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Testimony Given By

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In a hearing before the
Congressional Steel Caucus

"The Status of the Steel Industry and U.S. Manufacturing"

Tuesday, June 16, 2009

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Summary and Overview

Good morning, Chairman Visclosky, Representative Murphy and other members of the Caucus. Thank you for the opportunity to testify today on the state of the U.S. steel industry and manufacturing.

U.S. manufacturing has been hard hit by the structural growth in U.S. trade deficits since the late 1990s, and by the last two recessions. More than 5 million manufacturing jobs have been eliminated. Unfair trade practices by China and a number of other countries are responsible for a substantial share of growing international trade deficits.

The U.S. steel industry has experienced the largest output decline in decades and is currently operating at capacity utilization levels of well under 50%. The industry has lost over 50,000 jobs since 2000, which is responsible for the displacement of over 500,000 jobs in manufacturing and other sectors of the economy. The unprecedented expansion of the Chinese steel industry represents a grave threat to the future of the domestic steel industry. This expansion has been supported with vast, illegal subsidies for energy and other key inputs. In addition, China recently restored an export rebate program of 9% for many steel products, another direct and unnecessary subsidy to its exports.

The U.S. must directly address the threat posed by these unfair trade practices with aggressive enforcement of U.S. fair trade law. However, cheap Chinese steel also threatens a wide swath of U.S. manufacturing, in products ranging from auto and aircraft parts to machine tools and consumer and industrial machinery of all types, as Chinese producers have an unfair advantage over U.S. firms when they are allowed to incorporate unfairly cheap Chinese steel into their products. This is one of the greatest challenges facing U.S. trade enforcement. Congress should consider developing new institutions to enforce U.S. trade law by self-initiating trade cases. U.S. trade remedy laws may also need to be revised to address these challenges.

Chinese currency manipulation is responsible for a large share of the U.S. trade deficit. China was responsible for 2/3 of the U.S. non-oil trade deficit in 2008. Its currency is approximately 40% undervalued against the dollar according to the best estimates. Congress needs to develop new legislation to impose penalties on China and other countries that maintain large trade surpluses and undervalued currencies with the United States.

Despite these challenges, manufacturing remains a vital part of the U.S. economy (Scott 2008c). It employs almost 12 million workers today, and a comparable number of jobs are supported elsewhere in the economy through the purchase of domestic goods and services needed to generate manufacturing output. Reduction or elimination of the U.S. trade deficit in manufactured products could support the creation of 4 to 5 million U.S. jobs.

There are some academics and Wall Street financiers who claim that we should encourage a transition to a "post-manufacturing" economy. Unfortunately, they have forgotten a basic fact of economic life—we must pay for the goods and services that we wish to buy from the rest of the world, and what better to offer the world than the superior quality of our manufactured products? Our services surplus is a tiny fraction of the trade deficit, and is likely overstated, because it undercounts and undervalues growing imports of business services. For the past several decades we have sold treasury bills in order to pay for our trade deficits. But the global appetite for these securities is rapidly becoming sated. And the cost of servicing that debt will be a burden on untold future generations.

The U.S. can invest in manufacturing directly through investment in renewable energy and energy efficiency, through expansion of the manufacturing extension partnership program, and through development of new manufacturing finance authorities. It also needs to take care to ensure that public investments in R&D and other activities in support of manufacturing are tied to increased production in the United States. U.S. manufacturing has suffered for too long from policies of malign neglect, ranging from denial of the obvious (currency manipulation) to the sacrifice of our national security (through inadequate attention to domestic supply channels and a growing DOD preference for "globalized supply chains" that undermined U.S. production). It is time to develop a coherent set of policies in support of manufacturing and a positive vision of manufacturing's role in the future of the economy. Rebuilding manufacturing offers one of our best options for recovering from the current recession, because it will create good jobs for the millions of Americans who now languish on unemployment.

Thank you for your time and attention.

Introduction

The U.S. manufacturing sector has been hard hit by the last two recessions, having lost 5.3 million jobs between January 2000 and May 2009, a decline of 31%. Manufacturing job loss in the 2001 recession was somewhat greater both in terms of number of jobs lost (3.0 million) and on a percentage basis (17%) than it has been so far in the recession of 2008-09 (-2.0 million jobs, -15%). However, employment tends to lag behind output during recessions, especially in manufacturing. According to the Federal Reserve's industrial production index (IP), the 2000 manufacturing recession ended in December 2001 (**Figure 1)**, but employment continued to fall until early 2004.

Overall trends in manufacturing employment suggest that the 2000 recession in manufacturing was much deeper than indicated by the IP index, which showed that

output (real value added) began to recover in 2002 and surpassed the previous peak in 2003, as shown in Figure 1, whereas employment never recovered. This represents a radical shift from the prior 35 years. Between 1965 and 2000, total manufacturing employment was relatively stable, varying between 16.5 and 19.5 million workers but always recovering after recessions. U.S. manufacturing employment has not recovered since the 2000 recession, and it has been hard hit by the current downturn. In fact, fewer than 12 million total workers of all types were employed in manufacturing in May 2009.

Within the overall manufacturing industry, the steel industry has been hit particularly hard during the current downturn for several reasons. The IP index for steel output has fallen nearly two-thirds since December 2007, and it stands at its lowest level in the past 37 years, as shown in **Figure 2**. The steel industry has lost 15,800 jobs since December 2007, a 15.8% decline in industry employment, as shown in **Figure 3**. However, firms are usually reluctant to lay off workers in the early stages of a downturn, as was the case in the 2000 recession when employment lagged far behind the business cycle. If the current recession of 2008-09 recovers very slowly as is expected, firms within the steel industry and in many other manufacturing sectors are likely to shed large numbers of additional jobs in the future.

Steelworkers are both highly skilled and highly paid due to the difficult and dangerous nature of their jobs. The loss of steel jobs has widespread effects in the economy, as shown in **Table 1.** This exhibit includes the 52,800 direct jobs lost in the steel industry since January 2000, and 168, 900 indirect jobs supported by the steel industry in other sectors of the economy (including other industries providing inputs to the steel sector, ranging from coke-making to management, and to scientific and engineering consulting services). Since steelworkers are highly paid individuals, their spending tends to support many other jobs in the economy.[1] As a result, jobs displaced within the steel industry further resulted in the loss of an additional 301,400 "re-spending" jobs, or jobs indirectly lost due to a fall in those workers' consumption of items ranging from groceries to cars, from housing to schooling.

Table 1
Impact of steel job loss, 2000- April 2009

Direct jobs lost in steel industry	52,800
Indirect jobs displaced	168,865
Subtotal, direct & indirect jobs	221,665
Re-spending jobs	301,465
Total jobs displaced	523,131

Sources: Bureau of Labor Statistics and Economic Policy Institute

Causes of manufacturing and steel industry slowdown in 2008 and 2009:

The financial crisis and 2007-08 bubble in the prices of oil and other commodities led to the collapse of the auto industry, to the general reduction in consumer spending, and, more recently, to the evolving slowdown in non-residential construction which has declined by 16.5% since the fourth quarter of 1997. Spending on steel is particularly dependent on production of autos and other durable manufactured goods, and from non-residential construction, especially roads, bridges and commercial buildings.

