Order Code RS22808
February 13, 2008

CRS Report for Congress

How Large is China's Economy? Does it Matter?

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Summary

China's rapid economic growth since 1979 has transformed it into a major economic power. Over the past few years, many analysts have contended that China could soon overtake the United States to become the world's largest economy, based on estimates of China's economy on a "purchasing power parity" (PPP) basis, which attempts to factor in price differences across countries when estimating the size of a foreign economy in U.S. dollars. However, in December 2007, the World Bank issued a study that lowered its previous 2005 PPP estimate of the size of China's economy by 40%. If these new estimates are accurate, it will likely be many years before China's economy reaches U.S. levels. The new PPP data could also have an impact on U.S. and international perceptions over other aspects of China's economy, including its living standards, poverty levels, and government expenditures, such as on the military. This report will not be updated.

Measuring the Size of China's Economy

Since embarking on a road of free market reforms nearly three decades ago, China has been one of the world's fastest growing economies. The actual size of China's economy has been a subject of extensive debate among economists. China reports that its 2005 gross domestic product (GDP) was 18.4 trillion yuan.[1] Using average annual nominal exchange rates (at 8.2 yuan per dollar) yields \$2.2 trillion, equal to less than one-fifth the size of the U.S. economy.[2] China's per capita GDP (a common measurement of living standards) in nominal dollars was \$1,761, or 4.2% of U.S. levels. These data would indicate that China's economy and living standards in 2005 were vastly below U.S. levels. However, economists contend that these figures are very misleading. First,

[1] National Bureau of Statistics of China, *2006 China Statistical Yearbook*.

[2] China's currency is the renminbi, which is denominated in yuan.

nominal exchange rates only reflect the price of currencies in international markets, which can vary greatly over time.[3] Secondly, some exchange rate mechanisms, such as between the dollar and the Chinese yuan, may be significantly distorted by foreign government intervention.[4] Finally, nominal GDP data fail to reflect differences in prices that exist across nations. Surveys indicate that prices in developing countries (such as China) are generally much lower than they are in developed countries (such as the United States and Japan), especially for non-traded goods and services. Thus, a measurement of a developing country's GDP expressed in nominal U.S. dollars will likely understate (often significantly) the actual level of goods and services that GDP can buy domestically.

Purchasing Power Parity and GDP Size

Economists have attempted to factor in national price differentials by using a purchasing power parity (PPP) measurement, which converts foreign currencies into a common currency (usually the U.S. dollar) on the basis of the actual purchasing power of those currencies (based on surveys of the prices of various goods and services) in each respective country. In other words, the PPP data attempt to determine how much local currency (yuan, for example) would be needed to purchase a comparable level of goods and services in the United States per U.S. dollar. This "PPP exchange rate" is then used to convert foreign economic data in national currencies into U.S. dollars.[5] One of the largest PPP projects in the world is the International Comparison Program (ICP), which is coordinated by the World Bank. The ICP collects price data on more than 1,000 goods and services in 146 countries and territories (and makes estimates of 39 others).[6]

The ICP's New PPP Estimates of China's GDP. Prior to December 2007, data from the ICP and various private economic forecasting firms all seemed to agree that China's economy, measured on a PPP basis, was close to $9 trillion in 2005, ranking it as the world's second-largest economy, after the United States. Based on these estimates, and projections of continued rapid economic growth, many analysts predicted that China's economy would surpass that of the United States within a few years.[7] Such projections

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[3] Thus, a country's GDP could rise significantly in one year, but if its currency depreciated sharply against the dollar during the same period, it could appear that the actual size of the economy decreased over the previous year when data is converted to dollars.

[4] The Chinese government intervenes heavily in exchange rate markets by buying dollars in order to limit the yuan's appreciation against the dollar. Many analysts contend that the yuan is significantly undervalued vis-a-vis the dollar. See CRS Report RL32165, *China's Currency: Economic Issues and Options for U.S. Trade Policy* by Wayne M. Morrison and Marc Labonte.

