Order Code RS22640
Updated February 15, 2008

CRS Report for Congress

What's the Difference? — Comparing U.S. and Chinese Trade Data

Michael F. Martin
Analyst in Asian Trade and Finance
Foreign Affairs, Defense, and Trade Division

Summary

There is a large and growing difference between the official trade statistics released by the United States and the People's Republic of China. According to the United States, the 2007 bilateral trade deficit with China was $256.3 billion. According to China, its trade surplus with the United States was $162.9 billion — $93.4 billion less.

This paper examines the differences in the trade data from the two nations in two ways. First, it compares the trade figures at the two digit level using the Harmonized System to discern any patterns in the discrepancies between the U.S. and Chinese data. This comparison reveals that over two-thirds of the difference in the value of China's exports to the United States is attributable to five types of goods. The second approach to examining the differing trade data involves a review of the existing literature on the technical and non-technical sources of the trade data discrepancies. This report is updated annually, after the release of official trade data by China and the United States.

U.S. trade with the People's Republic of China (China) is becoming increasingly contentious as the U.S. bilateral trade deficit rises.[1] Debate over this trade deficit is hampered because of disagreement between the two countries on how large the deficit actually is. According to official U.S. figures, China surpassed Canada as the largest supplier of U.S. imports, running up a bilateral trade surplus of $256.3 billion in the process. However, according to the Chinese, its trade surplus with the United States was only $162.9 billion — $93.4 billion less than the U.S. figure (see **Table 1**).

The size of the bilateral trade deficit also is an issue in proposed legislation addressing trade relations with China. For instance, H.R. 1002, which would impose tariffs on Chinese imports unless China revalues its currency, explicitly lists the official U.S. figures for the bilateral trade deficit with China among its findings. Similarly, H.R.

[1] For a more detailed discussion of key Sino-U.S. trade issues, see CRS Report RL33536, *China-U.S. Trade Issues*, by Wayne Morrison, and CRS Report RL31403, *China's Trade with the United States and the World*, by Thomas Lum and Dick K. Nanto.

782 and S. 364, which would classify "exchange rate misalignment" or "exchange rate manipulation" as a countervailable export subsidy, both cite bilateral trade deficits as evidence of exchange rate misalignment or manipulation.

Comparison of U.S. and Chinese Trade Data

Table 1 lists the official trade statistics from the United States and China for the years 2001 to 2007, using official trade data.[2] According to both countries, the U.S. trade deficit with China is large and growing. Where the two sides differ is how big the deficit is and how fast it is growing. From the U.S. perspective, its bilateral trade deficit with China more than trebled in value over the last seven years, from just over $83 billion in 2001 to over $256 billion in 2007. However, from the Chinese view, its bilateral trade surplus with the United States increased nearly sixfold over the last seven years, from about $28 billion in 2001 to nearly $163 billion in 2007.

Table 1. U.S. and Chinese Trade Figures, 2001-2007
(billion U.S. dollars)

Year	U.S. Trade Figures		Chinese Trade Figures	
	Exports to China (F.A.S.)	Imports from China (Customs)	Exports to United States (F.O.B.)	Imports from United States (C.I.F.)
2001	19.235	102.280	54.277	26.204
2002	22.053	125.168	69.959	27.228
2003	28.418	152.379	92.510	33.883
2004	34.721	196.699	124.973	44.653
2005	41.837	243.462	162.939	48.735
2006	55.224	287.773	203.516	59.222
2007	65.238	321.508	232.761	69.861

Source: Global Trade Atlas, U.S. International Trade Commission.

Table 1 reveals that most of the discrepancy between the trade data from the two nations stems from significantly different figures for China's exports to the United States. While the difference between the U.S. and Chinese figures for U.S. exports to China has been less than $10 billion over the last seven years, China's figures for its exports to the United States differed by $48.0 billion in 2001 and $88.7 billion in 2007.

Delving into the Data: Examining HS Code

The most widely used system for classifying traded goods is the Harmonized Commodity Description and Coding System, commonly referred to as the Harmonized System or simply HS Code. Every product traded is classified into a 10-digit code. The

[2] China values its export data using the "free on board," or F.O.B. method and its imports are valued using the "cost, insurance, and freight," or C.I.F. method. The United States values its exports using the "freight along side," or F.A.S. method and its imports are valued using the "Customs value" method. The implications of the different evaluation methods is discussed later in this report.

first two digits of the products code corresponds to one of the 98 HS "chapters," that classify all goods in general categories. The U.S. International Trade Commission maintains the U.S. version of the HS Code, officially called the "Harmonized Tariff Schedule of the United States," or HTS. Since both the United States and China release use the same HS chapters, it is possible to compare the trade data at this level.

