



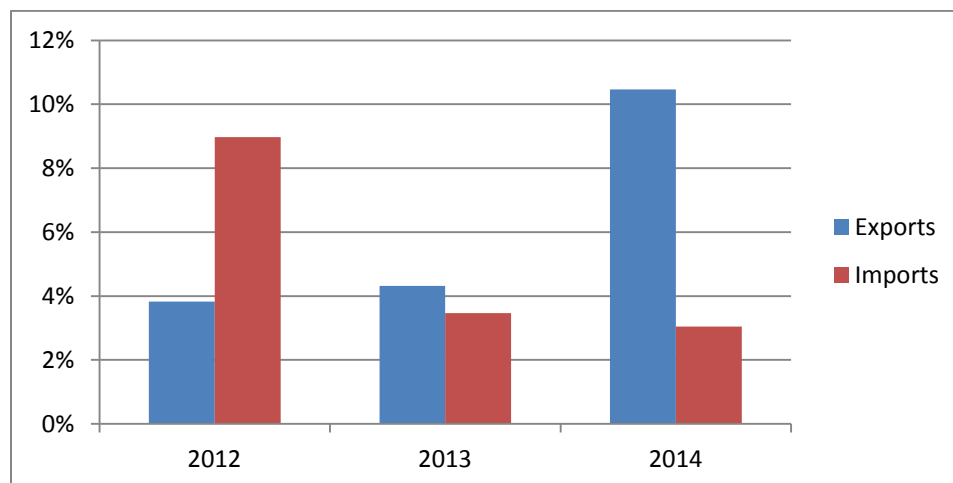
Highlights of this month's edition

- **Bilateral trade:** Bilateral trade expands, mostly due to U.S. exports; monthly bilateral trade deficit down 33 percent since September 2013
- **Bilateral policy issues:** Treasury calls RMB decline "unprecedented"; USTR Special 301 Report voices concerns about IP and trade secrets; dual appeal in WTO rare earths case
- **China's economy:** GDP growth slows to 7.4 percent; only one Chinese province meets 2014 growth target; China's exports and investment underperform in first quarter; China's GDP set to surpass the United States on PPP-basis as China's income inequality widens
- **Sector spotlight – Copper:** Minmetals buys Peruvian copper mine for \$5.85 billion; mine could supply 4-5 percent of China's copper imports; supply-demand imbalances ahead

Strong Exports and Slower Deficit Growth

Total trade between the United States and China increased only slightly in March, but the growth in U.S. exports was notable. Month-on-month, exports increased by 9.6 percent, while imports increased by 1.6 percent. Year-on-year, exports increased by 14.8 percent in March, compared to 6.2 percent a year ago. For the first quarter of 2013, exports rose by over 10 percent, significantly higher than in the past two years (see figure 1).

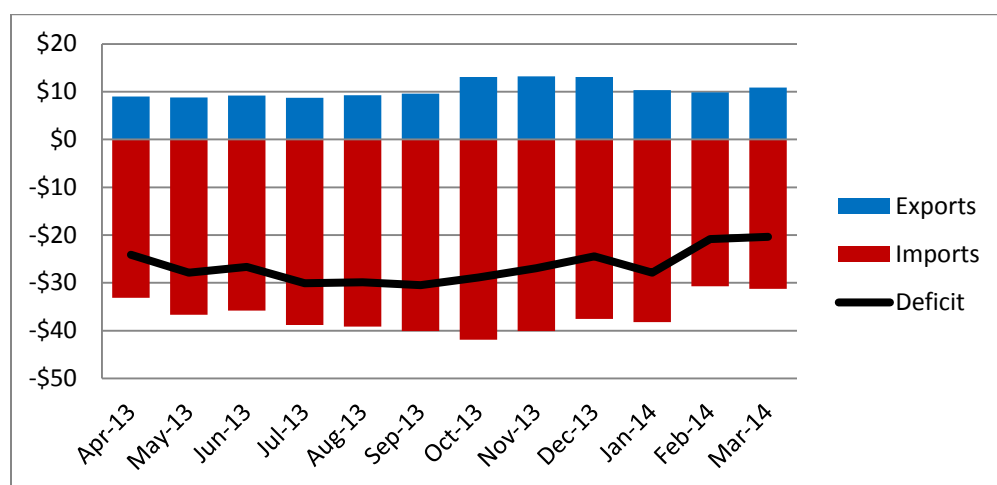
Figure 1: U.S.-China Merchandise Trade in the First Quarter, 2012-2014 (quarterly, year-on-year, %)



Source: U.S. Census Bureau, NAICS database (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, May 2014). http://censtats.census.gov/cgi-bin/naic3_6/naicCty.pl.

Higher export growth has contributed to a reduction in the bilateral trade deficit. The cumulative deficit for 2014 is currently at \$69 billion, virtually the same as a year ago, an indication that bilateral trade imbalances could be moderating this year. The monthly trade deficit reached a 12-month peak in September 2013 and has since reduced by 33 percent (see figure 2). While import reductions have been the primary driver of the reduced deficit over the past six months, higher exports were the major contributor this month.

Figure 2: U.S.-China Merchandise Trade
(in US\$ billions)



Source: U.S. Census Bureau, NAICS database (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, May 2014). http://censtats.census.gov/cgi-bin/naic3_6/naicCty.pl.

Top Exports and Imports

In March 2014, after consistent strong export performance, transportation equipment surpassed agricultural products as the top U.S. export to China with a share of 24 percent of total exports and a 48.7 percent increase year-on-year (see table 1). Computer and electronic products also slightly exceeded agricultural products. On the import side, computer and electronic products and electrical equipment continued to top the list with its share of total imports increasing from 31.5 percent last month to 38 percent this month.