[5] Some analysts contend that PPP exchange rates reflect the "true value" of what a country's exchange rate with the dollar would be if market forces prevailed and contend this can be used to calculate a currency's "undervaluation." However, others, including the World Bank, reject this theory.

[6] The ICP is an international program that conducts statistical price surveys of a comparable basket of goods and services across countries in order to estimate PPP values. The data is used by the World Bank, the International Monetary Fund, the United Nations, and other international agencies to develop programs and policy goals, such as poverty reduction.

[7] The Economist Intelligence Unit (EIU) and Global Insight both projected in November 2007

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helped fuel the growing debate over whether China posed an economic threat to the United States.[8] However, newly revised PPP data released by the World Bank in December 2007 purport to show that China's economy in 2005 was 40% smaller than previously estimated.[9] The ICP's previous 2005 PPP estimate of China's GDP (hereinafter referred to as *ICP 1*) at $8.8 trillion fell to $5.3 trillion (down by $3.3 trillion) under the ICP revision (hereinafter referred to as *ICP 2 revision*).[10] In addition, China's per capita GDP on a PPP basis dropped from $6,765 to $4,091 (see **Table 1**). The size of China's GDP relative to that of the United States fell from 71.3% under ICP 1 to 43.1% under *ICP 2 revision*, while per capita GDP relative to the United States dropped from 16.2% to 9.8%. Finally, the new revision decreased China's 2005 share of world GDP from 14.2% to 9.7% (the U.S. share rose from 20.5% to 22.5%).

Table 1. Comparison of Various Estimates of Chinese, U.S., and Japanese GDP on a PPP Basis: 2005

	China	United States	Japan
GDP values ($billions)			
Using nominal exchange rates	2,235	12,376	4,549
PPP basis (ICP 1)	8,819	12,376	4,013
PPP basis (ICP 2 revision)	5,333	12,376	3,870
Per Capita GDP ($)			
Using Nominal exchange rates	1,761	41,674	35,604
PPP basis (ICP 1)	6,765	41,674	31,401
PPP basis (ICP 2 revision)	4,091	41,674	30,290
Average annual exchange rates: local currency unit per dollar			
Nominal exchange rate	8.2	1.0	110.2
PPP rate (ICP 1)	2.1	1.0	125.1
PPP rate (ICP 2 revision)	3.4	1.0	129.6

Source: The World Bank, *2005 International Price Comparison Program, Preliminary Results,* December 17, 2007.

According to the ICP, the major difference between the old and new estimates of China's economy is that the latter reflects, for the first time, the inclusion of recent price survey data provided by China.[11] Previously, the ICP estimated China's PPP data based

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[7] (...continued)
that China's economy on a PPP basis would overtake the United States by the year 2010.

[8] See CRS Report RL33604: *Is China a Threat to the U.S. Economy?*, by Craig K. Elwell, Marc Labonte, and Wayne M. Morrison.

[9] The World Bank, *2005 International Comparison Program, Preliminary Results*, December 17, 2007.

[10] The ICP made revisions to its estimates of GDP size for several other countries as well. India's estimated GDP fell by 40%, and the overall size of world GDP in PPP also dropped.

[11] Although the new PPP estimate for China is likely to be much more accurate than previous data
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on a 1986 comparative survey of prices in the United States and China and subsequent extrapolations of that data. *ICP 2 revision* significantly increased price level estimates within China's economy. The new data estimated that Chinese prices were on average 42% of U.S. levels (compared to 26% under the previous estimate), which is reflected in the change in the estimate of China's PPP exchange rate from 2.1 yuan to the dollar to 3.4. The revised data indicate it will likely take many more years than previously thought before China's GDP and living standards reach U.S. levels.[12]