Demand for steel products has also become destabilized by inventory cycles. A significant share of the U.S. steel supply (both domestic and imported) is sold by steel service and through various distribution centers which hold large inventories of finished and semi-finished steel products. These centers tend to expand purchases when steel prices are rising, as they were in 2007 and early 2008 (to minimize the average costs of inventories) and reduce purchases and sell off inventories when steel prices are falling. As a result, steel output (which has declined by nearly two thirds through the first quarter of 2009, relative to 2008—see **Figure 6**, below), has fallen even faster than auto sales in the current recession, which have fallen 35% to 40%, relative to year earlier levels.

The growth of the manufacturing trade deficit was probably the largest single cause of the structural decline in manufacturing employment between 1998 and 2006 (**Figure 4).** Conversely, rising exports and a decline in the manufactured goods trade deficit increased demand for manufactured goods and helped sustain manufacturing employment, at least in the early stages of this downturn. Unfortunately, this source of stimulus ended in late 2008 as the global financial crisis has resulted in a collapse in U.S. exports since late 2008.

Those who claim that we should encourage a transition to a "post-manufacturing" economy have forgotten a basic fact of economic life—we must pay for the goods and services that we wish to buy from the rest of the world, and what better to offer the world than the superior quality of our manufactured products?

Improvements in the manufacturing industry's trade balance between 2006 and 2008 were primarily caused by the decline in the value of the dollar against the Euro, Canadian dollar and other freely floating currencies. However, rising imports of steel products, especially from China, are a great threat to domestic steel production. (**Figures 5-10).**

Threats to the recovery of U.S. Steel and other manufacturing industries

Rapidly rising steel production in China leads to surging U.S. imports

From the year 2000, China has embarked on a massive campaign to expand steel production capacity. Since then, Chinese steel production has nearly tripled, rising from 127 million tons in 2000 to 500 million tons in 2008 (**Figure 9**). The *increase* in China's

steel output in this period was nearly four times as large as *total* steel output in the United States, which averaged 95 million tons per year. China went from being the world's largest steel importer in 2003 (**Table 2)** to the world's largest steel exporter in 2007 (**Table 3**). By 2007, the United States was the largest steel importer in the world.

Steel producers in China and in other countries have benefitted from massive state subsidies, such as the Chinese government's energy subsidies to its steel industry which exceeded $15 billion in 2007 alone (Haley 2008). In addition, China has just restored on "export rebate" of 9% for many steel products which constitutes and additional direct subsidy. Companies in China, Japan, South Korea and many other countries have frequently been found guilty of unfairly dumping (selling below cost) steel in U.S. markets. These cases tend to proliferate during recessions as foreign producers attempt to export their surplus products to other markets.[2]

Apparent consumption of steel products has been relatively stable from 1995 until this year, as shown in **Figure 6**. U.S. steel producers are highly competitive, and U.S. exports have been rising steadily throughout this period, as a share of apparent consumption, as shown in **Figure 7**. However, imports have risen even faster, as shown in the same figure. As a result, the share of U.S. apparent consumption supplied by domestic producers has fallen significantly, from 85% of the domestic market in 1995 to 79% in the first quarter of 2009. Most of the decline in domestic share has occurred this year, as imports surged relative to domestic apparent consumption.

China's share of net U.S. exports (exports less imports, which equals the U.S. steel trade deficit) has soared, from 1% in 1995 to 25% in the first quarter of 2009, as shown in **Figure 8**. All of the growth in China's share of the U.S. net export deficit in steel product has occurred since 2003, and is strongly correlated with the overall growth of Chinese steel production in the past 4 years (**Figures 9 and 10**). The growth in China's share of the U.S. steel trade deficit also reflects the fact that U.S. steel exports to China have remained very low (less than 300,000 tons per year, with the exception of 2003), as shown in Figure 8. This stands in sharp contrast to rising U.S. steel exports to the rest of the world. China has aggressively sought to position itself as the world's largest steelmaker and steel exporter, and yet, ironically, it remains largely closed to the U.S. steel exports.

Opportunities and threats related to the implementation of climate change policies

A well-designed climate policy can support the economic recovery, and green investments can support millions of new jobs, starting with the creation of over 1 million new jobs in the next two years (Bivens, Irons and Pollack 2009). It can also ensure that U.S. manufacturing comes back stronger and cleaner than before.

Poorly-designed climate change policies, however, could slow or halt the recovery of significant segments of U.S. manufacturing and could even lead to increased global production of carbon dioxide and other greenhouse gases (GHGs) through carbon leakage and increased outsourcing of U.S. manufacturing industries.

Thus it is essential for the U.S. to put in place climate change policies that ensure a strong, broad-based recovery of the economy, and that encourage the growth of domestic manufacturing. One of the keys to achieving these goals is to include a border adjustment mechanism in U.S. climate change policies.

Most policy proposals to redress climate change are based on the idea that assessing a cost on emissions will create incentives to produce more efficiently (with fewer GHG emissions) and to switch consumption to other products that generate fewer GHGs in production or use. The House Committee on Energy and Commerce, under the leadership of Chairman Henry Waxman, and Energy and Environment subcommittee Chairman, Edward Markey, have recently finished marking up the American Clean Energy and Security Act of 2009 (HR 2454), which includes a "cap and trade" proposal to reduce GHG emissions in the U.S. This is based on similar plans first implemented in the EU in 2005 (since revised, German Marshal Fund 2009).[3] Other policies, such as a carbon tax, have also been considered.

If the U.S. develops climate change policies that only apply to domestic companies without regard for their effects on trade, two outcomes are likely. Production of energy intensive manufactured goods, especially price-sensitive manufactured commodities that already face high levels of import competition, could rapidly be outsourced to countries like China and India that do not restrict GHG emissions. This could lead to loss of jobs in manufacturing and related industries, and it could lead to further growth of the trade deficit.

Worse yet, increased production of energy intensive goods such as iron and steel, pulp and paper, basic chemicals and glass products in developing countries would most likely lead to an *increase* in net global emissions of GHGs. American industries are already leaders in energy efficiency and usage of pollution controls, while foreign producers in developing countries often lag far behind. For example, the U.S. steel industry has become 25% more energy efficient in the past 20 years, while the Chinese steel industry now generates 50% of the carbon emitted by global steel production and makes only 33% of the world's steel. This means that it generates much more carbon per ton than the global average. According to the International Iron and Steel Institute, Chinese steel production generates 2.5 tons of carbon per ton of steel, while U.S. steel production generates only 1.2 tons of carbon per ton of steel. (Conway 2009, Bailey et al 2009, 59) Thus, if Chinese steel is substituted for U.S.-made steel on a ton-for-ton basis, global carbon emissions would in fact rise if domestic production were simply displaced by Chinese production. This is known as the ***carbon leakage problem***, which could occur if the United States implemented carbon limits and other countries did not. Leakage problems could lead to significant increases in global carbon emissions if border adjustment is not included in cap and trade policies. Border adjustment policies would apply a fee at the border for products arriving from countries that do not implement cap and trade programs, thus equalizing carbon costs within the domestic market. Fischer and Morgenstern (2009) recently found that "Over the long term, the leakage rate for the

few most vulnerable industries can be as high as 40 percent in the case of a unilateral $10 per-ton CO2 price."