Table 1: U.S. Trade with China: Top-Five Exports and Imports, March 2014
(in US\$ millions)

U.S. Top-Five Exports to China				U.S. Top-Five Imports from China			
	Exports	Share of total (%)	Change over Mar'13 (%)		Imports	Share of total (%)	Change over Mar'13 (%)
<i>Monthly (March 2014)</i>				<i>Monthly (March 2014)</i>			
Transportation Equipment	2,595,795	24.0%	48.7%	Computer and Electronic Products	11,865,586	38.0%	6.2%
Computer and Electronic Products	1,324,985	12.2%	-11.6%	Electrical Equipment, Appliances, and Component	2,571,375	8.2%	32.1%
Agricultural Products	1,207,120	11.1%	8.9%	Machinery, Except Electrical	2,316,904	7.4%	32.8%
Chemicals	1,197,945	11.1%	12.7%	Miscellaneous Manufactured Commodities	2,199,030	7.0%	22.3%
Machinery, Except Electrical	979,774	9.0%	14.3%	Apparel and Accessories	1,632,946	5.2%	10.3%
Other	3,524,599	32.5%	-	Other	10,647,897	34.1%	-
Total	10,830,218	100.0%		Total	31,233,738	100.0%	
<i>Year-to-date (thru March 2014)</i>				<i>Year-to-date (thru March 2014)</i>			
Agricultural Products	6,379,057.0	20.5%		Computer and Electronic Products	33,749,189	33.7%	
Transportation Equipment	5,843,139.0	18.8%		Electrical Equipment, Appliances, and Component	8,157,137	8.1%	
Computer and Electronic Products	3,584,332.0	11.5%		Miscellaneous Manufactured Commodities	7,550,258	7.5%	
Chemicals	3,347,277.0	10.8%		Machinery, Except Electrical	7,007,017	7.0%	
Machinery, Except Electrical	2,360,611.0	7.6%		Apparel and Accessories	6,818,416	6.8%	
Other	9,551,654.0	30.7%	-	Other	36,888,831	36.8%	-
Total	31,066,070	100.0%		Total	100,170,848	100.0%	

Source: U.S. Census Bureau, NAICS database (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, May 2014). http://censtats.census.gov/cgi-bin/naic3_6/naicCty.pl.

Advanced Technology Products

The U.S.-China trade deficit in advanced technology products (ATP) increased by 22 percent between February and March 2014 to \$8.2 billion (see table 2). Information and communication technology (ICT) continues to top the list of imports, and aerospace continues to rank first in exports. Aerospace exports nearly doubled since February, but a 27 percent increase in ICT imports was enough to offset this and expand the deficit in ATP. Excluding ICT products, the United States ran an ATP surplus of \$1.27 billion in March 2013.

Table 2: Advanced Technology Product Trade, March 2014
(in US\$ millions)

	Monthly			Cumulative year-to-date			
	Exports	Imports	Balance Mar '14	Exports	Imports	YTD Balance Mar '14	YTD Balance Mar '13
TOTAL	2,832	11,015	-8,183	6,918	31,038	-24,120	73
(01) Biotechnology	49	7	42	114	25	89	168
(02) Life Science	284	154	130	657	492	165	-841
(03) Opto-Electronics	56	527	-471	98	1,331	-1,233	-27,688
(04) Information & Communications	388	9,850	-9,462	1,105	27,844	-26,739	316
(05) Electronics	388	280	108	1,179	810	369	288
(06) Flexible Manufacturing	239	88	151	642	230	412	11
(07) Advanced Materials	14	27	-13	43	67	-24	1,836
(08) Aerospace	1,409	76	1,333	3,070	214	2,856	-27
(09) Weapons	0	6	-6	0	25	-25	183
(10) Nuclear Technology	5	0	5	10	0	10	-25,681

Source: U.S. Census Bureau, NAICS database (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, May 2014). http://censtats.census.gov/cgi-bin/naic3_6/naicCty.pl.

Bilateral Policy Issues

Treasury Calls RMB Decline "Unprecedented" but Stops Short of Calling It Manipulation

In its semiannual report on exchange rate policies, the U.S. Treasury criticized the recent depreciation of China's renminbi (RMB) currency. The "unprecedented" decline raises "particularly serious concerns" if it signals a "retreat from China's announced policy of allowing the exchange rate to reflect market forces."¹ However, adhering to its policy of the past 20 years, the Treasury did not call China a "currency manipulator."

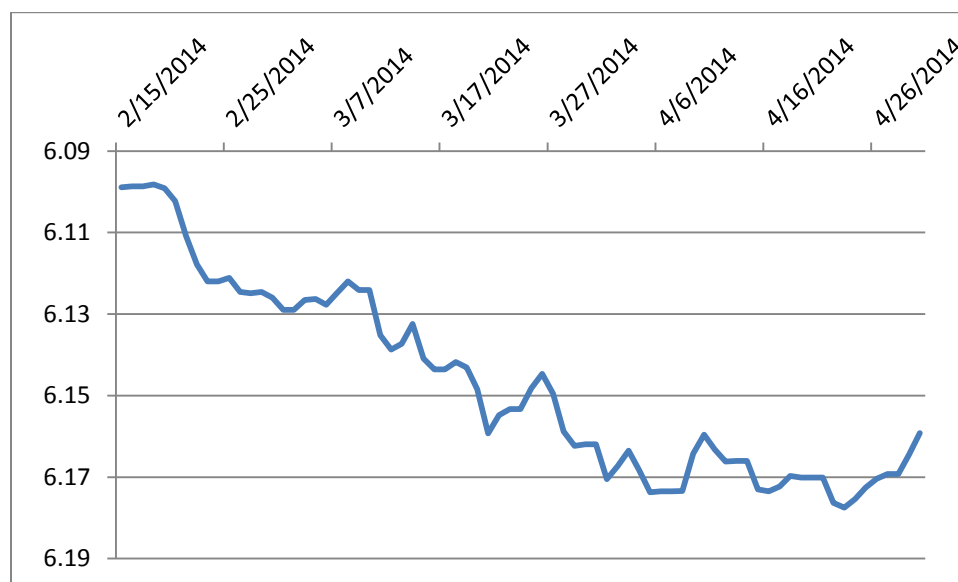
As discussed in the March 2014 edition of the bulletin, the RMB has been on a steep decline since late February.¹ Between February 17 and March 20, the RMB weakened by 2.6 percent in nominal terms against the dollar, effectively undoing its 2.9 percent appreciation against the dollar in 2013 (see figure 3).² This trend set in just as the People's Bank of China (PBoC), China's central bank, prepared to widen the RMB's intra-day trading band from ± 1 percent to ± 2 percent on March 17.