Implications For China and For U.S.-China Economic Ties

Although China's access to assistance and loans from international development agencies may be unaltered by the ICP PPP revision, the data may directly or indirectly effect China's economic policies and its attitudes in international trade discussions. China may attempt to use the PPP revisions to boost its claim that it is a "poor" country and that, given its development needs and large numbers of people living in poverty, it should not be pressed to adopt economic reforms (such as changes to its currency policy) that could prove disruptive, or be expected to adopt policies that slow its economy, such as curtailing its energy use in response to international concerns over global climate change. As a recent article in *The Economist* put it, "China would probably be quite happy to see its GDP revised down, hoping that America might stop picking on a smaller, poorer economy."[13] In February 2008, the World Bank stated that the ICP's revised estimate of China's PPP exchange rate data would affect its estimates of poverty levels in China, based on the daily cost of basic needs (estimated at roughly $1 PPP) and household surveys on consumption. The Bank estimates that the new PPP revisions would raise the estimated poverty rate in China in 2004 from 10% to 13-17%, or an increase from 130 million to between 169 to 221 million. Thus, previous estimates may have underestimated the number of Chinese living in poverty by up to 91 million people.[14]

Regardless of how China seeks to present the overall status of its economic development, commentators are speculating on the possible implications of the smaller GDP estimate of China for its socio-economic situation and policies, including:

- *China's political stability may be weaker than previously thought* — In the past, dissatisfaction with China's economic condition has lead to public unrest (e.g. — Spring 1989). The rising number of protests and demonstrations over the last few years may reflect, in part, the

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[11] (...continued)
that relied on an outdated survey, the data reflects price surveys over a limited part of China — 11 cities and surrounding rural areas — and it is not clear whether the PPP data accurately reflects average national price levels, especially since a large segment of the population lives in the countryside. Thus, the new China PPP estimate may somewhat overstate the national average of prices (which might increase the PPP exchange rate and GDP values), although the World Bank contends that this figure is not likely to exceed 5%.

[12] To illustrate, under the revision, China's GDP on a PPP basis, China could overtake U.S. GDP within roughly 13 years (from the 2005 baseline data), assuming average real GDP growth of 3% for the United States and 10% for China (both of which are optimistic projections), and no changes in price differentials between the two countries (which are unlikely).

[13] "A Less Fiery Dragon?" *The Economist*, November 29, 2007.

[14] World Bank, *China*, *Quarterly Update*, February 2008, p. 21.

dissatisfaction of China's poor with their lack of economic progress. [15] A 2005 article in *People's Daily* described China's growing income disparity as a "yellow alert" that could become a "red alert" in five years if the government failed to take proper actions.[16] A 2005 United Nations report stated that the income gap between the urban and rural areas was among the highest in the world and warned that this gap threatend social stability. The report urged China to take greater steps to improve conditions for the rural poor, and bolster education, health care, and the social security system.[17] The new PPP measurement may increase pressure within China to expand efforts to promote development in the rural areas where over 800 million people reside. According to a recent article in the *Atlantic Monthly*, some Chinese question why the government does not use its massive foreign exchange reserves to help alleviate poverty and respond to increasing income disparities across the country, rather than invest those funds overseas assets, such as in U.S. Treasuries.[18] Such a reallocation of China's investment portfolio might have repercussions for the U.S. economy.[19]

- *Lower prospects for democracy* — Prior to the release of the ICP revision report, some analysts had speculated that, once China reached a certain level of economic development and possessed a large and educated middle class, it would follow the examples of Taiwan and South Korea and begin to institute democratic reforms. The lower estimate of China's economy and living standards may dampen expectations in the West that China might soon move to adopt political reforms.[20]

- *Lower commitment to market reforms and trade liberalization* — In an effort to reduce income disparities and improve conditions for China's poor, there may be a return to some of the "command economy" methods of the past. The recent decision to impose strict price controls on basic food items and other household necessities might be seen as a temporary retreat from market reforms.

Finally, the ICP study may also alter how the U.S. government and the U.S. business community perceive China. The possible new view of China includes:

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[15] See CRS Report RL33416, *Social Unrest in China*, by Thomas Lum.

