U.S.-China Economic and Security Review Commission

Monthly Analysis of U.S.-China Trade Data

November 4, 2015

Highlights of this Month's Edition

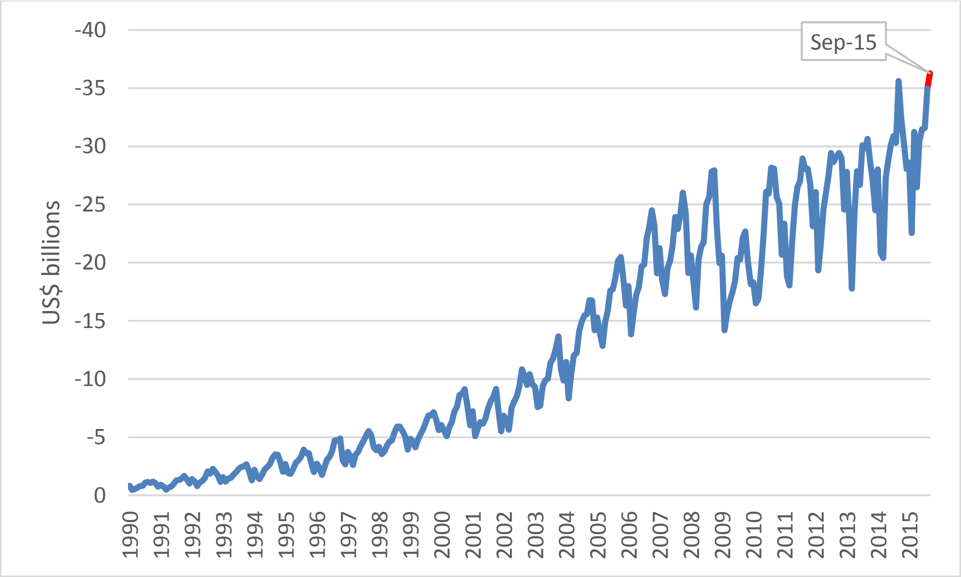
- **Bilateral trade:** In September, the U.S. deficit in goods trade with China hit $36.3 billion, the highest monthly deficit on record; quarterly service imports from China reach highest level on record, weakening the U.S. trade in services surplus.
- **Policy trends in China's economy:** Fifth Plenum sets course for the 13th Five-Year Plan; President Xi's state visit to the UK nets expanded international role for the RMB.
- **Quarterly review of China's economy:** China's GDP grew 6.9 percent in third quarter; government moves to support the economy.
- **Sector spotlight – Aluminum:** Chinese subsidies and preferential policies have created overcapacity that has lowered global prices and eroded the profitability of the U.S. aluminum sector.

Bilateral Trade

U.S. Goods Deficit Hits Historical Monthly High

The monthly U.S. trade deficit in goods with China registered $36.3 billion in September, the highest monthly deficit on record and an increase of 3.8 percent from August (see Figure 1). The deficit reached $273.6 billion in the first three quarters of 2015, an increase of 8.6 percent from the same period last year. Despite this, monthly exports and imports registered nearly equal growth rates of 1.0 percent and 1.8 percent, respectively—a positive development in contrast to earlier in 2015 when imports from China were outpacing U.S. exports by a large margin.

Figure 1: Monthly U.S. Trade Deficit with China in Goods, 1985-2015



Source: U.S. Census Bureau, NAICS database (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, November 2015). *http://www.census.gov/foreign-trade/balance/c5700.html.*

In the third quarter of 2015, the U.S. trade deficit with China in goods increased 16.3 percent quarter-on-quarter and 6.4 percent year-on-year (see Table 1) to $130.9 billion, the highest quarterly deficit this year. The large quarter-on-quarter increase was due primarily to a $14.7 billion jump in imports between the second and third quarters.

Table 1: Quarterly U.S. Goods Trade with China, 2014-2015

(US$ billions)

	2014		2015		
	Q3	Q4	Q1	Q2	Q3
EXPORTS	28.2	37.1	28.1	27.8	28.1
IMPORTS	124.9	127.9	110.5	116.2	130.9
BALANCE	-96.6	-90.8	-82.4	-88.4	-102.8

Source: U.S. Census Bureau, NAICS database (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, November 2015). *http://www.census.gov/foreign-trade/balance/c5700.html*.

Top Exports and Imports

Transportation equipment topped the list of U.S. exports to China again in September (see Table 2). At $2.54 billion, these shipments continued to account for over one quarter of total exports and increased 11.4 percent year-on-year. U.S. exports of computer and electronic products and other machinery also increased at 8.7 percent and 9.4 percent year-on-year, respectively. U.S. agricultural exports replaced waste and scrap as the fifth largest U.S. export to China, registering a value of $731 million in September. Computer and electronic products remained the largest import category, making up over one-third of total U.S. imports from China and increasing 2.8 percent year-on-year.

Table 2: U.S. Trade with China: Top Five Exports and Imports

(US$ thousands)

U.S. Top-Five Exports to China	Exports	Share of total (%)	Change over Sept'14 (%)	U.S. Top-Five Imports from China	Imports	Share of total (%)	Change over Sept'14 (%)
Monthly (September 2015)				*Monthly (September 2015)*			
Transportation Equipment	2,540,570	27.0%	11.4%	Computer and Electronic Products	16,469,958	36.0%	2.8%
Computer and Electronic Products	1,491,025	15.8%	8.7%	Miscellaneous Manufactures	4,610,744	10.1%	9.1%
Chemicals	1,008,294	10.7%	-6.9%	Electrical Equipment	4,084,847	8.9%	4.7%
Machinery, Except Electrical	739,933	7.9%	9.4%	Apparel and Accessories	3,708,012	8.1%	-1.9%
Agriculture Products	731,329	7.8%	0.2%	Machinery, Except Electrical	2,566,834	5.6%	4.3%
Other	2,912,513	30.9%	-	Other	14,260,226	31.2%	-
Total	9,423,664	**100.0%**		**Total**	45,700,621	**100.0%**	
Year-to-date (thru Sept 2015)				*Year-to-date (thru Sept 2015)*			
Transportation Equipment	19,516,067	23.2%		Computer and Electronic Products	123,067,421	33.0%	
Computer and Electronic Products	12,844,699	15.3%		Electrical Equipment	33,181,771	8.9%	
Chemicals	10,109,606	12.0%		Miscellaneous Manufactures	30,030,639	8.0%	
Agriculture Products	7,390,606	8.8%		Apparel and Accessories	26,562,926	7.1%	
Machinery, Except Electrical	7,299,685	8.7%		Machinery, Except Electrical	24,724,558	6.6%	
Other	26,832,835	31.9%	-	Other	135,798,575	36.4%	-
Total	83,993,498	**100.0%**		**Total**	373,365,890	100.0%	

Source: U.S. Census Bureau, NAICS database (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, November 2015). *http://censtats.census.gov/naic3_6/naics3_6.shtml.*

Advanced Technology Products

The U.S. trade deficit with China in advanced technology products (ATP) reached $84.8 billion in the first three quarters of 2015, only a slight increase of 0.3 percent from the same period last year (see Table 3). The deficit continues to be driven primarily by information and communication (ICT) products, which accounted for nearly 90 percent of all ATP imports from China in the first three quarters of 2015. Meanwhile, U.S. aerospace products continue to top the list of ATP exports, accounting for nearly half of U.S. ATP exports to China so far this year.

