFF, ELY, EML, ENDP, ENVT, EPIQ, EQTX, ESL, ESTK, ETF, EVC, EVIAC, EWBC, EWF, EXAR, FAMI, FARKC, FARO, FBGI, FBN, FBSH, FCCY, FCE.A, FCHC, FCN, FCTR, FEKR, FFBZ, FFDF, FFIV, FIBK, FIDF, FL, FLE, FLIR, FMER, FNC, FNSC, FOB, FOCF, FOE, FOX, FPL, FPU, FRF, FRGO, FRK, FSNM, FST, FUND, GADZ, GB, GCO, GDIE, GER, GF, GGC, GITN, GLOC, GLYT, GNLR, GODDE, GPI, GRAN, GRNTQ, GROSQ, GRR, GSOF, GSPN, GSPN9, GTLL, GTLS, GTN, GTRC, GVA, GWBB, GWM, GY, HAR, HAT, HBG, HCC, HCFO, HCNB, HEAC, HEII, HELX, HHH, HIBB, HLEX, HLTH, HMN, HOC, HOTT, HPOL, HRLY, HRS, HSC, HSCM, HSII, IAF, IBEV, IBTKF, ICST, IDEV, IEMMF, IES, IGT, IHWY, IIIN, IIJI, IIVI, IKN, IMAX, IMIT, IMMT, IMN, IRL, ISEDF, ITCD, ITG, ITUC, JAH, JAKS, JAWS, JH, JHS, JLMI, JNJ, JNS, JOSB, JOYG, JRC, KAI, KAMNA, KEA, KELYA, KERX, KEX, KFRC, KKD, KMI, KMT, KNAP, KNSY, KO, KTEC, KVHI, KWD, LABS, LADY, LBGF, LBY, LC, LCNTU, LDF, LDSH, LEA, LEN, LETH, LFG, LFZA, LICB, LIN, LLUR, LMWRA, LNCE, LNCR, LNR, LOW, LQI, LRCX, LSCC, LSMSF, LTTO, LTXX, LXNR, LYO, MADB, MANT, MAXS, MCDTA, MDPY, MDST, MEC, MECA, MEDB, MEE, MEMO, MERQ, MFGI, MFLO, MGNFF, MGP, MICAQ, MIK, MKC, MKL, MLI, MLLEQ, MLR, MMEM, MMRX, MNC, MNRO, MNST, MNY, MOSY, MPH, MPS, MRD, MRF, MRTN, MSD, MSF, MSM, MSVC, MTF, MTRX, MTSN, MTW, MYL, NABCQ, NAMG, NAV, NBIX, NCS, NCT, NDC, NEVNF, NICH, NMG.A, NPO, NSCN, NTBK, NTEX, NTSL, NTT, NUE, NVH, NVO, NX, NXTP, OCQ, OHP, OKE, OLN, OMEX, OMG99, OSI, OSTE, OSUR, OTL, OVAB, OVTI, PAAN, PANL, PATK, PATR, PBSP, PBY, PDE, PDLI, PEI, PENG, PER, PFGC, PHXYE, PHYP, PIR, PJFA, PJFC, PKD, PKE, PKG, PKTR, PLAB, PMACA, PMGEA, PMI, PNNW, PNR, PNRA, PNY, POG, POSS, POWI, POWL, POZN, PPG, PPL, PRLX, PRSP, PRUN, PRX, PSLA, PSS, PSTI, PSUN, PSVB, PTSI, PTZ, PW, PWER, PWN, PX, PZZA, QLGC, QNBC, QNTX, RA, RAVN, RBN, RBNC, RCLA, RCOM, RDWR, REPT, RESC, REXI, REY, RFMC, RGC, RKT, RLI, RML, RNBO, RNE, RNR, ROC, ROCM, ROH, ROIA, ROST, ROV, ROW, ROXI, RPAL, RPM, RRA, RSTI, RYAN, SAH, SBI, SBIT, SBSA, SCG, SCNO, SCPNA, SCPS, SCT, SCUR, SDMI, SESL, SFD, SFN, SFNT, SGC, SGF, SHFL, SIGI, SIPX, SKE, SKY, SKYW, SLE, SLGN, SMAN, SMG, SMLI, SMRT, SMSC, SNDK, SNIFQ, SNTVQ, SOSK, SOV, SPER, SPH, SPNC, SPRT, SPW, SPZN, SRA, SRCM, SRR, ST, STAR, STC, STLCQ, STNR, STS, STW, SUITE, SUMM, SUP, SUR, SVEIA, SVN, SWN, SWS, SWZ, SYEP, TAIE, TBC, TBCC, TBI, TDAD, TDY, TER, TESP, THCIQ, TK, TLD, TMM, TMNG, TMT, TMX, TMXIQ, TNC, TNL, TO, TOM, TOO, TPADA, TPC, TRMS, TRO, TROV, TRY, TSAI, TSCPQ, TUP, TWTC, TWTR, TXAG, TXON, UDGI, UEIC, UFBS, UFTC, UIS, UNBJ, UNFI, UNHC, UPL, USBR, USES, USTR, UTIW, UTSI, UVV, VANS, VAS, VAST, VBVT, VCI, VEGA, VELCF, VICL, VITL, VLMI, VLNT, VNX, VOTP, VPI, VRTS, VSH, VTIX, VUL, VVI, WASH, WB, WBS, WCGRQ, WCIIQ, WCST, WEBX, WEDC, WFT, WHG, WIBW, WLM, WLV, WMAR, WPI, WRLD, WST, WTSLA, WURT, 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