Fortunately, the Waxman-Markey Bill referred out of the Committee on Energy and Commerce on May 15, 2009 contains 100% production credits for the steel industry that will allow steel producers to offset the costs of GHG cap and trade credits while negotiations to create an international system of border adjustment agreements take place. However, the bill has been referred to a number of other House Committees for further review, and the measure has yet to be considered by the Senate.[4] Production credit allowances and plans for a border adjustment system could be altered or eliminated before the final bill is passed by Congress and signed by the President. If a GHG cap and trade system is implemented in the United States without provisions for production credits for the steel industry and other carbon-intensive, commodity-based manufacturing sectors, and without a commitment to negotiate a border adjustment system, it could lead to substantial leakage and additional outsourcing of domestic production, leading to further job losses, plant closures and manufacturing output decline in the United States.[5]

Carbon pricing will have very uneven effects across industries, and manufacturing is particularly vulnerable to carbon leakage. This is because it is energy intensive and most of its products are highly tradable, with many already facing high levels of import competition. The steel industry is particularly vulnerable because it is highly carbon intensive and already faces intense international competition, as shown above. Other vulnerable manufacturing industries include pulp and paper, basic chemicals, rubber and coke production, non-metallic mineral products, petroleum refining, glass, clay, textiles mills, cement and aluminum production.

Policies to help rebuild U.S. manufacturing

Currency manipulation is a key problem

The value of the dollar is one of the most important determinants of the competitiveness of U.S. manufacturing. The real value of the dollar fell 25% between February 2002 and April 2008. When the dollar falls in value, it makes U.S. exports less expensive relative to products from other countries and makes imports more expensive. The falling value of the dollar, especially against the Euro, the Canadian dollar and other flexible currencies contributed to the rapid growth of U.S. manufacturing exports and to the decline of the manufactured trade deficit between 2006 and 2008 (Figure 4).

Recently, the dollar has reversed much of the ground gained over the past 7 years, gaining 12% in real terms since April 2008, which threatens to cut off the growth in U.S. exports even after the economy recovers. In part, this reflects normal cyclical factors, since foreign investors have historically seen the dollar as a safe haven during financial crisis. That effect was particularly powerful during the recent global financial collapse.

Another factor which as prevented the dollar from adjusting to competitive levels is widespread currency manipulation which China and a number of other countries have engaged in since 2000, acquiring trillions of dollars in U.S treasury bills and other

reserves in order to artificially suppress the value of their currencies (Scott 2009). According to the best estimates, the Chinese yuan remains 40% undervalued against the dollar, despite gains over the past few years (Cline and Williamson 2009). There are a number of countries, primarily in Asia, that have been following China's lead by maintaining undervalued currencies against the dollar (Scott 2008b). Further possible improvement in U.S. trade deficits are being short-circuited because the dollar shows a much smaller decline against these currencies than against flexible currencies such as the euro.

It is essential that the United States adopt a harder line on the issue of currency manipulation policies, most importantly with China. The U.S. Treasury has every reason to determine, in its semi-annual reports to Congress on currency manipulation, that China is a currency manipulator. The failure to do so in its most recent report is simply inexcusable. Congress needs to apply external pressure by passing legislation similar to the Gephardt trade legislation of 1988 which would apply trade sanctions to any country which maintained large, non-oil trade surpluses with the United States and which are found to be manipulating their currencies. The responsibility for making currency manipulation determinations should be lodged with the Government Accountability Office or the non-political and independent U.S. International Trade Commission. The president should *not* be allowed to waive such sanctions unless substantial commitments and significant reductions in currency manipulation and trade surpluses have taken place.

Countering illegal subsidies, dumping and other unfair trade practices

Widespread subsidies and other unfair trade practices by China and other countries have decimated many U.S. industries. Currently, U.S. trade law requires domestic producers, unions or other "injured" parties to file enforcement petitions. However, in many cases there is no longer a sufficient critical mass of domestic producers, representing a significant share of domestic apparent consumption to file such cases. In many cases, domestic firms have been taken over by foreign companies who may have less interest in filing such cases. Although the Obama Administration has committed more resources to enforcement within the U.S. Trade Representative's office, that organization remains fundamentally hostile to the reform of U.S. trade policies, as indicated by USTR Kirk's recent call for Congressional approval of outstanding FTAs with Panama, Columbia and South Korea. These agreements are all fundamentally flawed, as has been pointed out by some members of this caucus and many other members of this Congress.

The U.S. needs to develop the new, independent capacity to enforce U.S. trade remedy laws, and to self-initiate such cases on behalf of current and potential domestic producers. This would require changes to U.S. trade remedy laws to expand the standing of the government to file such cases. WTO challenges to these reforms could arise, and should be addressed through negotiations with other members.

Other policies needed to support manufacturing

U.S. manufacturers and others have developed a number of innovative and important proposals to support manufacturing industries. For example, proposals to invest in

renewable energy and improvements in energy efficiency can create millions of new domestic jobs, as noted above.

Others have proposed that expansion of the NIST Manufacturing Extension Partnerships could be of great value to many firms, especially small manufacturers. Promotion of the lessons of lean manufacturing through these institutions can enhance the competitiveness of domestic firms.

Some manufacturers have faced periodic difficulties obtaining access to capital for both short-term (commercial paper, trade finance and other working capital) and longer-term investments. During the present crisis, the Federal Reserve did step in and engage in direct purchases of commercial paper, but this program did not begin until many manufacturers had already been heavily injured. Creation of a new, federally-backed manufacturing finance authority, akin to Fannie Mae and other government-backed housing finance organizations could provide long-term solutions to shortages of manufacturing capital.

Investments in R&D, through tax credits and other more direct forms of finance, must be approached with caution. A growing number of U.S. manufacturers are outsourcing both R&D and production derived from the results of new research to foreign locations. Efforts are needed to tie publicly financed R&D to domestic production through "invest in America" type provisions, which require recipients of public R&D support to show where the work is done, and to demonstrate that a substantial share of any resulting production takes place in the United States (Hira 2009).

Conclusion

U.S. manufacturing has suffered for too long from policies of malign neglect, ranging from denial of the obvious (currency manipulation) to the sacrifice of our national security (through inadequate attention to domestic supply channels and a growing DOD preference for "globalized supply chains" that undermined U.S. production). It is time to develop a coherent set of policies in support of manufacturing and a positive vision of manufacturing's role in the future of the economy. Rebuilding manufacturing offers one of our best options for recovering from the current recession, because it will create good jobs for the millions of Americans who now languish on unemployment.

The author thanks Anna Turner for research assistance

Figure 1


Manufacturing production, 2000-2008
Industrial Production Index, manufacturing
120
115
110
105
100
95
90
85
U.S. manufacturing
2000
2001
2002
2003
2004
2005
2006
2007
2008
Source: Federal Reserve and Economic Policy Institute