Table 3: Advanced Technology Products trade, Jan-Sept 2015

(US$ millions)

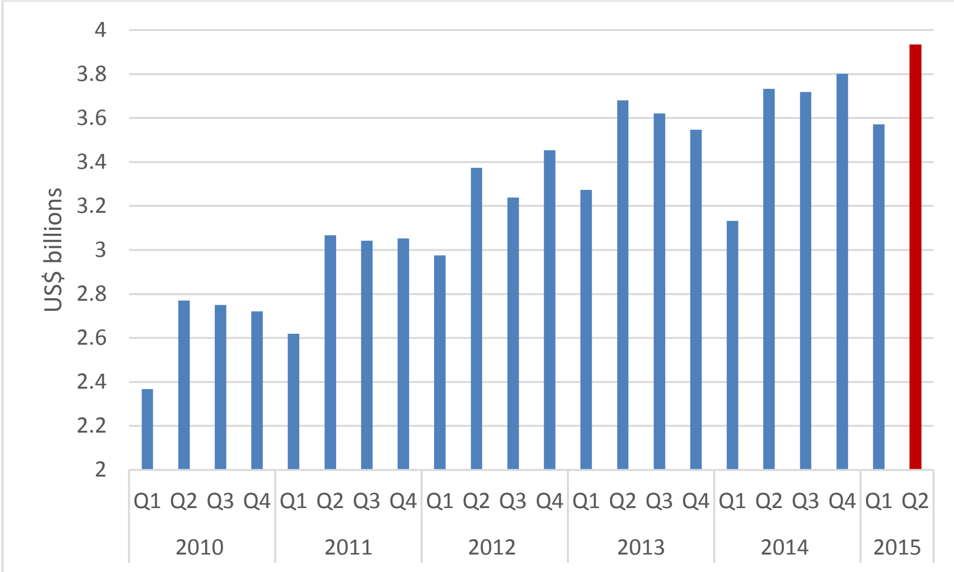
	Monthly			Cumulative year-to-date			
	Exports	Imports	Balance Sept 2015	Exports	Imports	YTD Balance Sept 2015	YTD Balance Sept 2014
TOTAL	**2,977**	**15,076**	**-12,099**	**25,528**	**110,355**	**-84,827**	**-84,580**
(01) Biotechnology	50	12	38	603	87	516	296
(02) Life Science	309	207	102	2,417	1,785	632	636
(03) Opto-Electronics	45	794	-749	360	4,960	-4,600	-4,625
(04) Information & Communications	452	13,552	-13,100	3,836	98,985	-95,149	-92,483
(05) Electronics	500	310	190	4,455	2,699	1,756	1,575
(06) Flexible Manufacturing	239	85	154	2,111	711	1,400	1,007
(07) Advanced Materials	15	31	-16	150	312	-162	-68
(08) Aerospace	1,363	67	1,296	11,406	663	10,743	9,250
(09) Weapons	0	18	-18	2	108	-106	-95
(10) Nuclear Technology	4	0	4	188	45	143	-75

Source: U.S. Census Bureau, U.S. Trade with China in Advanced Technology Products (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, November 2015). *http://www.census.gov/foreign-trade/statistics/product/atp/2015/09/ctryatp/atp5700.html*.

U.S.-China Trade in Services

The U.S. trade surplus with China in services dropped 39.6 percent between the first and second quarters of 2015 (latest data available), bringing the quarterly surplus down to $5.57 billion, a decline of $3.6 billion. The fall in the surplus was due primarily to a 25 percent quarter-on-quarter reduction in service exports to China, likely caused by China’s slowing economy. The service sector that suffered the largest quarterly loss in exports to China was travel, which declined 43.9 percent quarter-on-quarter. Meanwhile, service imports from China continued to rise gradually, increasing 10.17 percent quarter-on-quarter and 5.41 percent year-on-year. Notably, service imports from China reached their highest quarterly level on record in the second quarter of 2015, registering at $3.93 billion (see Figure 2).

Figure 2: Service Imports from China, 2010-2015



Source: U.S. Department of Commerce – Bureau of Economic Analysis, U.S. Trade in Goods and Services by Selected Countries and Areas, 1999-Present (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, October 2015).

Policy Trends in China's Economy

Fifth Plenum Sets Course for 13th Five-Year Plan

The Fifth Plenum of the 18th Communist Party Central Committee (CPCC), which ran October 26–29, laid out the broad goals of China's 13th Five-Year Plan (2016–2020) for national and social development. The Fifth Plenum meetings outlined the country's economic objectives and policy approach through 2020, although these policies will not be adopted officially until early 2016. A communiqué from Beijing, released at the completion of the Plenum, yielded largely expected announcements on social issues, economic growth, and personnel changes within the CPCC.[1] The government unveiled a 6.5 percent gross domestic product (GDP) growth target for the next five years—an ambitious goal given the declining dynamism in China's economy. Outcomes of the Fifth Plenum session include:

- **Ending the "one-child" policy:** In the most notable announcement from the meetings, China declared the end of its decades-old "one-child" policy, allowing couples to have two children instead of one. The law limiting couples to one child was introduced in 1980 to curb the country's rapidly increasing population, but has led to a shrinking labor force[*] and, because boys are the culturally favored gender, dramatically skewed gender imbalances.[†2] The policy has been criticized for imposing strict fines on couples with more than one child and utilizing severe measures to limit the number of children a woman could have, including sterilization and forced abortion.[3] The policy included a number of exceptions, including for couples living in rural areas whose first child was a girl, and ethnic minorities were exempt.[4] China began easing the one-child policy in 2014, when the law was revised to allow couples to have two children if one spouse was an only child.[5] The economic costs of childrearing have deterred many Chinese families from taking advantage, however; since easing the restrictions, fewer than 1.5 million couples—only 12 percent of those eligible—have applied to have a second child.[6] Despite the decision to end the policy, the high cost of raising a child—estimated at more than $3,600 a

[*] The size of China's working population (ages 15–59) has fallen by 9.6 million workers since 2012. Bloomberg, "China's One-Child Policy Backfires as Labor Pool Shrinks Again," January 20, 2015. *http://www.bloomberg.com/news/articles/2015-01-20/china-s-one-child-policy-backfire-deepens-as-labor-pool-shrinks*.