It appears that, while the PBoC has accepted the need to liberalize China's exchange rate, it is seeking to counter excessive appreciation of the currency, which would place the country's already troubled export sector at a competitive disadvantage. David Loevinger, a former Treasury official now with TCW Group, Inc., said China's main priority now is maintaining growth and staving off unemployment.³ The policy also penalizes speculators channeling money into China to take advantage of the RMB's appreciation.

¹ See March 2014 bulletin:

http://origin.www.uscc.gov/sites/default/files/trade_bulletins/March%202014%20Trade%20Bulletin.pdf.

Figure 3: Chinese RMB per U.S. Dollar, February-April 2014



Source: Oanda Historical Exchange Rates. <http://www.oanda.com/currency/historical-rates/>.

The PBoC engaged in heavy market intervention to significantly weaken the value of the RMB, buying up billions in dollar inflows. During 2013, China's foreign exchange reserves grew by \$509.7 billion, a record for a single year.⁴ In the first quarter of 2014, continued intervention by the PBoC has pushed China's already massive foreign exchange reserves to an all-time high of \$3.95 trillion.⁵ That only adds to a long-term dilemma for China: if the dollar depreciates against the RMB in future, China may forfeit billions in accumulated wealth.ⁱⁱ

USTR Cites China for Trade Secret Theft in 2014 Special 301 Report

For the 25th year in a row, the Office of the U.S. Trade Representative (USTR) placed China on the Priority Watch List in its annual Special 301 Report for its failure to protect intellectual property (IP).⁶ The United States is a knowledge economy, and IP-intensive goods comprise a significant share of U.S. exports. But China lags behind, partly due to widespread piracy and impeded market access. Although USTR noted some improvement in China's cooperation over counterfeit products and software and entertainment piracy, U.S. stakeholders in China continue to report "serious obstacles" to effective protection of IP in all forms, "including patents, copyrights, trademarks, trade secrets as well as protection against unfair commercial use or unauthorized disclosure of test and other data generated to obtain marketing approval for pharmaceutical products."⁷ Some of these obstacles are summarized below.

Trade Secrets Theft: In recent years, trade secret theft by Chinese entities, including industrial and economic espionage, has emerged as a major threat to U.S. companies, alongside perennial problems like counterfeit DVDs and software piracy. The Office of the National Counterintelligence Executive has identified Chinese actors as the "world's most active and persistent perpetrators of economic espionage."⁸ USTR noted that theft occurs

ⁱⁱ The extent of China's losses is difficult to quantify, as it depends on the size of China's holdings and prevailing market conditions at the time. Chinese officials have expressed their concerns about prospective losses on multiple occasions. For example, China criticized the U.S. Federal Reserve quantitative easing program (which boosted the U.S. money supply) for fear that it would undermine the value of China's holdings of U.S. dollar assets, either by causing the dollar to depreciate against other major currencies or by significantly increasing U.S. inflation

not only inside but also outside China, “for the competitive advantage of Chinese state-owned and private companies,” with perpetrators and beneficiaries of such theft operating with “relative impunity.”⁹ USTR concluded that in practice, effective remedies, including under Chinese law, appear to be difficult to obtain.¹⁰

Forced Technology Transfer: Also of significant concern to the U.S. government are Chinese central, provincial, and local government measures and actions that require or pressure rights holders to transfer IP from foreign to domestic entities, often guided by government policies intended to promote indigenous innovation and the development of strategic industries. USTR noted that government authorities may deny market access or condition “government procurement, permissions, subsidies, tax treatment, and other actions on IPR being owned or developed in China, or licensed to a Chinese entity.”¹¹ Moreover, the U.S. government has observed an increased number of stakeholders reporting that Chinese government entities are “using regulatory pressure to compel the licensing of important technologies or to dissuade stakeholders from pursuing available legal avenues to enforce their IPR.”¹² The report noted that Chinese innovation-related measures frequently call for technology transfer, and sometimes include criteria that “could require IP rights to be developed in China, or to be developed by or licensed to a Chinese party.”¹³

Technological Standards: USTR noted that when developing technological standards, the Chinese government often employs practices that disadvantage U.S. and other foreign companies. For example, Chinese standard-setting bodies often exclude foreign parties from the process of developing or assessing new standards, or may allow foreign firms to participate only if they act through a joint venture in which they “can only have a minority ownership stake,” license their IP to Chinese entities on “concessional terms,” or transfer technology.¹⁴ More troubling, based on a limited number of investigations conducted to date, USTR found that “Chinese competition authorities may target for investigation foreign firms that hold IPR that may be essential to the implementation of certain technological standards.”¹⁵

United States and China Appeal WTO Rare Earths Decision

After the WTO Dispute Settlement Body found in a March 2014 decision that China’s restrictions on exports of rare earth elements (REE) violated China’s obligations under its WTO accession commitments, both the plaintiffs and the defendant to the dispute filed appeals. In its original submission, China argued that the restrictions on exports of REE were put in place to conserve “exhaustible natural resources,” consistent with GATT Article XX (g) which permits such restrictions, provided they are applied in “conjunction with restrictions on domestic production or consumption,” so that domestic consumers were not given an unfair advantage over foreign consumers. The Panel found that China failed to demonstrate that its export quotas and conservation program were working in a way that treated foreign and domestic consumers equally.ⁱⁱⁱ China’s April 17 appeal broadly restates its original line of reasoning, arguing the Panel incorrectly interpreted China’s accession agreement obligations and how they relate to GATT and the overall package of China’s WTO rights and obligations.¹⁶

The United States filed its appeal on April 8, but said the appeal was conditional on China’s appeal.¹⁷ The U.S. appeal relates to the Panel’s decision to reject exhibits submitted by complainants with their comments on China’s responses to the Panel’s questions.