Figure 2

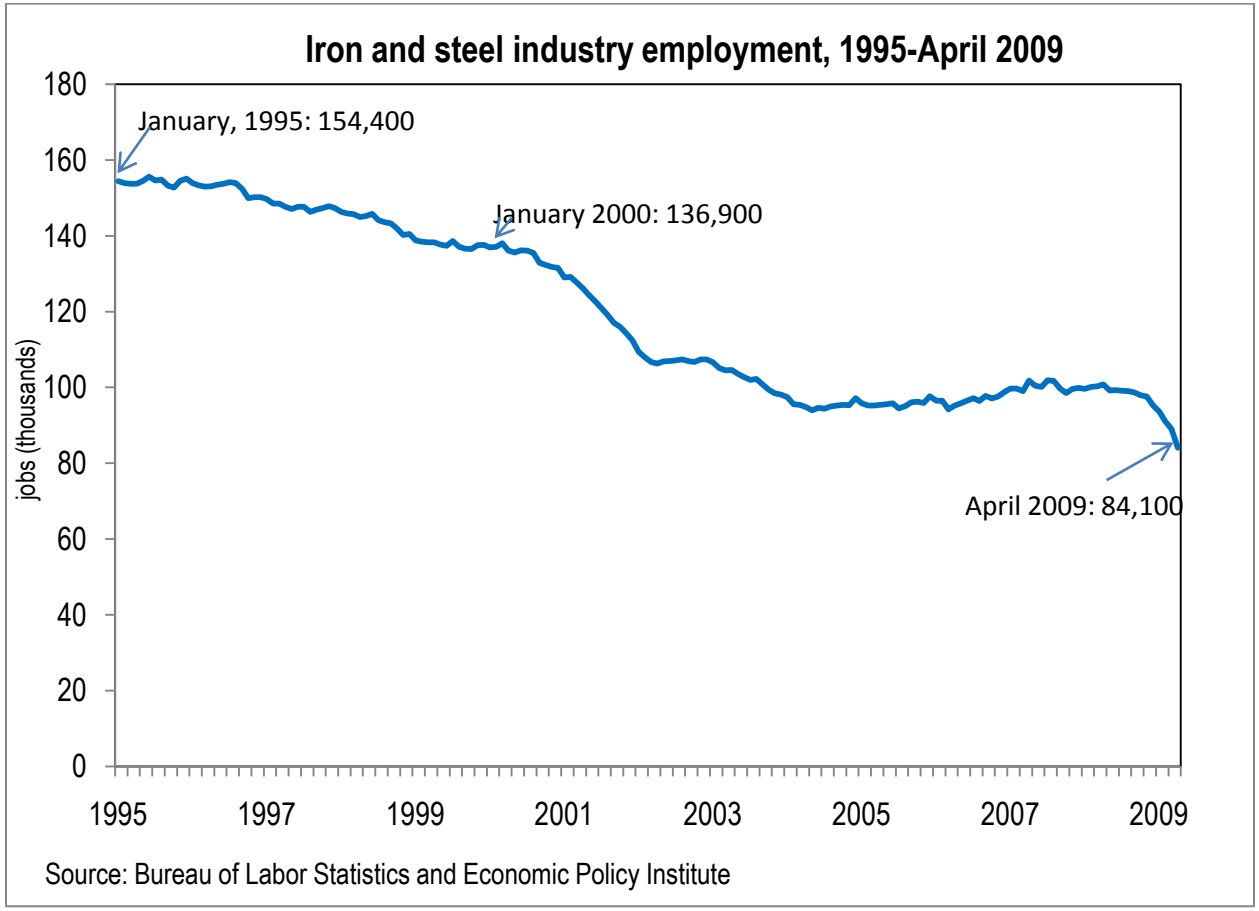
Iron and steel industry employment, 1995-April 2009
jobs (thousands)
180
160
140
120
100
80
60
40
20
0
1995
1997
1999
2001
2003
2005
2007
2009
January, 1995: 154,400
January 2000: 136,900
April 2009: 84,100
Source: Bureau of Labor Statistics and Economic Policy Institute

Figure 3

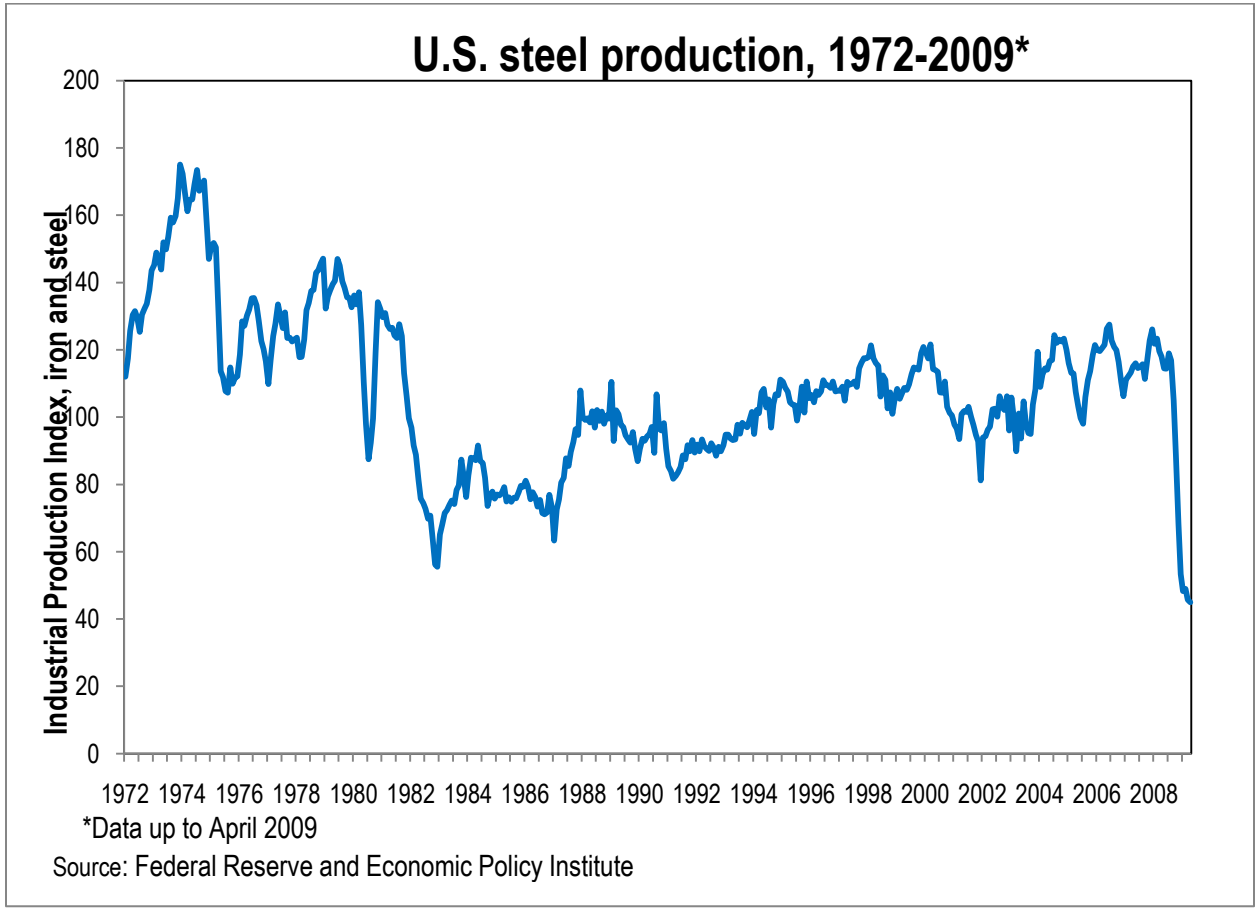
U.S. steel production, 1972-2009*
Industrial Production Index, iron and steel
200
180
160
140
120
100
80
60
40
20
0
1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
*Data up to April 2009
Source: Federal Reserve and Economic Policy Institute