[†] In 2008, the number of boys in China exceeded the number of girls by 1.22 to 1. Bill Powell, "Gender Imbalance: How China's One-Child Law Backfired on Men," *Newsweek,* May 28, 2015. *http://www.newsweek.com/2015/06/05/gender-imbalance-china-one-child-law-backfired-men-336435.html*.

year between birth and age 18—could inhibit any significant demographic shifts in the short term.[7] The Plenum announcement did not specify when the new policy would be put in place, but stated the decision was intended to "actively take action on [the] aging population."[8]

- **Continuing economic rebalancing:** China reaffirmed its commitment to economic reform, emphasizing a consumption- and innovation-led growth model to sustain "medium-to-high pace" economic development through 2020.[9] China will aim to double its GDP and the per capita income of urban and rural residents from 2010 levels by 2020.[10] To double its economy to $12 trillion by 2020, official statements from the Chinese government have set target GDP growth at 6.5 percent annually, down from the 7 percent annual growth target in the 12th Five-Year Plan. China, which is in the midst of its worst period of economic growth since 2009, unveiled vague plans to boost manufacturing and increase investments in research and development.[11] The communiqué also called for continuing incremental market liberalization, reducing government interference in price-setting, and moving toward a more sustainable growth model.[12] According to the Plenum announcements, restrictions on resource distribution will be lifted, limiting the state's tight control over resource allocation.[13]
- **Strengthening the social system:** Beijing announced plans to expand insurance coverage, reduce restrictions on urban housing, and increase access to education. The communiqué included plans to provide universal social security coverage for the country's aging population[*] through increased state funding, though no specific spending figures—public or private—were proposed.[14] The announcement also set goals for improving the welfare system, including deepening health care reform to provide universal coverage for all rural and urban residents.[15] Furthermore, vague plans to ease limits on the household registration system, known in China as the *hukou* system, would address the country's rapid urbanization and allow more Chinese citizens to gain residence in urban areas.[16] To improve education quality and promote balanced development, China also announced plans to promote high school and primary education for all citizens and exempt poor families from tuition fees for secondary education.[17]
- **Enforcing strict environmental standards:** China reiterated its pledge to address climate change, laying out plans for strict environmental regulations and the transition to alternative energy sources.[18] In particular, China signaled plans to limit coal consumption and address shortcomings in water, air, and soil pollution standards.[19] To bolster local government accountability for sustainable development, the communiqué indicated government officials will be held responsible for environmental damage done in their jurisdiction.[20] Grant permissions for large construction and urban planning projects will also be reformed to adhere to environmental regulations.[21]
- **Personnel changes:** Ten CPCC members—many of whom are under investigation for corruption charges—were dismissed from their positions. Among the Central Committee members or alternate members removed from their posts were Ling Jihua, an advisor to former president Hu Jintao; Zhou Benshun, a former party secretary in Hebei Province; and Yang Dongliang, the former director of the State Administration of Work Safety. All three are subjects of ongoing corruption investigations.[22] To fill the ten CPCC vacancies, three local officials—Liu Xiaokai of Guizhou Province, Chen Zhirong of Hainan Province, and Jin Zhenji of Jilin Province—were announced as new members during the Plenum meetings.[23] Some anticipated personnel changes did not occur: Zhang Youxia, who many predicted would be promoted to Central Military Commission vice chairman, remains director of the general armament department and one of President Xi Jinping's most trusted advisors.[24]

President Xi on State Visit to United Kingdom

President Xi traveled to London this October for his first state visit to the United Kingdom where he met with Prime Minister David Cameron, addressed the House of Lords and House of Commons, was introduced to the royal family, and toured the facilities of Chinese and UK companies. UK and international media sources remarked on, and in

[*] By 2050, Chinese residents over 65 years old will account for 39 percent of the total population older than 15, up from 13 percent in 2015. Gabriel Wildau, "China Pension Reform Targets Civil Servant Privileges," *Financial Times*, January 15, 2015. *http://www.ft.com/intl/cms/s/0/3141eb64-9c97-11e4-a730-00144feabdc0.html#axzz3qLStXzQg*.

some cases criticized, the lavish welcome offered to President Xi by Cameron's administration.[25] The two sides agreed to increase investment and economic ties between London and Beijing, taking several steps to internationalize the renminbi (RMB) and establish London as a hub for China's financial needs. The United Kingdom also granted access to Chinese investment in its nuclear sector, which may empower Chinese nuclear firms to become more globally competitive. The two sides also advocated for closer financial and trade ties between Europe and China, and arrived at a cybersecurity agreement very similar to the one reached between President Obama and President Xi in September. Human rights issues, while frequently featured in media coverage, did not appear to be a central part of the official agenda.

UK-Chinese Investment

Increasing trade and investment appeared to be the principle purpose of President Xi's visit. At the close of the visit, the UK government announced that up to $60 billion of Chinese investment into the United Kingdom had been secured, although much of this investment included commitments that had previously been announced.[26] In particular, President Xi and Prime Minister Cameron announced what they considered their "flagship" cooperation project: Chinese investment in the Hinkley Point nuclear power station.[27] China General Nuclear (GCN), a state-owned nuclear power construction company, will invest $9 billion for a one-third stake in the project.[28] Hinkley Point is the first new nuclear power plant in the United Kingdom in at least a decade, and GCN is partnering with Électricité de France (EDF), a French nuclear supplier, to construct the plant.[29] EDF will hold the majority stake in the project.[30]

While Hinkley Point represents a foothold in the UK market for Chinese nuclear suppliers, of greater consequence is the Chinese bid to construct the reactor for the upcoming Bradwell plant. CGN is currently slated to take a controlling stake in the Bradwell nuclear plant east of London. The Bradwell plant will be the first plant in a developed country to run a Chinese-designed reactor.* A successfully operating Bradwell plant would present CGN as a safe and effective nuclear supplier, as the facility would have to comply with the United Kingdom's comprehensive nuclear safety regulations. UK Energy Secretary Amber Rudd noted, "They (CGN) very much want to have their design up and running in the UK…. Because we have such tough standards of regulation everyone can have confidence they are safe and show that they have a great operation to take elsewhere."[31] A safely run CGN plant would establish the company as a legitimate global competitor for nuclear contracts. Some media sources presented Chinese investment in Hinkley as a quid pro quo for the contract to build the Bradwell plant.[32]

Chinese reactor designs are largely based on Western nuclear designs which have occasionally been acquired through technology transfer agreements.[33] For example, the Chinese CAP1400 reactor, is based on Westinghouse's AP1000 reactor.[34] Westinghouse delivered plans for the AP1000 to a Chinese partner in 2007 as part of a technology transfer to gain greater access to the Chinese market.[35] Having incorporated Western technology, Chinese nuclear firms are now poised to offer domestically-designed reactors on the international market.

Internationalization of the RMB, Closer Economic Ties

Prime Minister Cameron and President Xi took steps to further RMB internationalization and establish London as its premier trading center outside of Asia. Since 2012, Chinese banks have been issuing RMB-denominated bonds in London with the backing of the UK Treasury. The UK government seeks to establish London's financial sector as the leading edge of trade in RMB-denominated assets outside of Asia, and became the first foreign market to raise these assets for a Chinese bank outside of Hong Kong.[36] From 2012 to 2014, at least four RMB bonds have been raised in London, often with the participation of American banks.[37] During President Xi's visit, the People's Bank of China (PBOC) issued its first overseas bond for $4.7 billion in London.[38] Both President Xi and Prime Minister Cameron welcomed this development and supported further growth in London's RMB-based financial market.[39] At the same time, Prime Minister Cameron supported the inclusion of the RMB in the International

* CGN has also bid to develop a nuclear plant at Sizewell in Suffolk with EDF. However CGN will maintain a minority position in this plant and it does not appear that it will use Chinese reactor technology. Emily Gosden, "New Nuclear Plant at Hinkley Point to Begin Construction 'Within Weeks,'" *Telegraph,* October 21, 2015. *http://www.telegraph.co.uk/news/earth/energy/nuclearpower/11945485/Nuclear-go-ahead-construction-of-new-plant-to-begin-within-weeks.html*.

