



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

Michael F. Martin

Specialist in Asian Affairs

February 18, 2011

Congressional Research Service

7-5700

www.crs.gov

RS22640

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 2010 bilateral trade deficit with China was \$273.1 billion. According to China, its trade surplus with the United States was \$181.9 billion—\$91.2 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 three-quarters of the difference in the value of China's exports to the United States is attributable to five types of goods. Those five types of goods, in order of the size of the discrepancy are electrical machinery; toys and sporting goods; machinery; footwear; and furniture.

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, including an October 2009 joint China-U.S. report on statistical discrepancies in merchandise trade data. The literature reveals that the main sources of the discrepancies are differences in the list value of shipments when they leave China and when they enter the United States, and differing attributions of origin and destination of Chinese exports that are transshipped through a third location (such as Hong Kong) before arriving in the United States.

The size of the U.S. bilateral trade deficit with China has been and continues to be an important issue in bilateral trade relations. Some Members of Congress view the deficit as a sign of unfair economic policies in China, and have introduced legislation seeking to redress the perceived competitive disadvantage China's policies have created for U.S. exporters.

This report is updated annually, after the release of official trade data by China and the United States.

Contents

Introduction	1
Comparison of U.S. and Chinese Trade Data	1
Delving into the Data: Examining HS Code.....	2
Explaining the Differences: Summary of the Literature	3
Technical Explanations	4
Official Definitions of Exports and Imports.....	4
Definition of Territory	4
Timing	4
Declaration of Country of Origin.....	4
Exchange Rates.....	4
Non-Technical Explanations.....	5
Value Differences in Direct Trade.....	5
Under-Invoicing.....	5
Intermediation.....	5
Implications for Congress	6
Selected Bibliography on the Differences Between U.S. and Chinese Bilateral Trade Figures.....	6

Tables

Table 1. U.S. and Chinese Trade Figures, 2001-2010.....	2
Table 2. Top Five Discrepancies for U.S. Imports from China, 2010.....	3

Contacts

Author Contact Information	7
----------------------------------	---

Introduction

The U.S. trade deficit with the People's Republic of China (China) remains a major source of bilateral tension. Members of Congress and other U.S. government officials often point to the bilateral trade imbalance as evidence that China is not competing fairly in the global market.

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 has surpassed Canada as the largest supplier of U.S. imports, running up a bilateral trade surplus in 2010 of \$273.1 billion in the process. However, according to the Chinese, its trade surplus with the United States in 2010 was only \$181.9 billion—\$91.2 billion less than the U.S. figure (see **Table 1**).

The size of the bilateral trade deficit also has been an issue in proposed legislation addressing trade relations with China. For example, the End the Trade Deficit Act (H.R. 1875) introduced during the 111th Congress would have established the Emergency Commission to End the Trade Deficit to “develop a trade policy plan to eliminate the United States merchandise trade deficit by January 1, 2019.” Among the bill’s findings is “The People’s Republic of China, Canada, Mexico, and Japan account for one-half of the [U.S.] trade deficit alone.”

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 2010, using official trade data.¹ According to both countries, the U.S. trade deficit with China is large and, until last year, was growing. Where the two sides differ is how big the deficit is and how fast it has grown. From the U.S. perspective, its bilateral trade deficit with China more than trebled in value over the last eight years, from just over \$83 billion in 2001 to over \$266 billion in 2008. However, from the Chinese view, its bilateral trade surplus with the United States increased more than six-fold over the last eight years, from about \$28 billion in 2001 to nearly \$171 billion in 2008.

¹ 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 are discussed later in this report.

Table 1. U.S. and Chinese Trade Figures, 2001-2010

(billion U.S. dollars)

Year	U.S. Trade Figures			Chinese Trade Figures		
	Exports to China (F.A.S.)	Imports from China (C.V.)	Trade Balance	Exports to United States (F.O.B.)	Imports from United States (C.I.F.)	Trade Balance
2001	19.235	102.280	-83.045	54.277	26.204	28.073
2002	22.053	125.168	-103.115	69.959	27.228	42.731
2003	28.418	152.379	-123.961	92.510	33.883	58.627
2004	34.721	196.699	-161.978	124.973	44.653	80.320
2005	41.837	243.462	-201.625	162.939	48.735	114.204
2006	55.224	287.773	-232.549	203.516	59.222	144.294
2007	65.238	321.508	-256.270	232.761	69.861	162.900
2008	71.457	337.790	-266.333	252.327	81.486	170.841
2009	69.576	296.402	-226.826	220.706	77.433	143.273
2010	91.878	364.944	-273.066	283.184	101.310	181.873

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 \$10 billion or less over the last 10 years, China's figures for its exports to the United States differed by \$48.0 billion in 2001 and \$81.8 billion in 2010.

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 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 use the same HS chapters, it is possible to compare the trade data at this level.