Figure 4

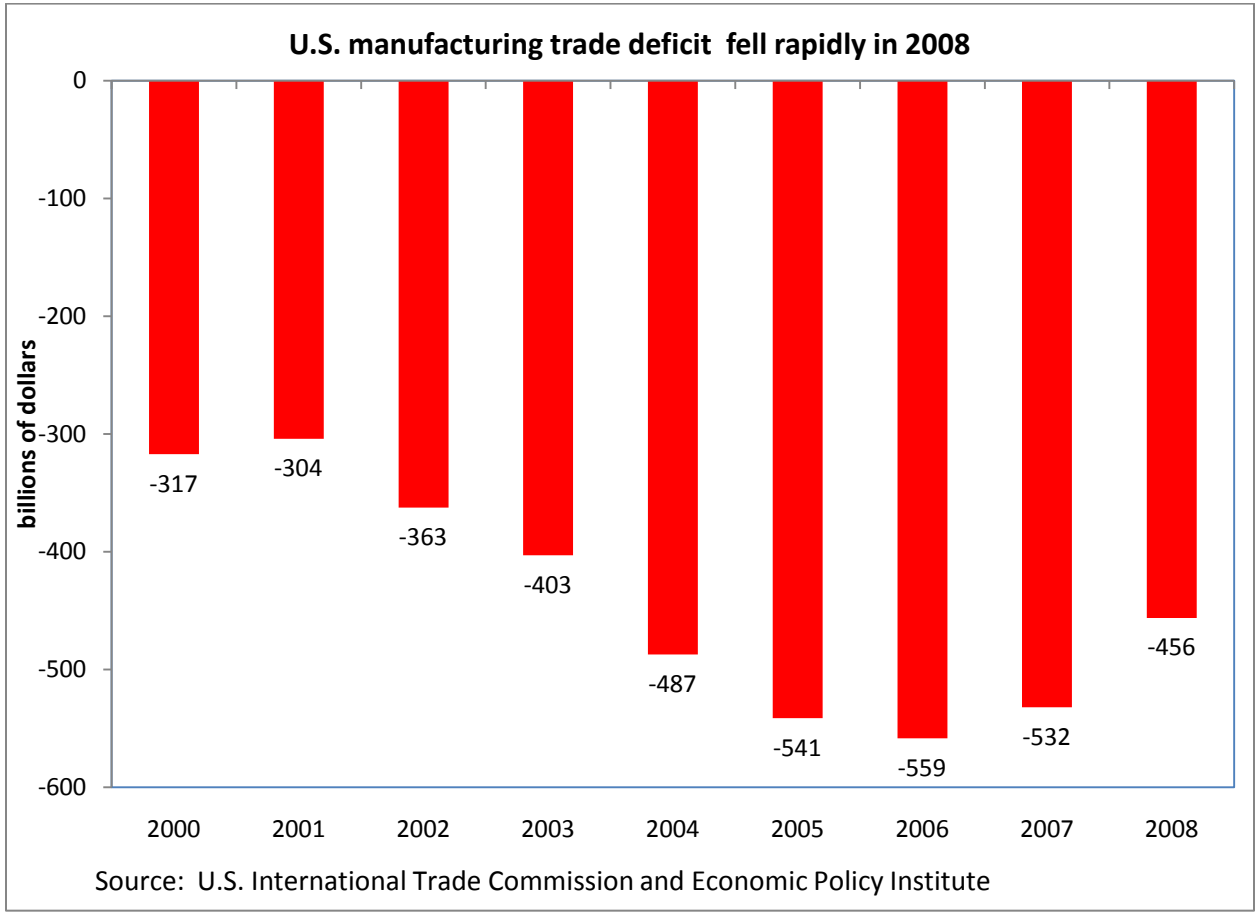
U.S. manufacturing trade deficit fell rapidly in 2008
billions of dollars
0
-100
-200
-300
-400
-500
-600
-317
-304
-363
-403
-487
-541
-559
-532
-456
2000
2001
2002
2003
2004
2005
2006
2007
2008
Source: U.S. International Trade Commission and Economic Policy Institute

Figure 5

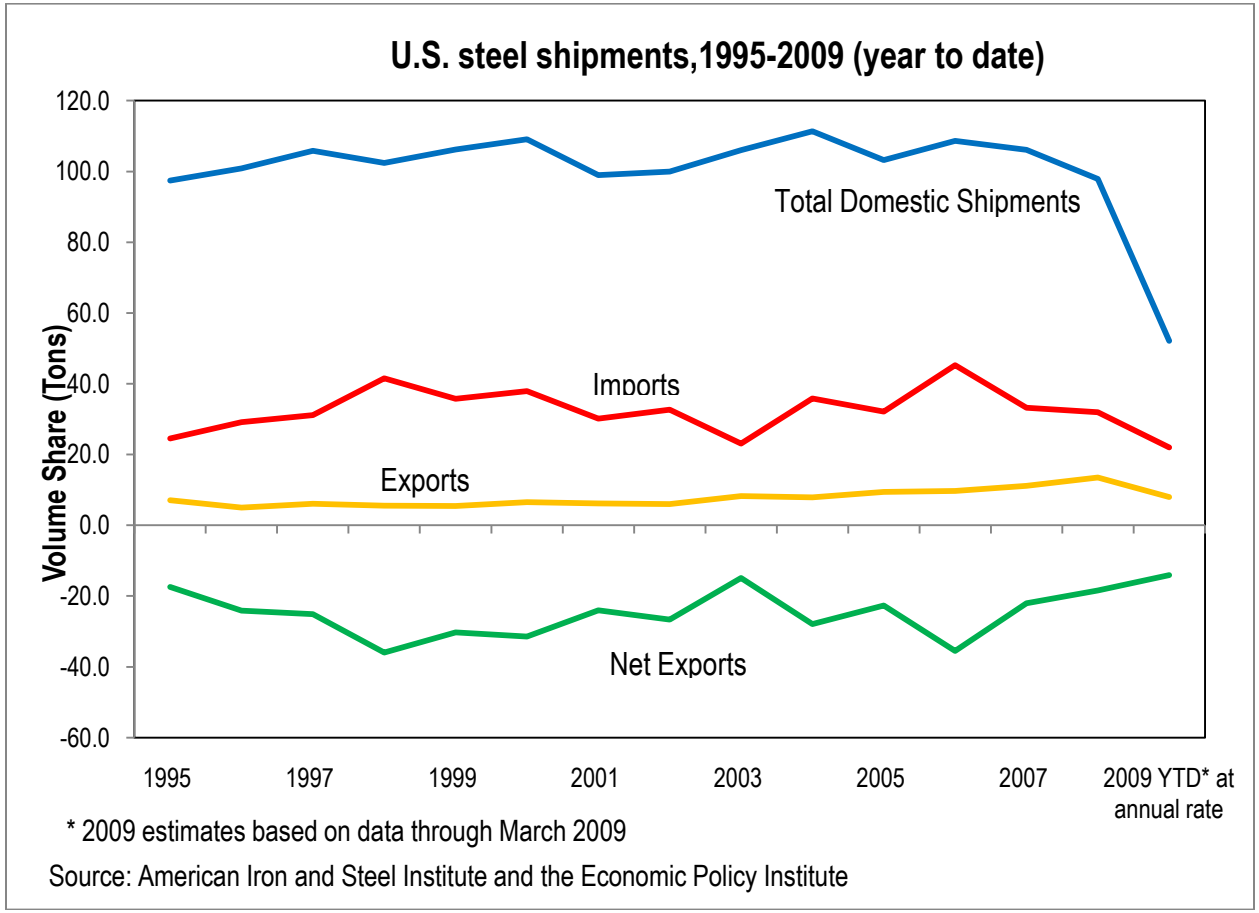
U.S. steel shipments,1995-2009 (year to date)
120.0
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-60.0
Volume Share (Tons)
Total Domestic Shipments
Imports
Exports
Net Exports
1995
1997
1999
2001
2003
2005
2007
2009 YTD* at annual rate
* 2009 estimates based on data through March 2009
Source: American Iron and Steel Institute and the Economic Policy Institute