Table 2 lists *in rank order* the top ten HS chapters according to the difference between the figures for U.S. imports from China and Chinese exports to the United States for 2007. In all 10 cases, the U.S. import figures exceeded China's export figures.[3] The top five HS chapters — footwear (64), machinery (84), electrical machinery (85), furniture (94), and toys and sporting goods (95) — account for over two-thirds (68.5%) of the difference between the U.S. and Chinese figures. The top 10 chapters collectively account for 83.0% of the difference.

Table 2. Top 10 Discrepancies for U.S. Imports from China, 2007

(billion dollars)

HS Chapter	U.S. Imports from China (U.S. data)	China's Exports to U.S. (China Data)	Difference
Electrical Machinery (85)	76.735	56.015	20.720
Toys and Sporting Goods (95)	26.126	10.584	15.542
Machinery (84)	64.043	51.837	12.206
Furniture (94)	20.365	13.701	6.664
Footwear (64)	14.137	8.235	5.902
Woven Apparel (62)	13.407	8.895	4.512
Leather Goods (42)	7.234	4.011	3.223
Knitted Apparel (61)	10.564	7.829	2.735
Plastic (39)	8.256	6.046	2.210
Precious Stones (71)	2.788	1.297	1.491

Source: Global Trade Atlas, U.S. International Trade Commission.

Most of these 10 chapters also ranked high according to both countries in terms of their absolute value of trade. The first six chapters listed in **Table 2** were also the top six ranked chapters in terms of the value of imports from China, according to the United States, and accounted for 66.8% of the total value of imports in 2007. The first four sources for the discrepancies were also the top four sources of exports to the United States, according to China. Of the 10 chapters listed in **Table 2**, eight were among the top 10 sources of China's exports (leather goods ranked 13th and precious stones was 23rd among the HS chapters)[4] and nine were among the top10 in rank order, according to the

[3] The Chinese export figure for chapter 86, "railway and traffic signal equipment," exceeded the U.S. import figure by $1.185 billion in 2006.

[4] According to China's export figures, iron and steel (chapter 73) ranked 6th and Non-railway vehicles (chapter 87) ranked 9th among the chapters.

United States (precious stones was 18th).[5] The 10 chapters listed above provided 75.8% of the value of what the United States said it imported from China in 2007, and 72.4% of what China said it exported to the United States.

On the other side of the trade equation, there were three chapters where China's imports exceeded U.S. exports by more than $1 billion, and two chapters where U.S. exports exceeded Chinese imports by more than $1 billion. China's imports from the United States of machinery (84), electrical machinery (85), and optical and medical equipment (90) were more than $1 billion greater than the U.S. exports to China. However, U.S. exports to China of iron and steel (72) and aircraft (chapter 88) were more than $1 billion greater than China's imports from the United States.

It is also worth noting that on both sides of the trade balance equation, two of the greatest differences in the official trade statistics of the two nations occurred in the same HS chapters — machinery (84) and electrical machinery (85). The discrepancies between the official trade statistics for these two types of goods have been consistently large for flows in both directions since 2001. This indicates a systemic difference in the evaluation of the bilateral trade of these goods.

Explaining the Differences: Summary of the Literature

The question as to why China's official statistics are routinely much lower in value than the official U.S. trade statistics has been and continues to be the subject of analysis by scholars, government officials and other interested parties. The following is a short review of some of the key explanations provided in this literature, categorized into "technical" and "non-technical" explanations. "Technical" explanations refer to procedural or administrative causes for the discrepancies; "non-technical" explanations include causes arising from non-procedural or administrative sources.

Technical Explanations

Official Definitions of Exports and Imports. In its official statistics, China evaluates exports using the more commonly used "free on board," (F.O.B.) definition[6] and the "cost, insurance, and freight, (C.I.F.) definition[7] to evaluate imports. The United States, however, reports its exports evaluated by using the "freight along side" (F.A.S.) definition[8] and values imports using a customs definition.[9] As a result, official U.S. trade data places a lower value on both U.S. exports to China and imports from China than the official Chinese data. In addition, direct comparisons of the official U.S. and Chinese

---

[5] According to U.S. import figures, iron and steel (chapter 73) ranked 8th among the chapters.

[6] "Free on board" includes the cost of getting the goods to port and loading them onto the ship.

[7] The C.I.F. definition adds the cost of insurance and shipping (freight) to the value of the imported goods.

[8] Unlike F.O.B., F.A.S. does not include the costs of clear the goods for export and loading the goods. As a result, the FAS value of a shipment is less than its FOB value.

[9] The customs definition only includes the actual cost of the goods; it does not include the cost of insurance and freight. As a result the customs value of a shipment is less than its CIF value.

trade balances reported in the media are potentially misleading because the goods trades are being evaluated using different methods. For more accurate direct comparisons, the trade data for both nations should be determined by using the same definition, such as general international convention of F.O.B. for exports and C.I.F. for imports.