Monetary Fund's (IMF) special drawing rights basket.[40] The IMF is considering including the RMB in its basket of reserve currencies that member countries can draw on for international reserves. If the IMF approves the RMB as a reserve currency, the value of RMB assets will likely increase as central banks add them to their reserves.[41] Last October the United Kingdom further pushed for international use of the RMB by issuing a $460 million UK sovereign RMB-denominated bond for its own reserves, becoming the first Western country to do so. Chancellor of the Exchequer George Osborne noted that in order to support investment and employment, it was important to "make sure China's currency is used and traded here."[42]

Prime Minister Cameron and President Xi also announced a feasibility study for a connection between the London and Shanghai stock exchanges, and called for the launch of a feasibility study for a China-EU free trade agreement.[43] As part of the ongoing negotiations for an EU-China investment treaty, Chinese negotiators reportedly pushed for a full free trade agreement in 2014. Prime Minister Cameron has supported such an agreement in the past; currently, however, both sides have only agreed to examine the feasibility of a free trade agreement.[44] Significant practical problems may limit the feasibility of the stock connect program—notably the significant time difference between Shanghai and London and the requirement that both markets be open simultaneously for settlements.[45]

Cybersecurity

Following the September U.S.-China agreement prohibiting economic cyber theft, the United Kingdom and China agreed to a nearly identical commitment, with each side promising not to support or engage in online theft of intellectual property, trade secrets, or confidential business information.[46] The agreement does not apply to cyber threats regarding non-economic information. In contrast to the U.S. visit, there was no talk of UK economic sanctions prior to President Xi's arrival. UK firms have been the target of many online attacks.

Quarterly Review of China's Economy

China's Third Quarter Growth Higher than Expected at 6.9 Percent

In the third quarter of 2015, China's GDP growth continued the slowing trend set in the first half of the year—7 percent in each of the first two quarters—to reach 6.9 percent on an annualized basis, the weakest rate since early 2009. Given that China's economy experienced a host of economic ills in the third quarter, including the bursting of the stock market bubble,* some economists questioned the validity of the official GDP data.[47]

While 6.9 percent growth is within the official GDP target of "approximately 7 percent" for 2015,[48] actions by the Chinese government suggest a high degree of concern over the economy's deceleration. The Chinese government started introducing measures to boost growth even before the government's intervention during the stock market turmoil. The PBOC has attempted to stimulate the economy by lowering interest rates six times since November 2014 to encourage borrowing; it has also reduced banks' reserve requirement ratios (RRR) four times since February to loosen lending.[49]

In addition to the broad-based credit loosening, which tends to favor the inefficient state-owned sector, China's government is introducing measures more likely to help small and private enterprises. On October 23, the PBOC announced it was eliminating the ceiling on bank deposit interest rates for all maturities.[50] This is the latest in a series of moves by the government to liberalize interest rates: Beijing previously removed the floor on lending rates, and in August, the PBOC removed the ceiling for depots above one year. In principle, liberalized deposit rates means Chinese households—which long have been subject to financial repression† benefiting the state sector—could enjoy higher earnings on their savings. However, fearing competition for depositors could destabilize China's banking sector, the PBOC said it will continue to manage rates.[51]

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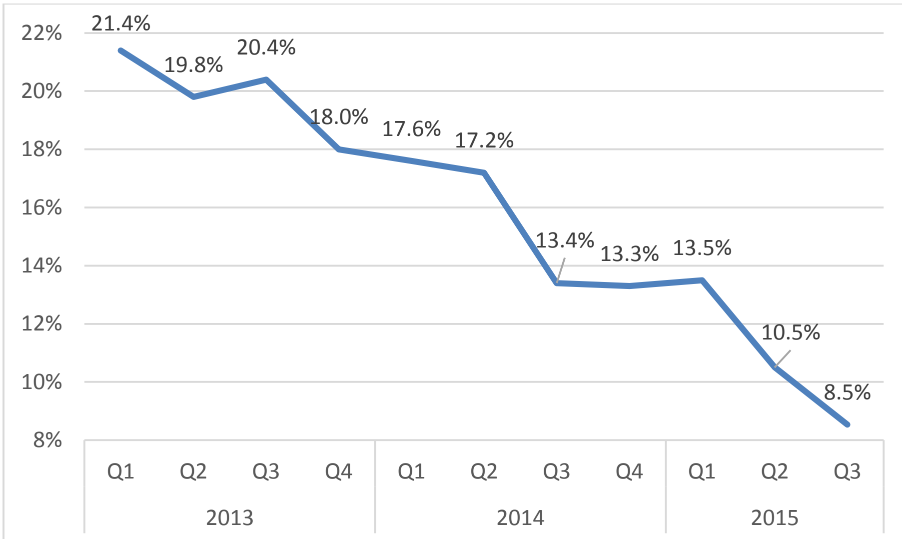
* For more on the stock market collapse and the government's rescue efforts, see U.S.-China Economic and Security Review Commission, *Monthly Analysis of U.S.-China Trade Data*, July 7, 2015. *http://www.uscc.gov/trade-bulletin/july-2015-trade-bulletin*.

† The Chinese government's control over deposit rates had often meant interest earned by depositors was below the inflation rate—a negative rate of return. This system hugely benefitted state-owned enterprises and other favored projects, which received cheap loans from state-owned banks. For more, see Nicholas R. Lardy, "Financial Repression in China," *Peterson Institute for International Economics*, September 2008. *http://www.iie.com/publications/interstitial.cfm?ResearchID=999*.

Fixed asset investment, a key pillar of China's traditional growth model, expanded just 8.5 percent year-on-year in the third quarter (see Figure 3). In addition, China's disposable income per capita increased just 7.7 percent year-on-year in the third quarter, barely up from 7.6 percent in the second quarter.[52]

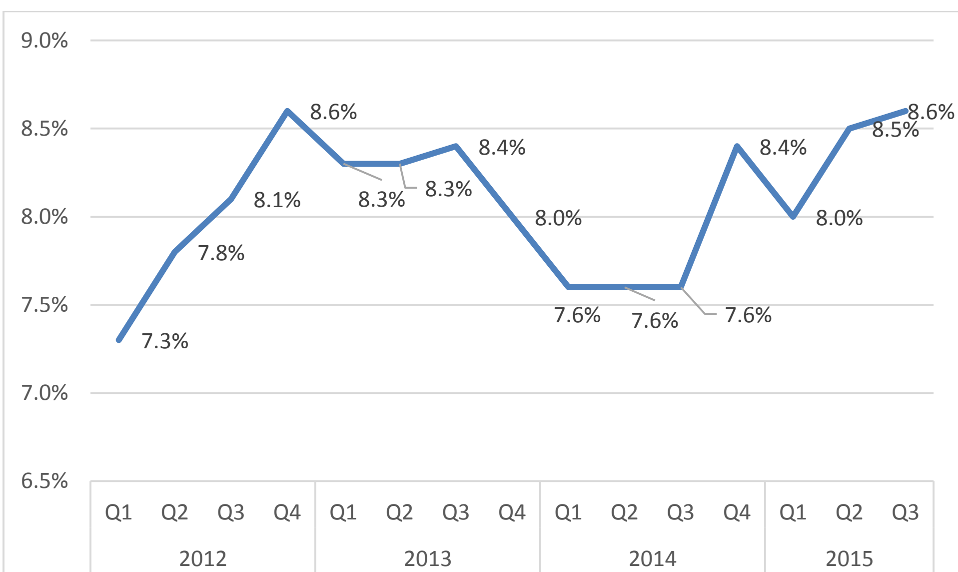
Figure 3: Growth in Fixed Asset Investment
(quarterly, year-on-year)



Source: China's National Bureau of Statistics via CEIC data.