Figure 6

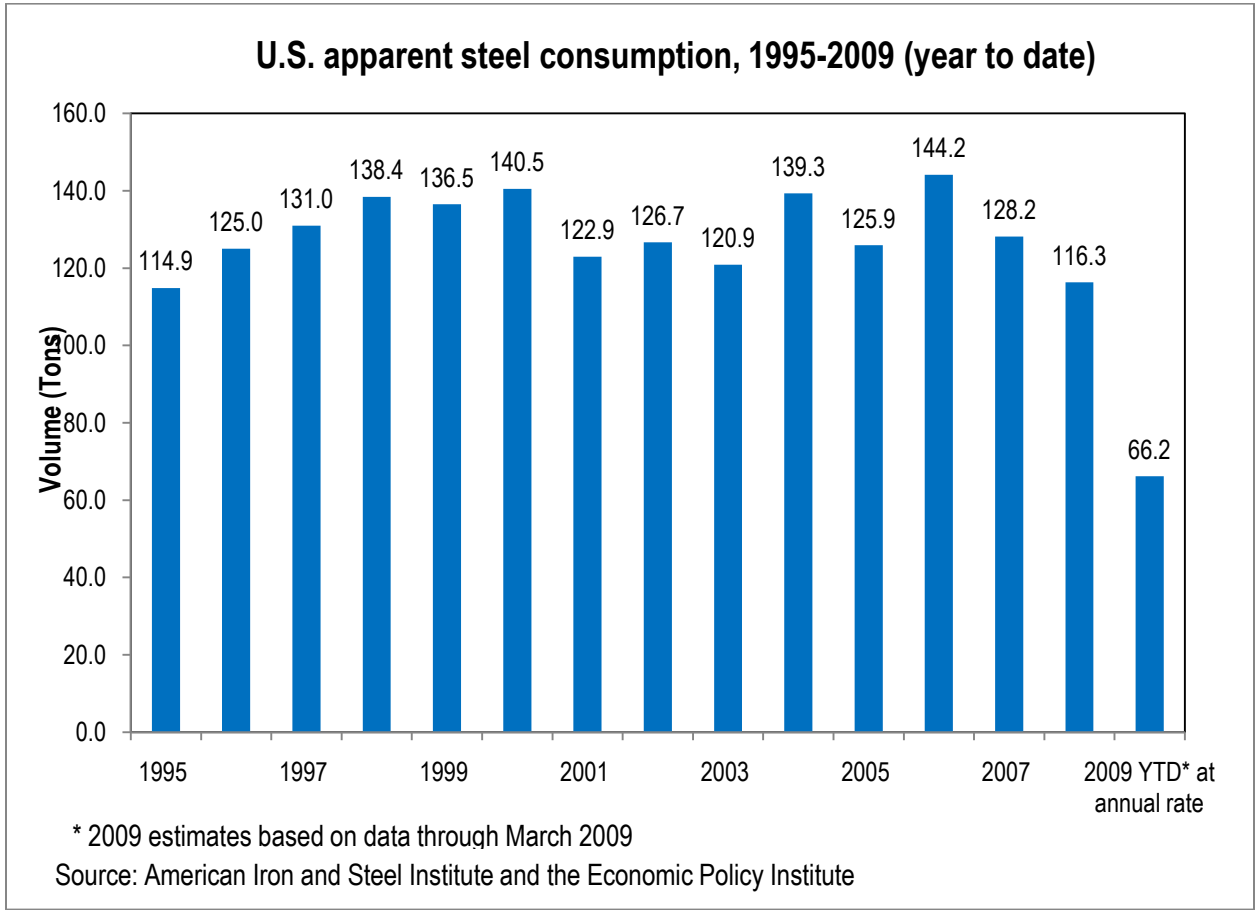
U.S. apparent steel consumption, 1995-2009 (year to date)
Volume (Tons)
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
114.9
125.0
131.0
138.4
136.5
140.5
122.9
126.7
120.9
139.3
125.9
144.2
128.2
116.3
66.2
1995
1997
1999
2001
2003
2005
2007
2009 YTD* at annual rate
* 2009 estimates based on data through March 2009
Source: American Iron and Steel Institute and the Economic Policy Institute

Figure 7

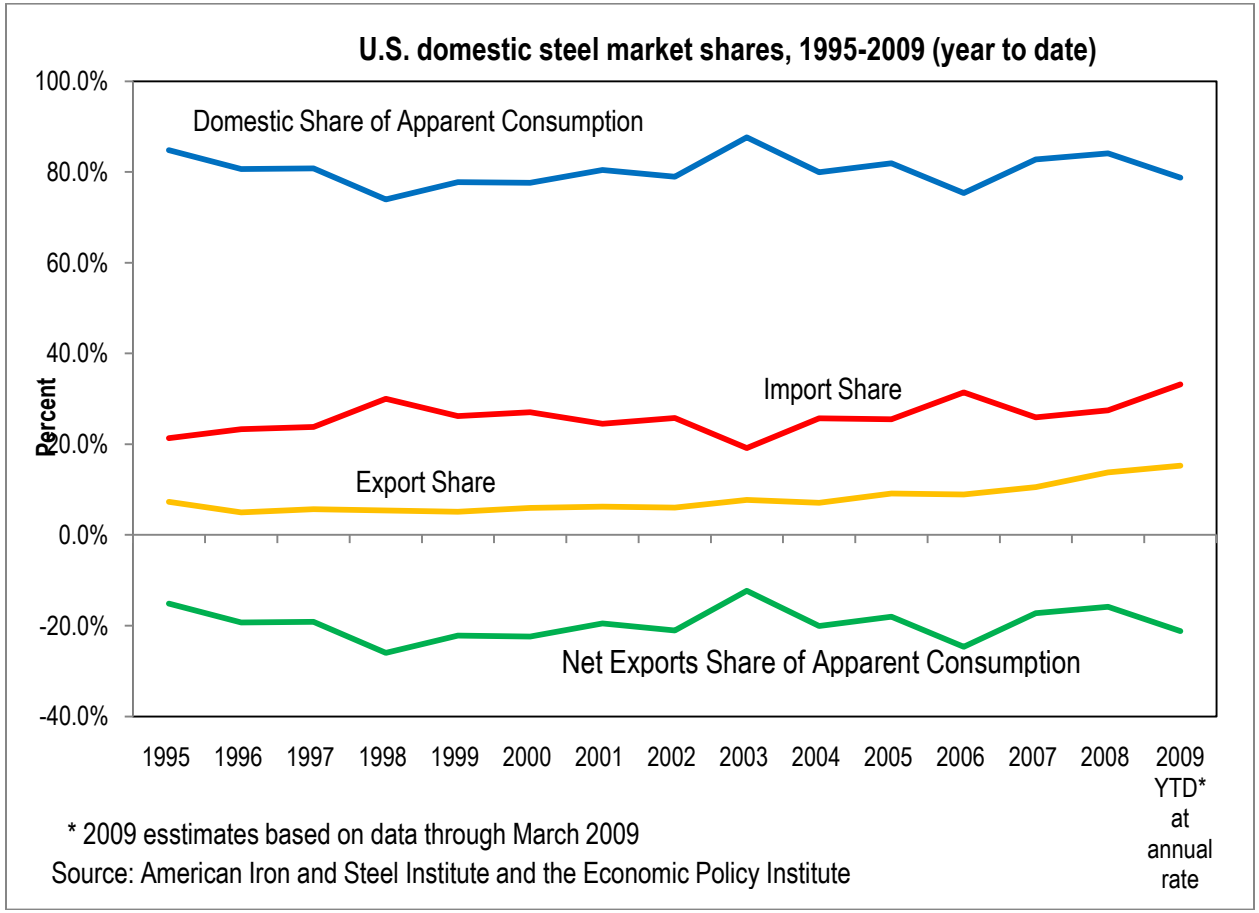
U.S. domestic steel market shares, 1995-2009 (year to date)
100.0%
80.0%
60.0%
40.0%
20.0%
0.0%
-20.0%
-40.0%
Percent
Domestic Share of Apparent Consumption
Import Share
Export Share
Net Exports Share of Apparent Consumption
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009 YTD* at annual rate
* 2009 esstimates based on data through March 2009
Source: American Iron and Steel Institute and the Economic Policy Institute