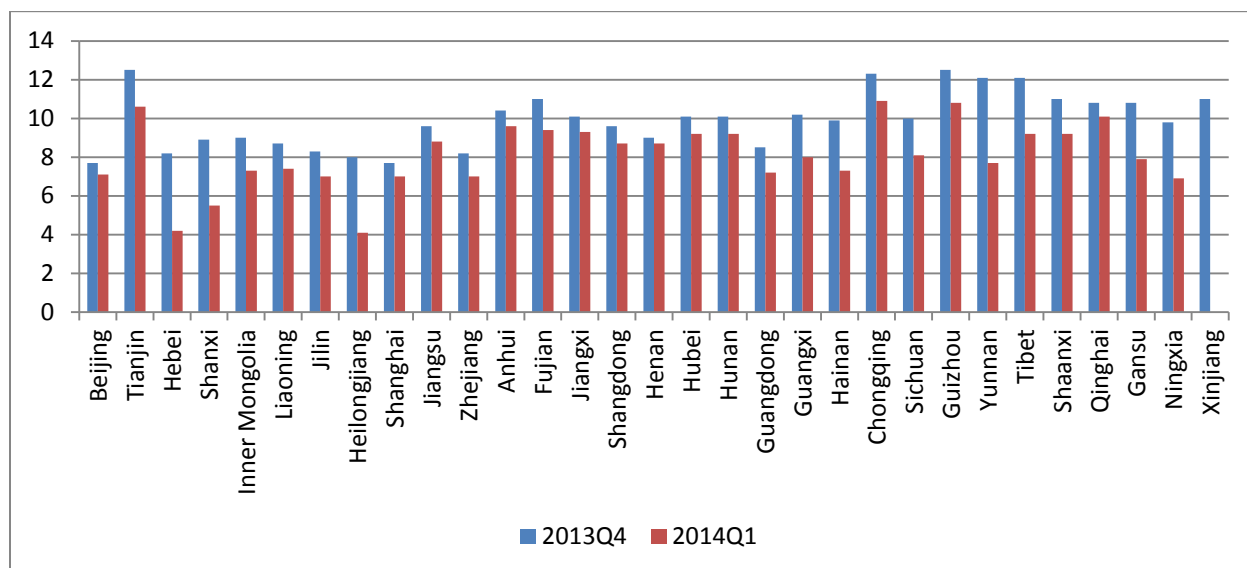
ⁱⁱⁱ See April 2014 trade bulletin for the details of the case and the Panel’s decision.
http://origin.www.uscc.gov/sites/default/files/trade_bulletins/April%202014%20Trade%20Bulletin.pdf.

China's Economy

National GDP Growth Slows and Provinces Miss Their Targets

On April 16, China announced its GDP growth for the first quarter of 2014. At 7.4 percent, it missed the government's annual target of 7.5 percent, and slowed from the 7.7 percent growth in the final quarter of last year. The latest figure added pressure on the government to stimulate the economy, which has steadily decelerated since 2012. Although local officials tend to exaggerate industrial activity, this time around, GDP reported at the sub-national level was unusually poor (see figure 4). Thirty of 31 Chinese provinces and municipalities missed their growth targets for the first quarter of 2014. This is particularly interesting since 23 provinces had lowered their annual growth target from 2013 and only one (Guangdong) had raised it. Anhui, an eastern inland province, was the only one to exceed its goal for the year (9.5 percent), posting 9.6 percent growth.¹⁸ On average, the provincial GDP growth rate slowed to 8 percent in 2014Q1 from 9.5 percent in the same period last year, according to Bank of America researchers.¹⁹

Figure 4: Quarterly GDP Growth by Province
(year-on-year, %)



Source: National Bureau of Statistics, via CEIC data.

Note: Data for 2014Q1 for Xinjiang not available.

Based on the slump in key indicators, many analysts expected China's first-quarter growth to be even lower—on the order of 7.2 percent.²⁰ Exports, a key component of growth, fell by 3.4 percent year-on-year in the first three months, the first time quarterly exports have contracted since the financial crisis in 2009. While total trade dropped by 1 percent over the first quarter of 2013, the trade surplus plummeted by 60 percent. At the same time, China's manufacturers appear to be importing large volumes of raw materials to take advantage of cheap commodity prices. For crude oil, iron ore, and copper, the volume of imports has outpaced the value. That may exacerbate excess industrial capacity. It is notable that growth in industry value-added has kept fairly steady, at 8.8 percent year-on-year.²¹

Fixed investment, which accounts for about half of China's GDP, rose by 17.6 percent in the first quarter, the lowest rate since 2001. Although foreign direct investment (FDI) rose by 5.5 percent, an improvement over last year, that number is misleading. The most dynamic FDI category in China's official statistics is "real estate," which soared by 41.7 percent year-on-year in the first quarter, raising its share of total FDI to 27.9 percent. Meanwhile, FDI in the manufacturing sector fell by 11.7 percent. That corresponds to a precipitous fall in

confidence among manufacturers surveyed in HSBC's purchasing managers' index, which has been below 50 (signaling falling output) since January.²²

Toward Rebalancing?