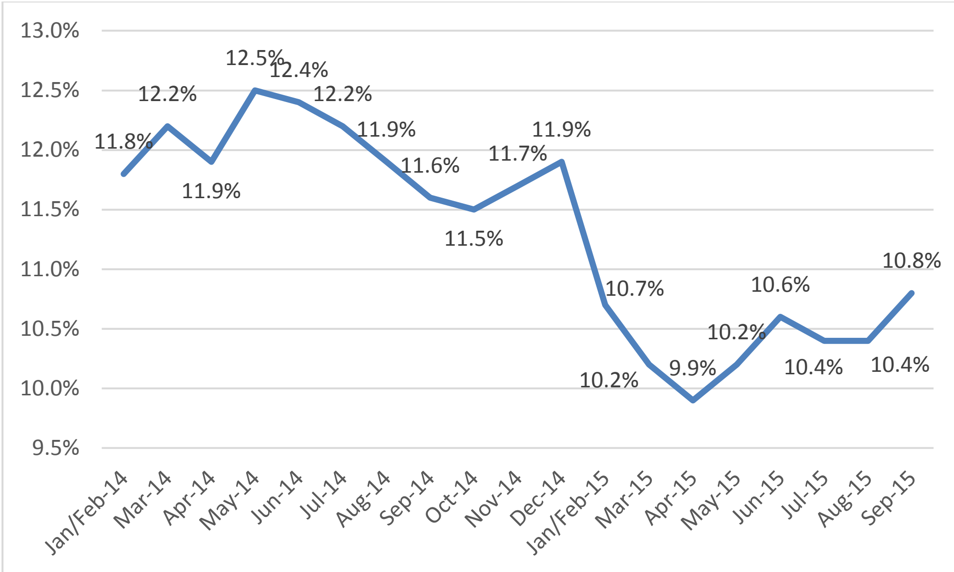
The stronger-than-anticipated third quarter was supported in large part by a small recovery in consumption and a resilient service sector, which grew 8.6 percent, up from 8.5 percent in the second quarter (see Figure 4). Retail sales of domestic goods and services, a proxy figure for overall consumption, grew at 10.8 percent year-on-year in September 2015, up from just 9.9 percent in April 2015 and 10.4 percent in August 2015 (see Figure 5).

Figure 4: Growth in the Service Sector
(quarterly, year-on-year)



Source: China's National Bureau of Statistics via CEIC data.

Figure 5: China Retail Sales of Consumer Goods
(monthly, year-on-year)

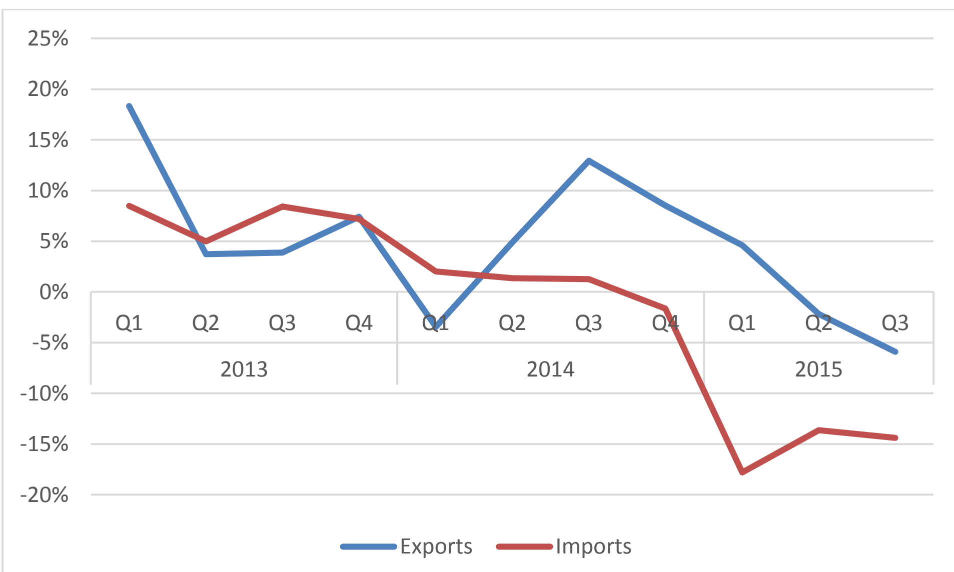


Source: China's National Bureau of Statistics via CEIC data.

Like investment, manufacturing activity has been deteriorating. The Caixin/Markit unofficial estimate shows China's manufacturing Purchasing Managers' Index (PMI) at 48.3 in October, up from 47.2 in September 2015 (a reading above 50 points distinguishes growth from contraction).[53] The September PMI was the lowest reading since March 2009 and, together with an ongoing fall in factory employment, raises fears that China's slowdown might be worsening.[54]

Adding to the woes were Chinese global exports, which contracted 5.9 percent year-on-year in the third quarter of 2015 (see Figure 6). Coupled with a contraction of nearly 14.5 percent for imports compared to the third quarter of last year, China's production rate is unlikely to increase in the short term.

Figure 6: Growth in China's Exports and Imports
(quarterly, year-on-year)



Source: China's Administration of Customs via CEIC data.

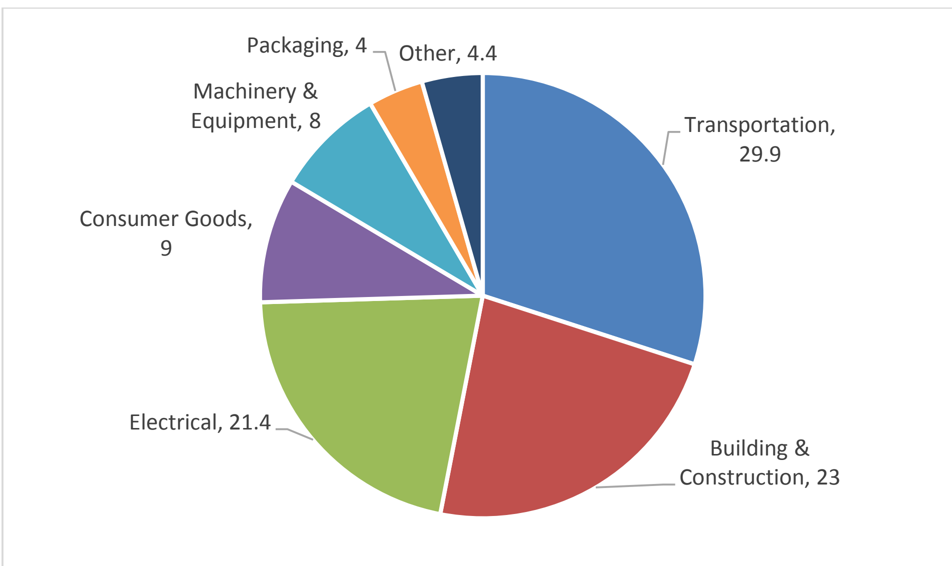
Sector Spotlight: U.S. Aluminum Sector under Pressure from China