Figure 8

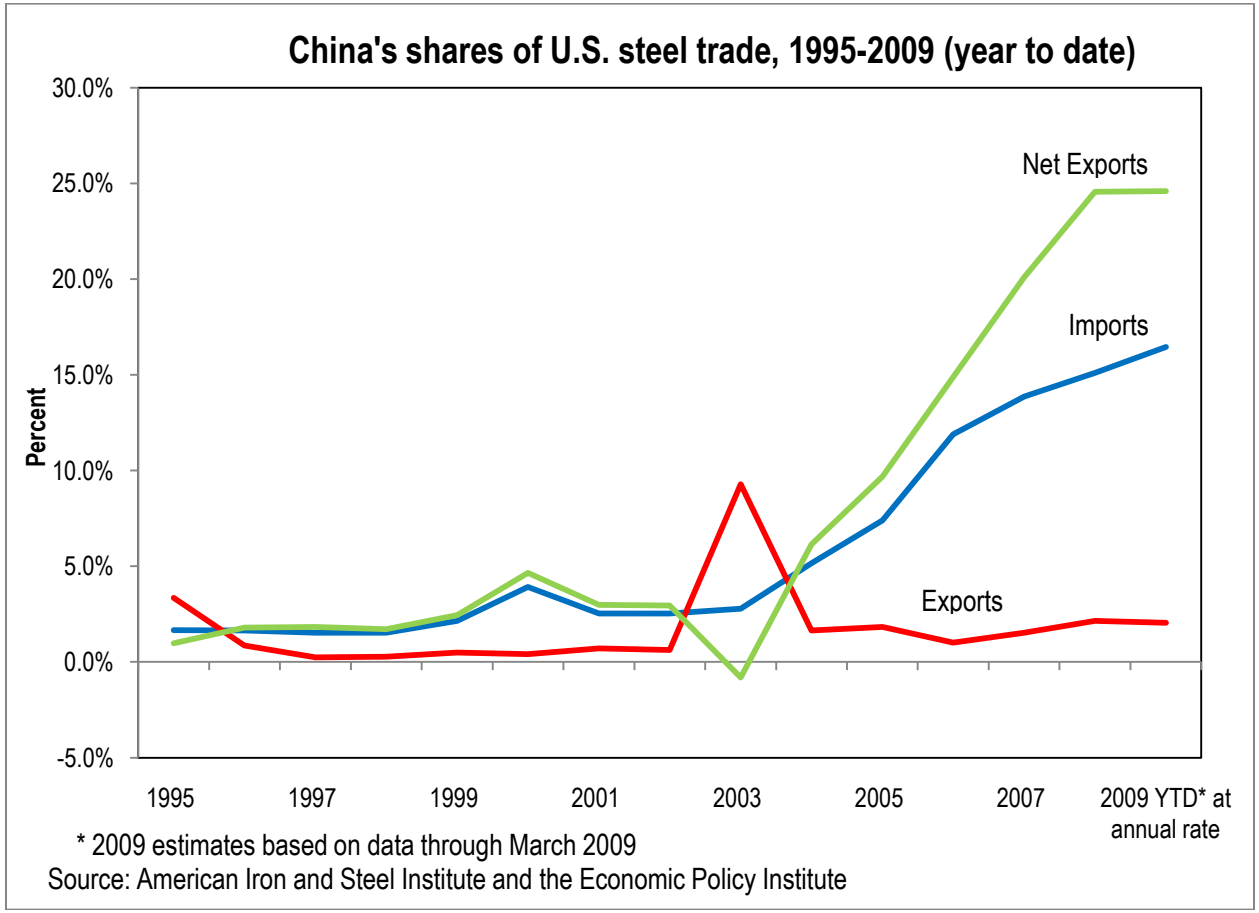
China's shares of U.S. steel trade, 1995-2009 (year to date)
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
-5.0%
Percent
Net Exports
Imports
Exports
1995
1997
1999
2001
2003
2005
2007
2009 YTD* at annual rate
* 2009 estimates based on data through March 2009
Source: American Iron and Steel Institute and the Economic Policy Institute

Figure 9

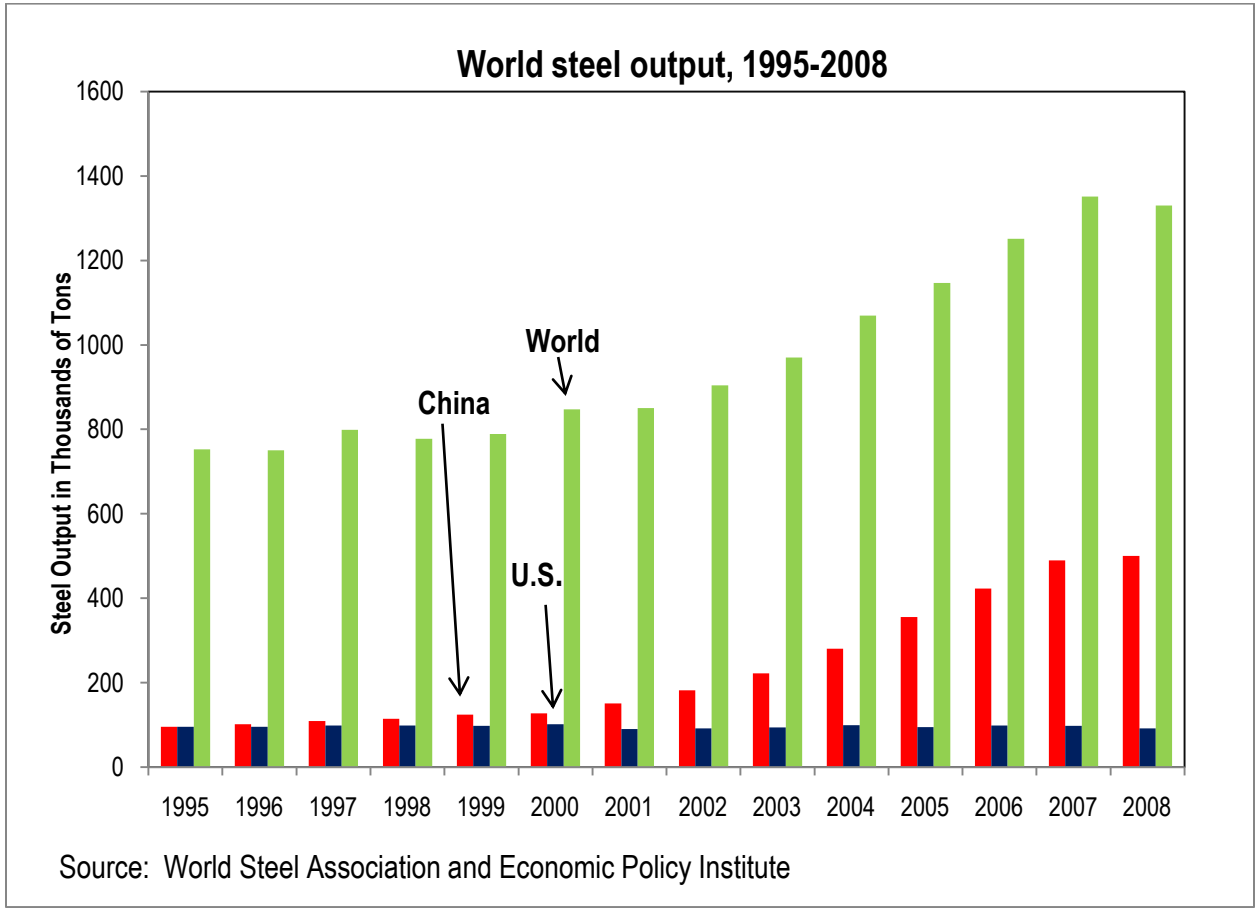
World steel output, 1995-2008
Steel Output in Thousands of Tons
1600
1400
1200
1000
800
600
400
200
0
World
China
U.S.
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Source: World Steel Association and Economic Policy Institute