Table 2 lists *in rank order* the top five HS chapters according to the difference between the figures for U.S. imports from China and Chinese exports to the United States for 2010. In all five cases, the U.S. import figures exceeded China's export figures. The top five HS chapters—footwear (64), machinery (84), electrical machinery (85), furniture (94), and toys and sporting goods (95)—account for over three-quarters (77.2%) of the difference between the U.S. and Chinese figures.

Table 2. Top Five Discrepancies for U.S. Imports from China, 2010
(billion dollars)

HS Chapter	U.S. Imports from China (U.S. data)	China's Exports to U.S. (China Data)	Difference
Electrical Machinery (85)	90.823	61.243	29.580
Toys & Sporting Goods (95)	24.978	11.471	13.507
Machinery (84)	82.731	71.653	11.078
Footwear (64)	15.919	10.989	4.929
Furniture (94)	19.956	15.919	4.037

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

All five of these chapters also ranked high according to both countries in terms of their absolute value of trade. They were also the top five ranked chapters in terms of the value of imports from China, according to the United States, and accounted for 64.2% of the total value of imports in 2010. Four of the sources of discrepancies were also the top four sources of exports to the United States, according to China. According to China, footwear was the 7th-largest export to the United States.

On the other side of the trade equation, there were five chapters where China's imports exceeded U.S. exports by more than \$1 billion, and three chapters where U.S. exports exceeded Chinese imports by more than \$1 billion. China's officially reported imports from the United States of miscellaneous chemical products (38); plastic (39); machinery (84); electrical machinery (85); and optical and medical equipment (90) were more than \$1 billion greater than the official U.S. exports to China. Conversely, China's official imports from the United States of iron and steel (72); aluminum(76); and special items (98) were more than \$1 billion less than the official U.S. exports to China.

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.) definition² and the “cost, insurance, and freight,” (C.I.F.) definition³ to evaluate imports. The United States, however, reports its exports evaluated by using the “freight along side” (F.A.S.) definition⁴ and values imports using a customs definition.⁵ 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 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 using the same definition, such as the 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. According to most studies, this is 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, 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 may

² “Free on board” includes the cost of getting the goods to port and loading them onto the ship.

³ The C.I.F. definition adds the cost of insurance and shipping (freight) to the value of the imported goods.

⁴ Unlike F.O.B., F.A.S. does not include the costs of clearing the goods for export and loading the goods. As a result, the FAS value of a shipment is less than its FOB value.

⁵ 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.

change over time.⁶ 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 few years, exchange rate changes are not considered a major factor in the discrepancy in the trade figures.

Non-Technical Explanations

Value Differences in Direct Trade

According to a joint China-U.S. study, about half of the merchandise trade discrepancy between U.S. imports from China and Chinese exports to the United States—or eastbound trade—is attributable to changes in the values of the export price in China and the import value in the United States for goods shipped directly between the two countries. Part of the difference may be caused by mid-shipment transfers in ownership resulting in the new owner adding a markup in the price. Another possible explanation is intentional under-invoicing of exports (see below).

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 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.

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.⁷ 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 may therefore list the third party (e.g., Hong Kong) as its destination, but U.S. Customs may 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. The joint China-U.S. study of discrepancies in merchandise trade statistics determined that value differences account for about half of the differences between Chinese and U.S. trade statistics.

⁶ This remains China’s official exchange rate policy. However, since September 2008, the relative value of the renminbi to the U.S. dollar has been comparatively constant after appreciating over 21% over the previous three years.

⁷ In a 2006 study, 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 by adjusting the trade data for Hong Kong re-exports. In a 2005 study, Tong estimated that adjustments for re-exports resulted in a \$22 billion reduction in the trade balance difference for 2003. See selected bibliography at end of report for complete citations of these studies.

Implications for Congress

The release of the official U.S. annual trade figures has been frequently followed by expressions of concern about the U.S. bilateral trade deficit with China. A recent study by the Economic Policy Institute concluded that 2.4 million jobs were lost or displaced between 2001 and 2008 by growing trade deficits with China.⁸

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."⁹

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 perceived problem. According to this report, the main problems appear to be in the trade figures for electrical machinery, machinery, toys and sporting goods, footwear, and furniture.

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

"Accounting for Discrepancies in Bilateral Trade: The Case of China, Hong Kong, and the United States," by Michael J. Ferrantino and Zhi Wang, *China Economic Review*, vol. 19 (2008), pp. 502-520.

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.

Report on the Statistical Discrepancy of Merchandise Trade between the United States and China, Report by the Joint Commission on Commerce and Trade Statistical Working Group, October 2009.

⁸ Robert E. Scott, *Unfair China Trade Costs Local Jobs*, Economic Policy Institute, EPI Briefing Paper #260, Washington, DC, March 23, 2010.

⁹ *Washington Trade Daily*, February 16, 2007.

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.

Author Contact Information

Michael F. Martin
Specialist in Asian Affairs
mfmartin@crs.loc.gov, 7-2199