Strong Chinese government support for its domestic aluminum sector has created vast overproduction, lowering global prices and squeezing the profitability of U.S. aluminum firms. Aluminum prices have dropped 27 percent over the past year and are at their lowest in the last six years.[55] While the U.S. and other global aluminum firms are restructuring and cutting back production to minimize financial losses, the Chinese government is stepping in to expand capacity and encourage exports, placing the entire U.S. aluminum smelting system at risk.[56] In response to the deluge of subsidized Chinese exports, the U.S. Department of Commerce (DOC) has applied antidumping and countervailing duties on specific Chinese aluminum products, but improper labeling and transshipping of products are circumventing these protections.

China's Emergence as a Major Aluminum Consumer and Producer

In the last 15 years, China has become the world's largest consumer and producer of aluminum, with consumption growing at around 16 percent each year since 2000, compared with only 1 percent annual growth in the rest of the world.[57] Boston Consulting Group attributes China's rising aluminum consumption to its massive investments in real estate and infrastructure and its role as the world's largest assembler and manufacturer of electronic equipment.[58] Aluminum is primarily used in packaging materials, the automotive and transportation sectors, and architecture and building due to its military-grade durability, light weight, strength, resistance to corrosion, and limitless recyclability.[59] In China, buildings and construction account for 23 percent of aluminum consumption, electric cables and equipment for 21.4 percent, and transportation[*] for 29.9 percent (see Figure 7).[60] In 2015, China is expected to account for half of global aluminum consumption.[61] While China's growth has slowed over the last year, it is expected to remain one of the largest drivers of aluminum demand for the next decade, and forecasted to account for 59 percent of global aluminum consumption by 2025.[62]

Figure 7: China's Consumption of Aluminum by Industry, 2013



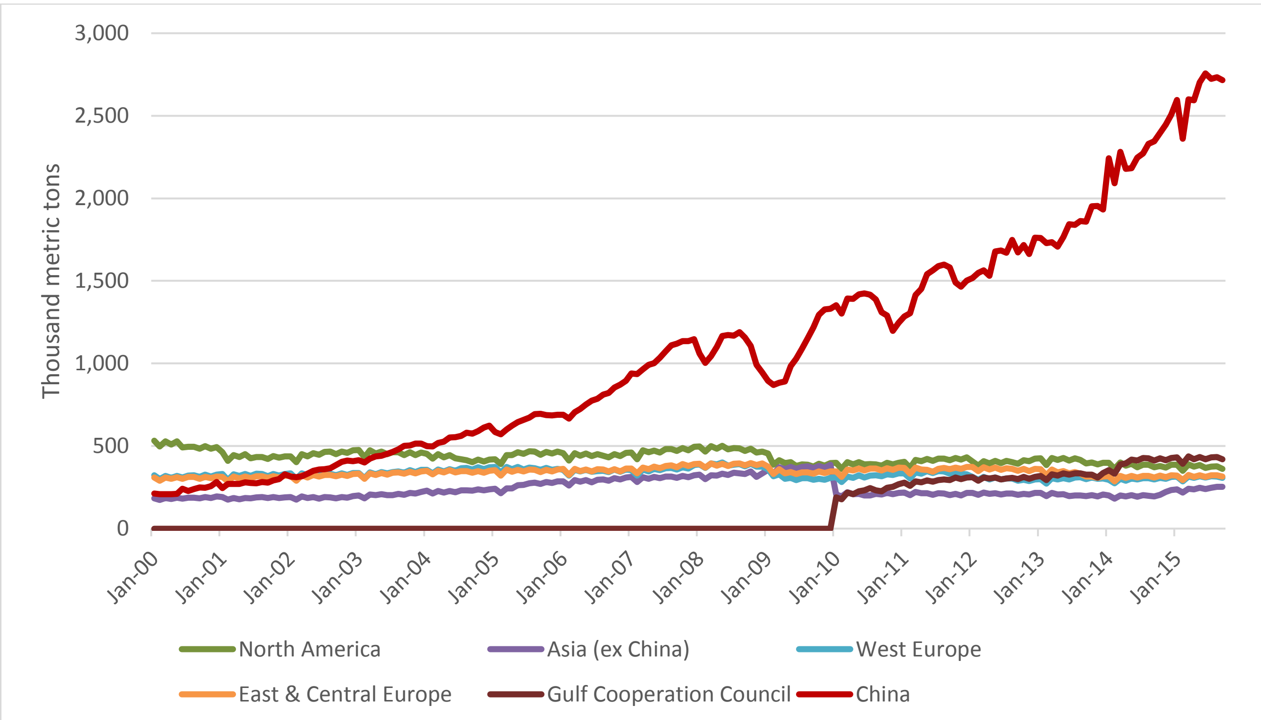
Source: Wood Mackenzie via RUSAL, "China." *http://www.rusal.ru/en/aluminium/key_markets/china.aspx.*

China has rapidly become the world's largest producer of aluminum (see Figure 8).[63] To meet its rising domestic demand and support employment, China's government has been subsidizing the domestic aluminum sector through

[*] For example, around 80 percent of an aircraft's unladen weight is made of aluminum. International Aluminum Institute, "Aluminum in Transport," 2012. *http://transport.world-aluminium.org/index.php?id=93&L=0*.

direct grants, interest free loans, transfers of low cost state-owned land, and preferential regulatory treatment.[64] China's aluminum production has grown over seven-fold from 2.8 million metric tons in 2000 to 23.8 million metric tons in the first nine months of 2015.[65] As of September 2015, China accounts for 54.9 percent of global primary aluminum production.[66] As a result of this expansion in production, China can meet a greater share of its domestic demand. For example, China has gone from importing nearly all of its aluminum sheets for beverage cans in 2009 to producing 40 percent domestically by 2011.[67]

Figure 8: World Aluminum Production by Amount, 2000–September 2015



Note: Data are monthly figures.
Source: International Aluminum Institute, "Primary Aluminum Production," October 20, 2015. *World Aluminum, http://www.world-aluminium.org/statistics/.*