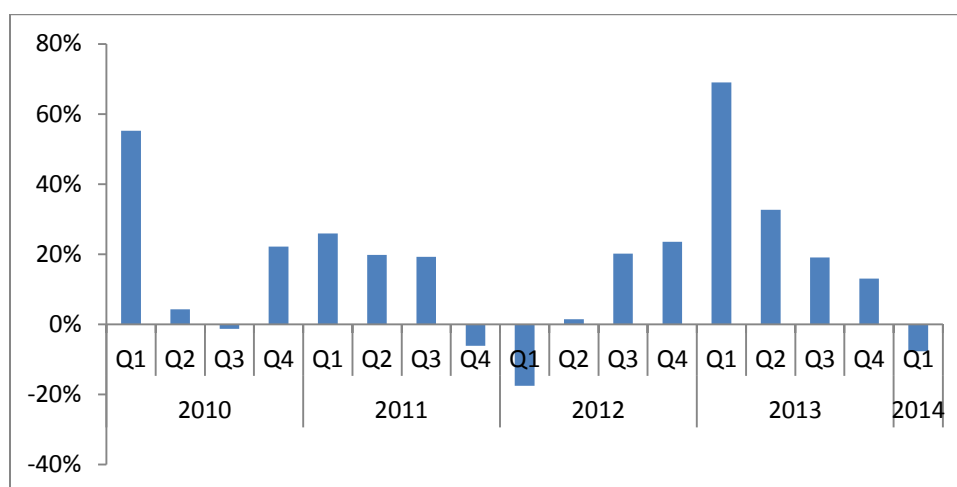
Rebalancing policies, such as shedding overcapacity, controlling pollution, and reducing debt, may partially explain China's recent economic slowdown.²³ The latest provincial figures show that resource-intensive provinces with severe overcapacity also had the biggest shortfalls in GDP growth: Heilongjiang (4.1 percent in 2014Q1 from 8 percent in 2013), Hebei (4.2 percent from 8.2 percent), and Shanxi (5.5 percent from 8.9). In the northeastern industrial center Heilongjiang, the government has been shutting down inefficient factories.²⁴ The story is similar in Hebei (the country's biggest steelmaker) and the heavily coal-dependent Shanxi.²⁵ Recent back-to-back reports from the Ministry of Land and Resources and the Ministry of Environmental Protection suggest that the government's decision to focus on the environment is long overdue. The report found either moderate or serious pollution in 59.6 percent of China's water, 16 percent of the country's soil and 19 percent of its arable land.²⁶

In the financial sector, Chinese financial institutions slashed the supply of credit by \$90 billion in the first quarter, underlining the scale of Beijing's crackdown on the shadow finance system.²⁷ In mid-April, the China Banking Regulatory Commission (CBRC) also issued stricter guidelines governing trust companies, in order to reduce liquidity risks associated with off-balance-sheet wealth management products (WMPs). The guidelines forbid trusts from operating so-called "fund pools" that enable them to fund cash payouts on maturing products with the proceeds from new WMP sales.²⁸

However, if the trend towards slower growth continues, it is questionable whether the government's determination will hold up. One concern is the recent decline in the housing market (see figure 5, below), which boomed last year. In an effort to make up for shortfalls in tax revenue, local governments stepped up land sales in the first quarter, causing a glut in supply.²⁹ Some of the country's largest property developers, such as Soho China, are moving to sell as well.³⁰ In tandem with declining property values, China's financial system will be tested with \$420 billion-worth of trust products coming due this year.³¹ In late April, several dozen rich investors from around China gathered outside the headquarters of state-owned China Construction Bank in Beijing to protest over the default of a high-interest trust product, suggesting that allowing more defaults in this sector could become a source of instability.³²

There are signs that China is again loosening its credit policy. China's banks issued 1.05 trillion RMB (\$168.8 billion) in new loans in March—up from 644.5 billion RMB in February and slightly above the 1 trillion RMB forecast of economists polled by *The Wall Street Journal*.³³ A former central bank official also urged the government to deploy 100 billion to 200 billion RMB (\$16 billion to \$32 billion) this year to help restructure indebted companies.³⁴

Figure 5: Residential Buildings Sold in China
(quarterly, year-on-year, %)



Source: China National Bureau of Statistics, via CEIC data.

China Hits Two Milestones: GDP (PPP) and Inequality

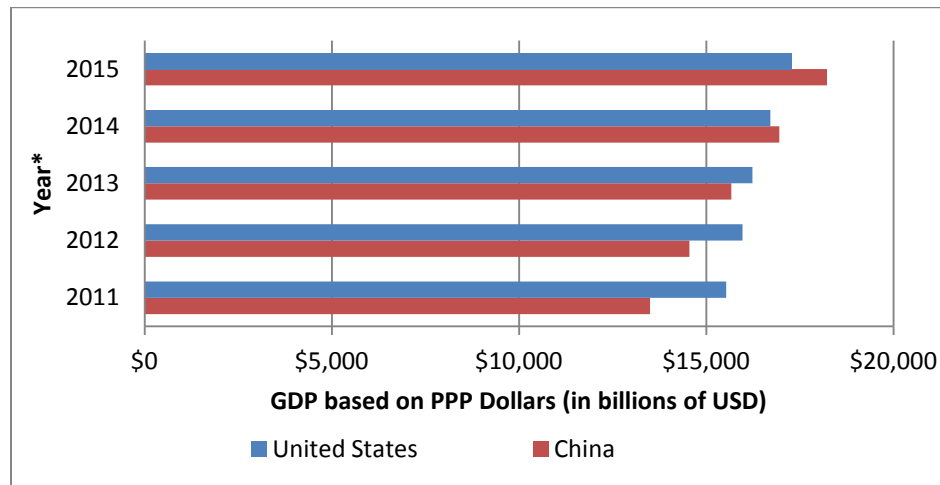
Several media headlines this month predict China will surpass the United States as the world's largest economy in 2014 based on new data. Though a noteworthy economic milestone, the statistic (GDP measured in PPP dollars) is not very useful beyond making international comparisons of economic size and is not indicative of economic health or potential. Another recently announced but lesser known statistical milestone in China may be much more insightful: China's income inequality has far exceeded that of the United States and is now estimated to be among the highest in the world.