Definition of Territory. The United States includes Puerto Rico and the U.S. Virgin Islands in its trade data; China does not, a comparatively minor source of difference in the trade figures.

Timing. Because of the distance between China and the United States, it takes time between the export of the goods from China and their import in the United States. Goods in transit at the end of the year are counted as exports by China, but not as imports by the United States. However, the lag between shipments occurs at the beginning and the end of the year, and thus minimize the effect of timing on the overall trade balance difference.

Declaration of Country of Origin. The current practice of U.S. Customs is to rely on the declaration of the importer to determine the country of origin. Some analysts believe that importers are misidentifying a significant amount of imports as Chinese.

Exchange Rates. Because China's currency, the renminbi (people's money), is allowed to fluctuate within a small range against a basket of foreign currencies, the exchange rate between the renminbi and the U.S. dollar changes over time. The value of a shipment may change between the date it leaves China and it arrives in the United States due to changes in the exchange rate. Although the renminbi has appreciated against the U.S. dollar over the last couple of years, exchange rate changes are not considered a major factor in the discrepancy in the trade figures.

Non-Technical Explanations

Intermediation. Although estimates vary, most analysts agree that a large portion of China's exports arrive in the United States via a third party; Hong Kong being the most commonly identified location.[10] The intermediation of shipments raises two sources of discrepancies. First, the exporter from China may not know that the goods will eventually be shipped to the United States, and will list the third party (e.g. Hong Kong) as its destination, but U.S. Customs will list the source of shipment as being China. Second, the value of the shipment may change — with or without any actual change in the goods — between its arrival in and departure from the third location. As a result, the Chinese export value will be less than the U.S. import value.

Under-Invoicing. Some analysts believe that Chinese importers may intentionally under value imports from the United States to lower the import tariff due on the shipment. In addition, some analysts believe that Chinese exporters may intentionally under value exports to the United States to maximize their net proceeds overseas for various tax and

---

[10] After adjusting for re-exports via Hong Kong, Fung, Lau and Xiong reduced the difference between the U.S. and Chinese trade deficit for 2005 from $87.4 billion to $26.5 billion. Tong estimated that adjustments for re-exports resulted in a $22 billion reduction in the trade balance difference for 2003.

regulatory reasons. Due to the "hidden nature" of under-invoicing, it is difficult to assess how much this may be contributing to the differences in the trade data.

Implications for Congress

Just as in past years, the release of the official U.S. trade figures for 2007 was soon followed by expressions of concern about the U.S. bilateral trade deficit with China. Peter Morici, a University of Maryland professor, reportedly made the following comment on the U.S.-China bilateral trade balance, "A gap in exports compared to imports creates a drain on demand for U.S. goods that will push us into a recession."[11]

China, however, does not accept the accuracy of the official U.S. figure for the Sino-U.S. trade balance. In 2007, China's Foreign Ministry spokeswoman, Jiang Yu, said, "Imbalances in China-U.S. trade are an objective fact, but this is also related to the two sides' different statistical methods."[12]

Also, when considering means or actions designed to reduce the U.S. trade deficit with China, it is useful to know which goods are the main sources of discrepancies between Chinese and U.S. trade figures, and how important they are in the overall trade flow between the two nations, so that "trade remedies" may be better targeted at the "problem." According to this report, the main problems appear to be in the trade figures for electrical machinery, machinery, and toys and sporting goods.

For those causes of the differences resulting from data compilation — such as misidentification of value or country of origin of imports — Congress may choose to appropriate additional funding for the responsible U.S. agency and/or provide for training or assistance to China's customs services. In other cases, more detailed analysis of the trade data may be helpful in persuading China to amend or alter its laws, regulations and policies pertaining to the import or export of goods to the United States.

Selected Bibliography on the Differences Between U.S. and Chinese Bilateral Trade Figures

Adjusted Estimates of United States-China Bilateral Trade Balances — An Update. K.C. Fung, Lawrence J. Lau and Yangyan Xiong. June 2006. Stanford Center for International Development, Working Paper No. 278.

Statistical Differences in Sino-US Trade Balance. February 12, 2007. China Online. [http://chinaculture.about.com/library/china/whitepaper/blstrade2.htm]

The U.S.-China Bilateral Trade Balance: Its Size and Determinants. Robert C. Feenstra, Wen Hai, Wing T. Woo, and Shunli Yao. May 1998. Paper presented at the UNDP-HIID Conference on China's Integration in the Global Economy, January 17, 1998.

The U.S.-China Trade Imbalance: How Big Is It Really? Sarah Y. Tong. March 2005. China: An International Journal. Volume 3, No. 1, pp. 131-154.

---

[11] David Goldman and Chris Isidore, "1st Annual Trade Gap Drop in 6 Years," *CNN Money*, February 14, 2008.

[12] *Washington Trade Daily*, February 16, 2007.