Figure 10


World steel output shares, 1995-2008
Share of World Steel Output
40%
35%
30%
25%
20%
15%
10%
5%
0%
China
U.S.
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Source: World Steel Association and Economic Policy Institute

Table 2

TOP 20 STEEL IMPORTING COUNTRIES

(Tonnes)

		2003	2004	2005	2006	2007
CHINA	Import	43,195,041	33,220,772	27,311,633	19,104,875	17,318,416
U S A	Import	21,630,693	32,752,331	30,187,337	42,354,548	31,359,387
GERMANY	Import	18,100,513	19,936,456	21,581,356	25,866,901	27,424,682
ITALY	Import	17,917,955	19,534,852	18,522,248	23,908,200	24,582,028
SOUTH KOREA	Import	15,646,804	17,719,636	18,842,360	22,421,335	26,426,283
FRANCE	Import	14,941,812	16,517,853	14,972,538	16,940,610	17,823,322
SPAIN	Import	12,129,811	11,760,996	11,310,405	14,214,121	15,020,000
TAIWAN	Import	11,100,412	13,744,755	11,078,129	10,607,743	9,246,194
BELGIUM	Import	10,578,836	12,000,069	11,770,252	14,694,974	17,364,392
THAILAND	Import	9,816,227	11,137,873	12,537,233	10,763,002	9,802,982
UNITED KINGDOM	Import	8,191,429	8,772,850	7,756,087	8,862,310	9,338,232
IRAN	Import	7,499,805	7,891,474	7,571,400	7,585,668	12,063,896
CANADA	Import	7,133,578	9,277,602	9,912,775	11,028,108	8,641,501
TURKEY	Import	7,090,053	8,166,230	9,859,571	8,454,381	7,583,873
NETHERLANDS	Import	5,427,690	6,542,452	6,606,126	8,268,059	8,075,787
VIETNAM	Export	4,490,514	5,106,841	5,363,271	5,982,995	8,448,798
UTD ARAB EMIRATES	Export	3,761,243	4,668,222	5,665,961	7,383,526	8,623,121
POLAND	Import	3,498,877	4,165,787	4,948,452	6,446,638	7,441,090
RUSSIA	Import	3,325,288	4,125,457	4,561,564	5,824,466	7,426,020
INDIA	Import	2,043,961	2,758,505	5,295,968	5,859,169	7,826,300

Table 3

TOP 20 STEEL EXPORTING COUNTRIES

(Tonnes)

		2003	2004	2005	2006	2007
CHINA	Export	8,243,566	20,073,727	27,414,083	51,706,148	68,546,570
JAPAN	Export	33,727,793	34,767,719	32,040,323	34,556,709	36,245,541
UKRAINE	Export	26,576,474	28,228,062	27,348,358	30,599,904	30,307,924
GERMANY	Export	24,673,158	27,279,050	26,482,818	29,711,927	29,868,899
RUSSIA	Export	28,243,821	30,446,225	30,852,867	31,462,496	29,624,655
BELGIUM	Export	16,062,260	18,138,184	17,192,103	20,097,982	22,126,979
SOUTH KOREA	Export	14,089,741	15,019,210	16,123,575	18,015,656	18,936,708
FRANCE	Export	17,500,981	18,678,099	17,555,066	18,795,183	18,107,093
ITALY	Export	11,473,751	13,434,594	14,519,969	17,051,759	17,907,607
TAIWAN	Export	9,727,907	9,419,428	9,238,587	10,605,580	11,102,390
U S A	Export	7,725,840	7,810,272	9,409,668	9,564,637	10,844,261
BRAZIL	Export	12,941,402	12,006,198	12,535,091	12,625,748	10,512,428
NETHERLANDS	Export	7,692,626	8,962,150	8,242,248	10,240,817	10,331,077
UNITED KINGDOM	Export	7,325,573	7,816,079	8,712,953	8,507,167	9,432,497
SPAIN	Export	6,429,012	6,414,764	6,661,064	6,821,300	7,969,978
CANADA	Export	5,485,824	5,392,471	5,969,612	6,135,165	7,233,146
TURKEY	Export	11,142,356	13,159,333	12,278,768	9,179,616	6,927,891
AUSTRIA	Export	5,234,692	5,872,603	6,123,221	6,459,379	6,814,756

INDIA	Export	5,069,413	5,486,738	5,998,617	7,238,948	6,577,650
CZECH REPUBLIC	Export	4,733,686	4,448,295	4,705,186	5,171,318	5,512,330

Source (both Tables): Iron and Steel Statistics Bureau (2009)

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[1] For details on the model used to develop these estimates, see Scott (2008a), Table 1. The re-spending multiplier is from Bivens (2003), Table 3.

[2] For example, in 2009 alone, the U.S. International Trade Commission (USITC) has found in preliminary or final determinations that four steel products from China have injured or threatened domestic producers with injury due to dumping and or illegal subsidies, in cases involving oil country tubular goods, circular welded steel line ipe, threaded rods and stainless steel pressure pipe (USITC 2009a, 2009b, 2009c and 2009d).

[3] Cap and trade systems establish limits on carbon emissions by country and industry, and require firms to obtain permits to emit carbon and other GHGs either from the government (an allocation) or in the market. There are policies that allow firms to obtain emission credits from investments in other countries that reduce global carbon emissions (or increase natural removal of carbon from the atmosphere. In general, the intent of these policies is to establish a price on carbon emissions, to create incentives to reduce national and global carbon emissions and to increase carbon absorption through natural means (such as increased forestation).. Measures such as emission banking have also been introduced in some countries to manage the supply of permits in order, to avoid large variations in carbon prices.

[4] The bill was referred to the Committees on Foreign Affairs, Financial Services, Education and Labor, Science and Technology, Transportation and Infrastructure, Natural Resources, Agriculture, and Ways and Means, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned (Waxman 2009).

[5] In order to avoid leakage, it is essential for 100% production credits to be maintained unless and until a border adjustment system is implemented with all trading partners.