This month, the World Bank's International Comparison of Prices (ICP) project revised up its 2011 estimate of China's GDP in PPP dollars by about 20 percent.³⁵ The new estimate suggests that China's economy was already 87 percent the size of the U.S. economy in 2011, and based on current GDP growth estimates will surpass the United States this year (see figure 6). GDP measured in PPP dollars is distinct from nominal or real GDP measurements in that it seeks to compare how much money can buy across different economies.^{iv} Economists caution that it is only one measure of economic size and is not an indicator of the overall health, stability, or future potential of an economy.³⁶

China's government rejected the new data, saying that it "expressed reservations about some aspects of the methodology," and Chinese state-run media refrained from publishing the headline news.³⁷ According to some Western media reports, China pressed to stop publication of the revised data.³⁸ Chinese officials fear that if China's economy is indeed considered the world's largest, pressure may escalate to take on "added international responsibility."³⁹

^{iv} According to World Bank indicators, China's GDP (measured in constant 2005 USD) is about one-third the size of the U.S. economy.

Figure 6: China and U.S. GDP
(PPP dollars)



*2014 and 2015 GDP (PPP) values based on OECD predictions of GDP growth rates
Source: World Bank ICP for GDP PPP estimates and OECD for GDP growth rates

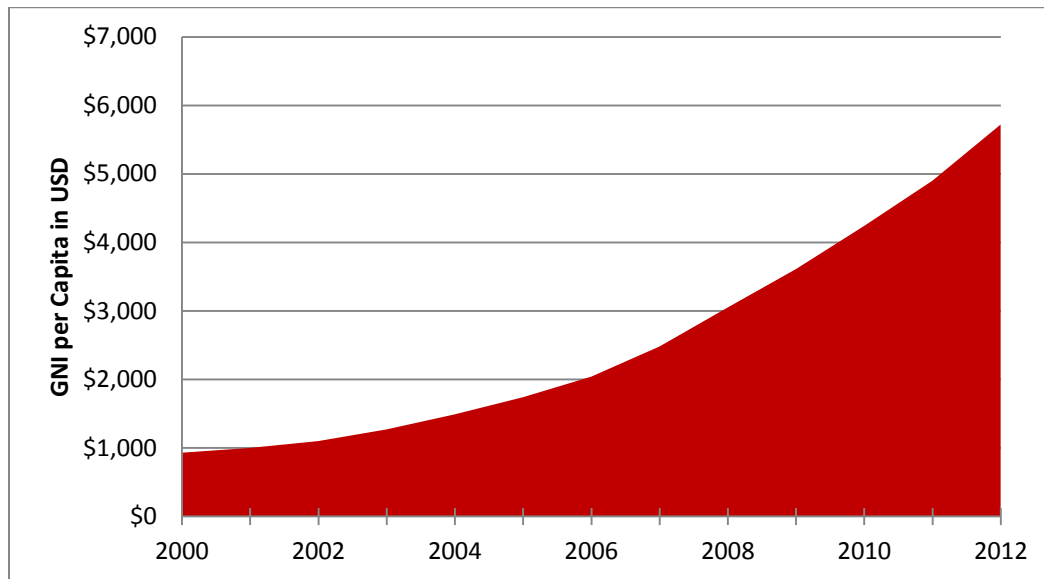
Economic analysts generally agree that the GDP (PPP) is little more than a statistical milestone and is not an indicator that China has departed from developing country status, which is measured at the per capita level. The World Bank currently classifies China as an “upper-middle-income economy,” as measured by gross national income (GNI)^v per capita. Other countries in this group include Argentina, Brazil, Malaysia, Mexico, and Thailand. In 2013, China’s GNI per capita was only \$5,720, which falls toward the lower end of the upper-middle-income range (\$4,086 to \$12,615) and is only one-tenth that of the United States.⁴⁰ Therefore, China’s GNI per capita would have to more than double before it would be classified as a high-income country under World Bank classifications.

However, China’s GNI per capita has grown at much higher rates than its overall GDP (see figure 7).⁴¹ Since 2002, China has experienced double-digit GNI per capita growth, with increases exceeding 20 percent annually in 2007 and 2008. From 2010-2012, China’s GNI per capita growth hovered around 16 percent per annum. If this trend continues, China could enter the official “high-income” bracket (\$12,616 or more) in the near future; however, recent slowing growth makes this difficult to predict.

Like the GDP (PPP) indicator, however, this linear progression of per capita income growth ignores another important and striking trend in China’s economic development: a very high and rising level of income inequality. Rising income inequality has become a major economic and political problem for China. Though high income inequality is not unique to China, the rate of increase in inequality since 1980 to current severe levels suggests that this could be a destabilizing factor in the future.

^v GNI is the total domestic and foreign output claimed by residents of a country, consisting of GDP plus factor incomes earned by foreign residents, minus income earned in the domestic economy by nonresidents. Per World Bank country classification, countries below the “high-income” bracket are considered developing. For World Bank country classifications, see <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>.

Figure 7: China's GNI per Capita, 2000-2012 (US\$)



Source: World Bank World Development Indicators.