[16] "Party School Journal Warns Against China's Widening Income Gap," *People's Daily*, September 21, 2005.

[17] *China's Human Development Report 2005.*

[18] The Atlantic Monthly. *The $1.4 Trillion Question*, by James Fallows, January-February 2008.

[19] For an analysis of the possible repercussions of a reallocation of China's investments in U.S. Treasuries, see CRS Report RL34314, *China's Holdings of U.S. Securities: Implications for the U.S. Economy*, by Wayne M. Morrison and Marc Labonte.

[20] Conversely, some contend that a growing middle class may hamper democracy in China, especially if political reforms are seen as a threat to their own economic interests or to political instability. See, the Daily Yomiuri. *For China, Stability Comes Before Democracy*, January 13, 2008, p. 8.

- *Reevaluation of the Chinese government's budget* — The PPP data may affect how U.S. policymakers evaluate China's spending levels on policies that affect U.S. policy. For example, the U.S. Defense Department's annual report on China's military spending includes conversions of China's budget data by the Chinese People's Liberation Army (PLA) from nominal U.S. dollars into PPP levels. The report estimated the PLA's 2003 budget in $30.6 billion in nominal dollars and $141 billion on a PPP basis.[21] The World Banks's PPP revision could significantly decrease this estimate and other measurements of Chinese military spending as well as various public spending programs.[22]

- *Smaller export market potential* — As a senior fellow at the Council on Foreign Relations wrote, "U.S. businesses and entrepreneurs hoping to crack the Chinese and Indian markets must come to terms with a middle class that is significantly smaller than thought. Companies with growth plans tied to the Indian and Chinese markets could face disappointing results."[23]

However, it is important to note the limitations of PPP estimates of GDP — and where and when they provide useful insight in economic analysis. Although the estimated size of China's economy decreases under the PPP revisions, other aspects on China's economy remain significantly large. For example, trade and international financial data are generally unaffected by the reduction in China's PPP GDP. It is estimated that in 2007, China overtook the United States to become the world's second-largest exporter (after the European Union).[24] Similarly, in 2006 China was the world's fifth-largest recipient of foreign direct investment, the largest steel producer, the second-largest consumer of oil, and by some accounts, the largest emitter of carbon dioxide (CO2). In addition, since 2006, China has been the world's largest holder of foreign exchange reserves ($1.5 trillion at the end of 2007).[25] Thus, despite the ICP results, China remains a major trade and economic power and a major potential global player in international finances and investment flows.

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[21] U.S. Department of Defense, *Annual Report to Congress, Military Power of the People's Republic of China, 2007*, May 2007, p. 26.

[22] The Department of Defense report does not describe how it arrived at its PPP estimate for China (or if that data was obtained from another source). The PPP exchange rate used by Defense was about 1.8 yuan per dollar, while ICP's rate was 2.0 (in 2003). If the new ICPs' revised PPP exchange rate (3.4)were used, the estimated PLA budget on a PPP basis would fall to $85 billion.

[23] Walter Russell Mead, "The Great Fall of China," *Los Angeles Times*, December 30, 2007. While the level of Chinese consumer buying power may not be as large as once thought, the very size of China's population (1.3 billion) and its rapid economic growth make it a potentially huge market for U.S. goods and services. In 2007, China overtook Japan to become the third-largest destination for U.S. exports (after Canada and Mexico).

[24] Source: *The Economist Intelligence Unit (EIU) DataServices*. The EIU estimated U.S. and Chinese merchandise exports at $1,190 billion and $1,225 billion, respectively.

[25] China invests a large share of those reserves overseas, including in U.S. securities. See CRS Report RL34314, *China's Holdings of U.S. Securities: Implications for the U.S. Economy* by Wayne M. Morrison and Marc Labonte; and CRS Report RL34337, *China's Sovereign Wealth Fund*, by Michael F. Martin.