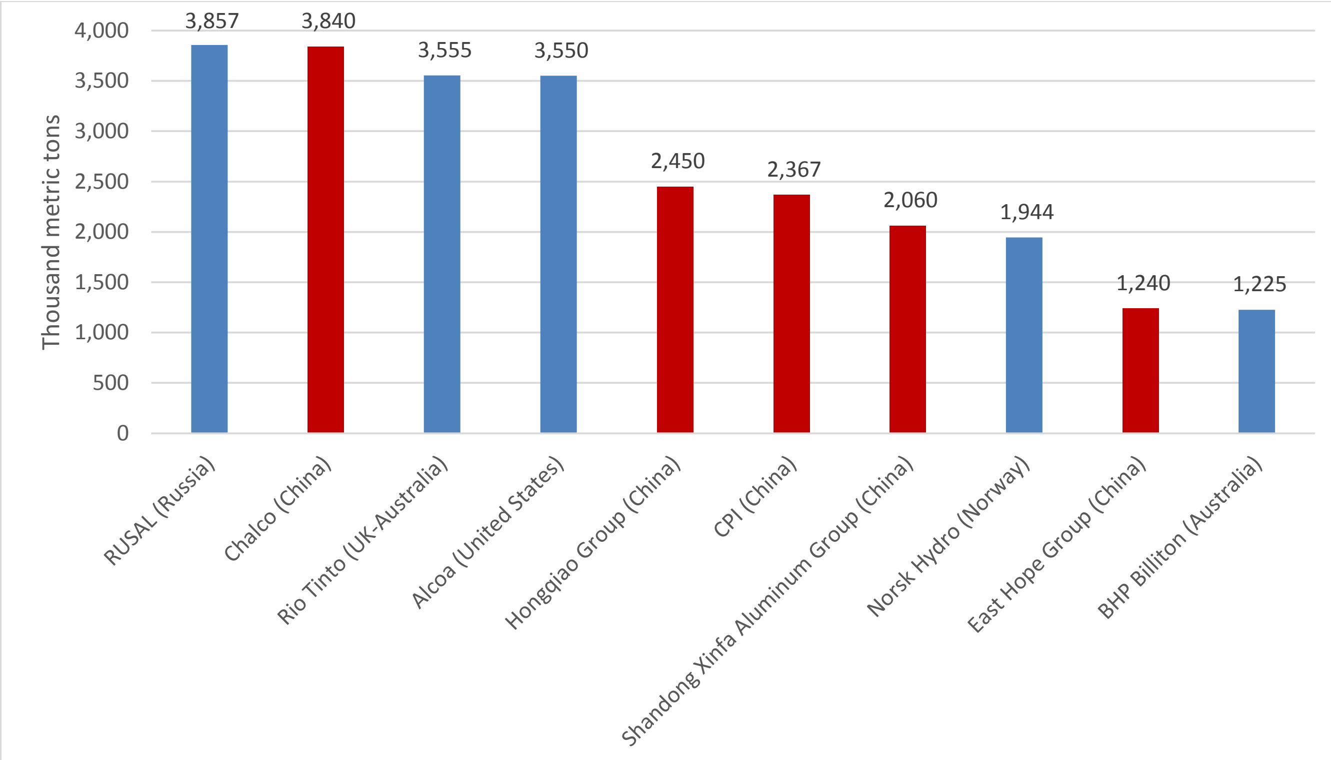
Chinese aluminum firms have also become some of the world's largest producers; of the top ten largest aluminum producers in 2013, half were Chinese firms (Figure 9).[68] The state-owned Aluminum Corporation of China Limited (Chalco)[*] is China's largest aluminum producer and the world's second-largest producer. China Power Investment Corporation (CPI) is also a state-owned enterprise and the world's sixth-largest producer. In September 2015, state-run newspaper *China Daily* announced a proposed merger between CPI's aluminum business and Chinalco that would create the world's largest aluminum firm, with more than 7 million metric tons of annual capacity.[69] This merger is part of a broader Chinese policy to combine state-owned enterprises that are competing in the same industry.[†] However, most of these smelters are losing money. For example, Chinalco's largest smelter, accounting for an eight of production, has recorded $313 million (RMB 1.99 billion) in losses since 2011.[70] Efforts to close costly smelters and reduce overcapacity have been unsuccessful because of local government resistance.[71] In

[*] Chalco was established in September 2001 as a joint stock company. Its parent and holding company is the Aluminum Corporation of China (Chinalco), which is wholly-owned by the State-owned Assets Supervision and Administration of the State Council. Aluminum Corporation of China Limited, *2014 Annual Report*. *http://www.chalco.com.cn/zlgfen/rootfiles/2015/04/23/1429749255321579-1429749255323762.pdf.*

[†] For more information on China's state-owned enterprise reforms, see U.S.-China Economic and Security Review Commission, *Monthly Analysis of U.S.-China Trade Data*, October 6, 2015, 7–8.

October 2015, Chinalco announced plans to close this unprofitable smelter but reversed plans a week later after local officials lowered electricity prices in an effort to maintain economic growth and employment.[72]

Figure 9: World's Ten Largest Aluminum Producers, 2013



Source: RUSAL, "Aluminum Producers," *http://www.rusal.ru/en/aluminium/manufacturers.aspx*.

Chinese Excess Production

The rapid growth in Chinese demand led global and domestic producers to ramp up production.[73] However, overestimations of Chinese demand and the quick expansion of China's domestic industry contributed to an enormous buildup of inventory.[74] Industry estimates expect approximately one million metric tons of excess supply this year alone, contributing to a 27 percent drop in aluminum prices over the past year.[75] These falling prices and high operating costs are putting significant pressure on aluminum firms' bottom lines. In October 2015, Bank of America estimated that half of the world's aluminum smelters were not profitable.[76] U.S. firm Alcoa estimates that because of the low prices, around 30 percent of global primary production is cash negative; 60–70 percent of these producers are in China.[77] Commodity consulting firm Harbor Intelligence noted that prices will need to rise above current levels to save the remaining U.S. aluminum smelters.[78]

To offset the global oversupply and minimize financial losses, the world's largest aluminum producers have begun to idle or shut down capacity. Russian firm RUSAL, the world's largest aluminum producer,* idled aluminum smelters in 2013 and is considering a 200,000-metric-ton reduction in annual aluminum production.[79] Alcoa, the largest U.S. aluminum firm, has reduced its smelting capacity by a third since 2007 and announced in November 2015 that it will idle three of its four active U.S. aluminum smelters to improve its cost-competitiveness.[80] Century Aluminum, another U.S. aluminum producer, has also made significant cuts. Alcoa's and Century's combined cuts represent a 30 percent reduction of U.S. aluminum production and have lowered U.S. aluminum output to its lowest levels since the 1950s.[81] In spite of these cuts, Daniel Briesemann, an analyst at Commerzbank AG, wrote "it's just

* RUSAL accounted for 7 percent of world's total aluminum production and 7 percent of global alumina output in 2014. RUSAL, "Press Release: UC RUSAL Announces Third Quarter 2015 Operating Results," October 28, 2015. *http://www.rusal.ru/upload/uf/98d/28%2010%202015%20RUSAL_Trading%20update%203Q15%20ENG.pdf*.

a drop in the ocean if you see how much aluminum is still produced in China and how many capacities are still being built there."[82]