A key indicator of economic inequality is the Gini coefficient, a statistic that the Chinese government temporarily ceased publishing in 2000 when China's Gini started to approach 0.5, which is the widely accepted standard for severe inequality between rich and poor. In 2013, the Chinese government issued a Gini estimate of 0.474 that covered the unreported period through 2012 and alleged that Chinese income inequality was decreasing. This month, researchers at the University of Michigan published a study estimating China's Gini coefficient at 0.55, which is about 20 percent higher than the U.S. level. The authors of the study say that based on their estimates, China's income inequality "is among the highest in the world, especially in comparison to countries with comparable or higher standards of living."⁴²

The University of Michigan study is based on survey data from the China Family Panel Studies, a research project under Peking University's Institute of Social Science Survey and provided to the University of Michigan through a formal partnership. The survey covers 95 percent of the Chinese population in 25 provinces.⁴³

Although all income brackets are enjoying growth in China, income in the lower brackets is increasing at a much slower pace than the national average. Some estimates show that annual per capita income growth is about 4 percent among the poor and 6.5 percent among the middle class.⁴⁴ Though high globally, these rates are less than half China's national levels which are consistently around 15-16 percent. This suggests that the majority of new income is going primarily to China's wealthiest.

Severe income equality may be politically destabilizing, which worries China's Communist leadership. 2012 survey data from the World Bank found that inequality was among the top three development priorities among the Chinese public along with governance and economic growth.⁴⁵ In addition, labor strikes have been on the rise in China as workers demand higher wages and better working conditions.⁴⁶

Sector Focus: Copper

On April 14, China's miners deepened their presence in the world market with the purchase of Las Bambas, a giant copper mine in Peru. The buyers, a consortium led by China's largest metals trader Minmetals, will pay \$5.85 billion to Glencore Xstrata, the Anglo-Swiss multinational that developed the mine. China is the world's largest consumer of copper, which ranks second behind iron ore among China's metals imports. Due to start production in 2015 at a rate of 450,000 tons a year, Las Bambas aims to mitigate China's dependence on foreign miners.⁴⁷ Assuming the mine operates at full capacity, and that the ores and concentrates are all shipped to China, the mine could account for some 4 to 5 percent of China's imports (based on 2013 import data).^{vi}

Las Bambas adds to a long list of large mining investments by Chinese companies. Mines, along with oil and gas deposits, are the leading source of China's outbound investments, combining resource security with profit motives. Las Bambas is the biggest acquisition ever by MMG, the Hong Kong-list offshore arm of Minmetals that aspires to rank among the top diversified miners outside of China. MMG has already invested extensively in copper, zinc, and lead.⁴⁸ MMG outbid not only a consortium of Canadian companies, but also a fellow Chinese company, the aluminum giant Chinalco.⁴⁹

The fact that this deal is occurring in the copper sector enhances its significance. The Chinese government is intent on shedding excess capacity in resource-intensive heavy industries, with a strong eye toward metals producers. But as the economist Dambisa Moyo points out in her book *Winner Takes All*, not all metals are the same. Steel and aluminum, she argues, will be in excess in the years to come, as China's urbanization drive winds down. By contrast, copper is used in products that will continue to be in high demand, including transmission cables, home appliances, semiconductors, and machinery. Moyo predicts China's demand for copper to grow by 6 percent a year in 2009-2025, with its share of world consumption to rise from 38 percent to 55 percent.⁵⁰

While iron ore and bauxite are fairly abundant on the world market, copper is increasingly in short supply. Fully four-fifths of copper finds in the period 2000-2010 were "blind"—discovered by testing beneath the earth's surface where mineral is harder to access. The share of mines that are high- and medium-risk is increasing. Existing mines also face operational problems due to under-investment; copper reserves are smaller and less well-understood than for iron ore and bauxite, which creates uncertainty for long-term investments. The quality of mined copper has declined, with the percentage of copper found in each metric ton of mineral expected to fall from 1.5 percent to 1 percent in 1980-2020.⁵¹

The net outcome of these supply-demand dynamics, Moyo argues, is that copper will be among the global metals in shortest supply by the year 2020 (see table 3).⁵²

^{vi} This calculation is based on the approximately 10 million tons of copper ore and concentrates that China imported last year. The trade figures are from the China General Administration of Customs, via CEIC data.

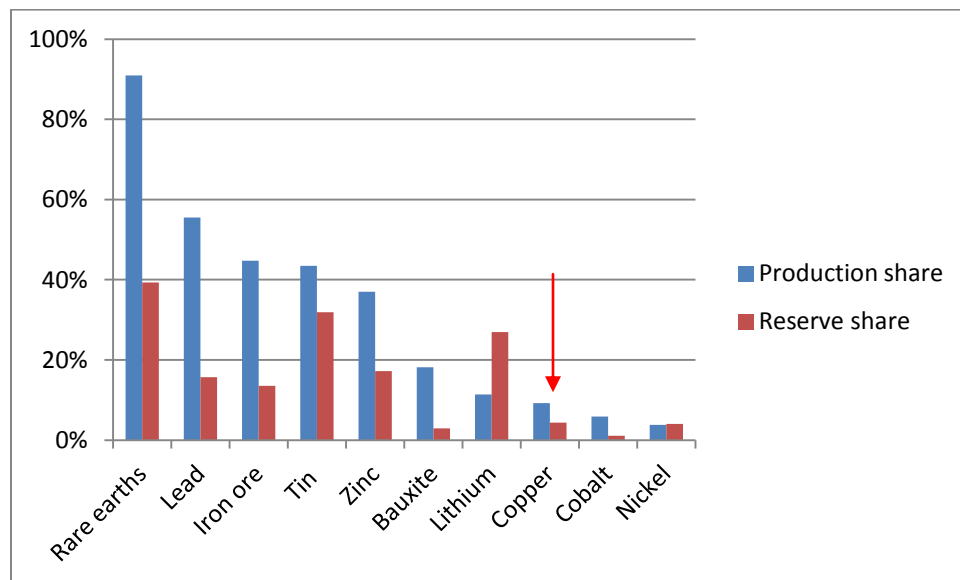
Table 3: Forecast of Future Global Commodity Imbalances by 2020

Commodity	Some uses	Volume (kt)			Supply-demand ratio
		Demand (2020F)	Supply (2020F)	Deficit/surplus (2020F)	
Copper	Wiring, piping	34,958	18,098	(16,860)	0.52
Lead	Batteries, weights, solders, bullets	13,712	4,205	(9,507)	0.31
Zinc	Galvanization, rust prevention	17,627	11,293	(6,334)	0.64
Nickel	Magnets, rechargeable batteries	2,326	2155	(171)	0.93
Aluminum	Packaging, transportation	72,264	134,517	62,253	1.86

Source: Adapted from Moyo, *Winner Takes All*, p.118.