China is replacing its most outdated and costly smelters with new, more efficient ones.[83] Between January and May 2015, China increased its aluminum capacity by one million tons per year.[84] Bloomberg Intelligence analyst Yi Zhu predicts China will account for 90 percent of the increase in global capacity this year.[85] While increases in capacity usually signal growth in a sector, Chinese firms are largely producing at a loss. In the third quarter of 2015, the consulting firm AZ China found that while production costs fell 4 percent on average, over 90 percent of China's aluminum capacity is "under water on a cash cost basis."[86] For example, Chalco lost $2.6 billion (RMB 16.2 billion) in 2014 and an estimated $179.3 million (RMB 1.14 billion) in the first half of 2015.[87]

While under normal circumstances such losses would encourage firms to shut down capacity, "in China, production growth and demand growth are completely divorced," according to Uday Patel, a senior analyst at Wood Mackenzie.[88] This divide allows political factors such as employment to influence business decisions over profitability concerns.[89] As aluminum prices have fallen, the Chinese government has stepped in to buttress its aluminum industry by subsidizing energy, the largest component of production costs, accounting for approximately 40 percent of total costs.[90] In China, energy costs per metric ton of aluminum output are around $900 compared with the Middle East and Canada, where costs are less than $350 due to the availability of cheap natural gas and hydropower.[91] To lower these costs, the State Council announced cuts in power prices for coal-fired power plants in April 2015.[92] According to Eoin Dinsmore, an analyst at the business intelligence firm CRU, "It's going to drop production costs by about 2 per cent, not an enormous benefit, but it sends a signal that they want to continue to give these guys support. They are not showing the appetite to rein in the industry at the moment."[93] Additional reductions of on-grid power tariffs of around $59 (RMB 375) are expected in November 2015 that would further keep unprofitable smelters alive.[94]

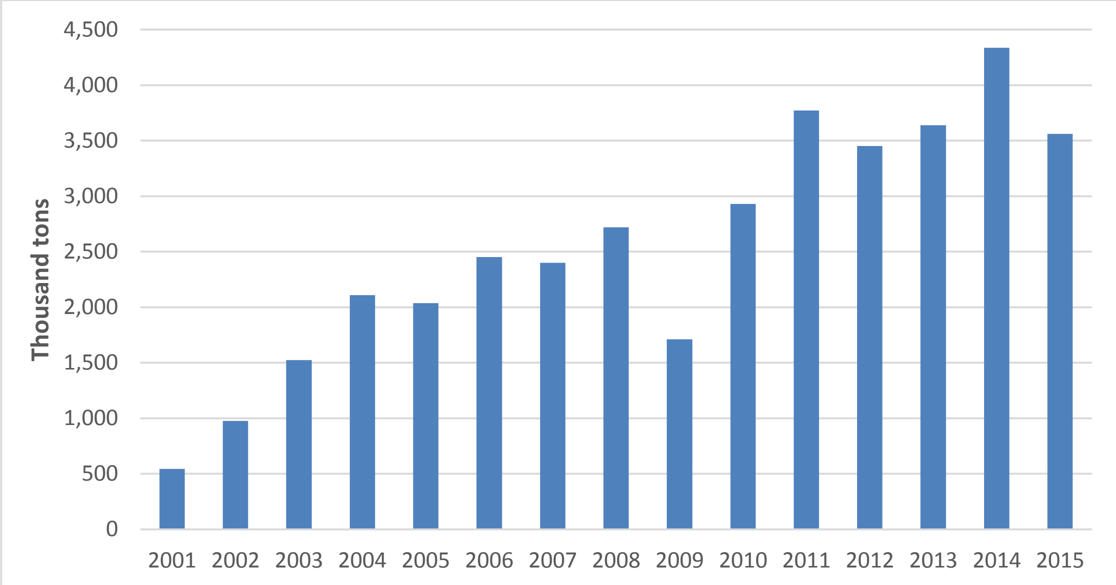
Chinese Exports Further Weaken U.S. Smelters

The U.S. aluminum industry generates $66 billion in economic output and directly employs 157,000 workers, according to the Aluminum Association, the U.S. aluminum industry trade organization.[95] However, while demand has increased slightly this year, the combined impact of low prices, higher electricity costs, and influx of cheap imports, particularly from China, is putting U.S. smelters out of business and forcing U.S. firms such as Alcoa to transition to more high-end products such as high-grade aluminum for automobiles.[96] Already, 30 percent of U.S. aluminum production has been eliminated.[97]

Under pressure from the continued low prices and oversupply, Alcoa announced in September 2015 that it will separate into two companies.[98] This separation would create one upstream firm focused on bauxite mining, alumina refining, and aluminum production; it would be the world's largest alumina refining system—a key component in aluminum—and remain the world's fourth-largest aluminum producer. The second firm will concentrate on high-end aluminum manufacturing for the aerospace and automobile sectors, a far more profitable industry.[99]

Chinese firms have increased their export of subsidized excess production from a little over half a million metric tons in 2001 to 4.3 million metric tons in 2014 (see Figure 10).[100] In the first nine months of 2015, China's global aluminum exports increased 17.7 percent over the same period last year.[101] The addition of new supply to an already weak global aluminum market has placed downward pressure on global prices and further weakened U.S. producers' profit margins.[102] In August 2015, following the closure of an aluminum smelter in Kentucky, Michael Bless, President and CEO of the U.S.-based aluminum manufacturer Century Aluminum Company, stated that "Chinese overcapacity and the improper export of heavily subsidized Chinese aluminum products have undercut an otherwise viable plant."[103]

Figure 10: China's Global Aluminum Exports, 2001–September 2015



Note: Exports include unwrought aluminum and aluminum products. 2015 data through September.
Source: China General Administration of Customs via CEIC.

From 2012 to 2014, U.S. imports of semi-fabricated aluminum products from China increased 115 percent, according to data from the Aluminum Association, the U.S. aluminum industry trade group.[104] These Chinese imports have quickly gained market share from around 14 percent in 2012 to nearly 28 percent of all imports in 2014.[105] In the first six months of 2015, Chinese imports grew 75 percent year-on-year, accounting for 36 percent of market share.[106]

U.S. firms have accused Chinese exporters of dumping and improper labeling and filed petitions to the DOC.[107] In response to the petition, the DOC has pursued antidumping and countervailing duty investigations against Chinese aluminum exports.[108] These cases have had limited success. In May 2011, DOC imposed antidumping and countervailing duties on U.S. imports of Chinese aluminum extrusions.[109] However, some Chinese companies circumvented these duties by transshipping production through a third country or improper labeling.[110] In October 2015, the trade association Aluminum Extruders Council filed a petition with DOC against Zhongwang Holdings Ltd., China's second largest producer of aluminum extrusions, for systematically and illegally evading duties on aluminum extrusions.[111]

Chinese companies are also avoiding Chinese government regulations to boost exports. While China's Ministry of Finance applies a 15 percent export duty on aluminum exports, it provides a value-added tax refund for semi-fabricated aluminum products. China's Ministry of Finance sought to use the value-added tax refund in order to incentivize higher-value-added production, but instead, some Chinese firms have sought to circumvent the 15 percent export duty on aluminum and earn the 13 percent value-added tax refund by transshipping or mislabeling exports.[112] In a letter to the U.S. Trade Representative in September 2015, the Aluminum Association wrote that improper labeling of exports "create[s] an unlevel playing field for aluminum producers in North America and around the world, and lead to distortions in the marketplace that have ripple effects across the entire industry."[113]

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