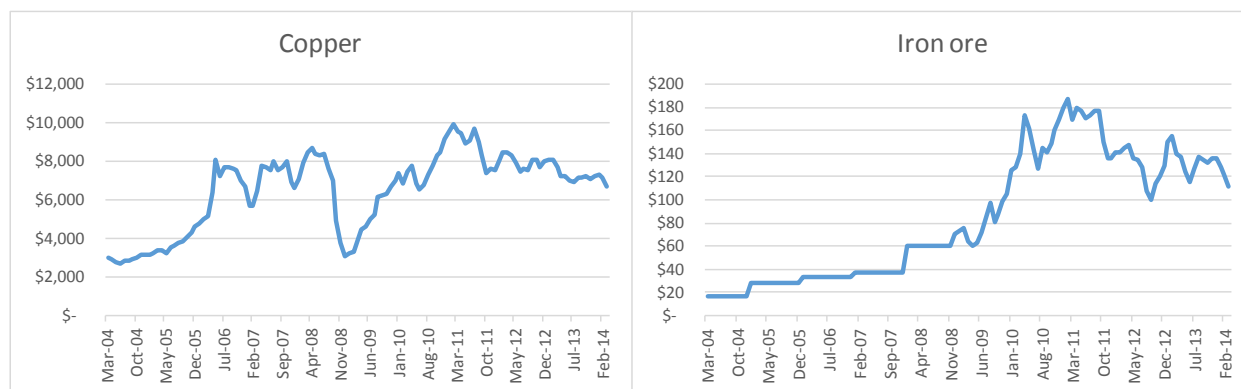
From China’s perspective, dependence on an international market for copper is risky. Unlike iron ore (which until 2009 still relied on annual benchmark prices set by the largest iron miners and steel mills) copper prices have been set since the 1970s via exchange-traded indices, similar to petroleum, which makes them susceptible to speculative financial flows. China only accounts for 9.2 percent of world production and 4.3 percent of world reserves of copper. That is lower than for most other metals (see figure 8). At present, China’s copper prices have been affected by the general slump in the mining sector (see figure 9). However, should prices rise again, domestic copper production cannot act as an adequate buffer for downstream industries that depend on an affordable copper supply.

Figure 8: China’s Share of Global Production and Reserves of Select Metals, 2013 (share, %)



Source: U.S. Geological Survey, own calculations.

Figure 9: Copper and Iron Ore Prices, March 2004 – March 2014 (US\$)



Source: World Bank, via IndexMundi.

Copper has in fact been the leading source of China’s global mining investments, if measured by the number of deals. But it has lagged iron ore in investment value. That reflects different market dynamics. Iron ore projects tend to be very large, given the low value-to-volume ratio of the ore, necessitating large investments to achieve economies of scale. Most of China’s mining investment is in Australia, due to its proximity to the mainland. Copper deposits, on the other hand, are distributed widely and production is fairly diversified (unlike iron ore, where three large companies—BHP Billiton, Rio Tinto, and Vale do Rio Doce—account for some two-thirds of global output).

Due to a higher value-to-volume ratio, copper projects can be viable on a smaller scale and the ore shipped to China at a lower cost. Scores of Chinese mining companies large and small have invested in copper mines across the world. A prominent example is the Zambian Copperbelt, where a subsidiary of China Nonferrous Metals Corp. acquired mining rights in the mid-2000s, leading to the establishment by China of a Special Economic Zone.

Las Bambas is in many ways a game-changer, because it signals that China is willing to “go big” on copper. Although the Chinese consortium will need to invest a further \$2.4 billion into developing the mine,⁵³ buying from a well-established Western miner could prove to be a prudent strategy. The project is located in Peru, a politically stable country that has a free trade agreement with China and already hosts several Chinese mining ventures. Las Bambas is basically a “distressed asset”: due to a prolonged slump in the mining sector, Glencore was forced to sell off a part of its mining portfolio in order to deleverage its balance sheet.⁵⁴ Minmetals incurs neither the technical risk of geological prospecting nor the political risk of buying equity in a large mining firm, a strategy that has met with resistance in Canada and Australia. Minmetals in the mid-2000s pursued a strategic partnership with Chile’s Codelco, the world’s largest copper miner, but the relationship soured after Codelco refused to give Minmetals an equal stake in a Chilean mine.⁵⁵

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The U.S.-China Economic and Security Review Commission was created by Congress to report on the national security implications of the bilateral trade and economic relationship between the United States and the People’s Republic of China. For more information, visit www.uscc.gov or [join the Commission on Facebook!](#)

This report is the product of professional research performed by the staff of the U.S.-China Economic and Security Review Commission, and was prepared at the request of the Commission to support its deliberations. Posting of the report to the Commission's website is intended to promote greater public understanding of the issues addressed by the Commission in its ongoing assessment of U.S.-China economic relations and their implications for U.S. security, as mandated by Public Law 106-398 and Public Law 108-7. However, it does not necessarily imply an endorsement by the Commission, any individual Commissioner, or the Commission's other professional staff, of the views or conclusions expressed in this staff research report.

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