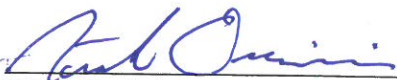


**United States - Brazil**  
**Merchandise Trade Statistics Report**  
**On Differences**  
**2012 - 2014**

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## Research Report

### Background

As part of the Trade Facilitation Working Group, under the U.S. – Brazil Commercial Dialogue, the U.S. Census Bureau has been working with the Brazil Ministry of Development, Industry and Foreign Trade (MDIC) on a reconciliation study to explain and quantify discrepancies in the official bilateral merchandise trade statistics.

The goal of this study was not to change the official statistics of either country, but rather to clarify differences in reporting, thereby facilitating a better understanding among data users in both countries of the actual trade situation. The research is based on the published bilateral merchandise statistical data in the calendar years 2012 through 2014.

Over the three year period, the northbound trade (Brazil to the United States) represented on average only 29 percent of the overall discrepancy total. The remaining 71 percent of the overall discrepancy was seen with the southbound trade (United States to Brazil). However, after all known and measurable differences are adjusted, the remaining discrepancies are small, especially in the southbound direction.

### 2012 - 2014 (Values in Billions of U.S. Dollars)

| Year | Northbound<br>(Bound for United States) |              |            |                              | Southbound<br>(Bound for Brazil) |              |            |                              |
|------|---|--------------|------------|------------------------------|----------------------------------|--------------|------------|------------------------------|
|      | Brazil Exports                          | U.S. Imports | Difference | Difference as a % of Imports | Brazil Imports                   | U.S. Exports | Difference | Difference as a % of Imports |
| 2012 | 26.7                                    | 32.1         | -5.4       | -16.8                        | 32.4                             | 43.7         | -11.3      | -35.3                        |
| 2013 | 24.7                                    | 27.6         | -2.9       | -10.5                        | 34.0                             | 44.1         | -10.1      | -29.7                        |
| 2014 | 26.8                                    | 30.3         | -3.5       | -11.6                        | 35.4                             | 42.4         | -7.0       | -19.8                        |

### Southbound Trade (U.S. exports, Brazil imports)

In 2012 and 2013, southbound discrepancies of published data were 35 and 30 percent of the value of Brazil imports from the United States. In 2014, the discrepancy dropped to 20 percent. Applying estimates of conceptual and methodological differences to the published statistics had significant net effects on the discrepancies. These adjustments include re-exports: where the country of origin is not the United States; geographic differences: where the partner country may not include certain country statistics; For example, the United States includes Puerto Rico and the U.S. Virgin Islands in official statistics. Other countries may publish separately; and repairs: when items are exported solely for the purpose of being repaired and then returned.

Figure 1

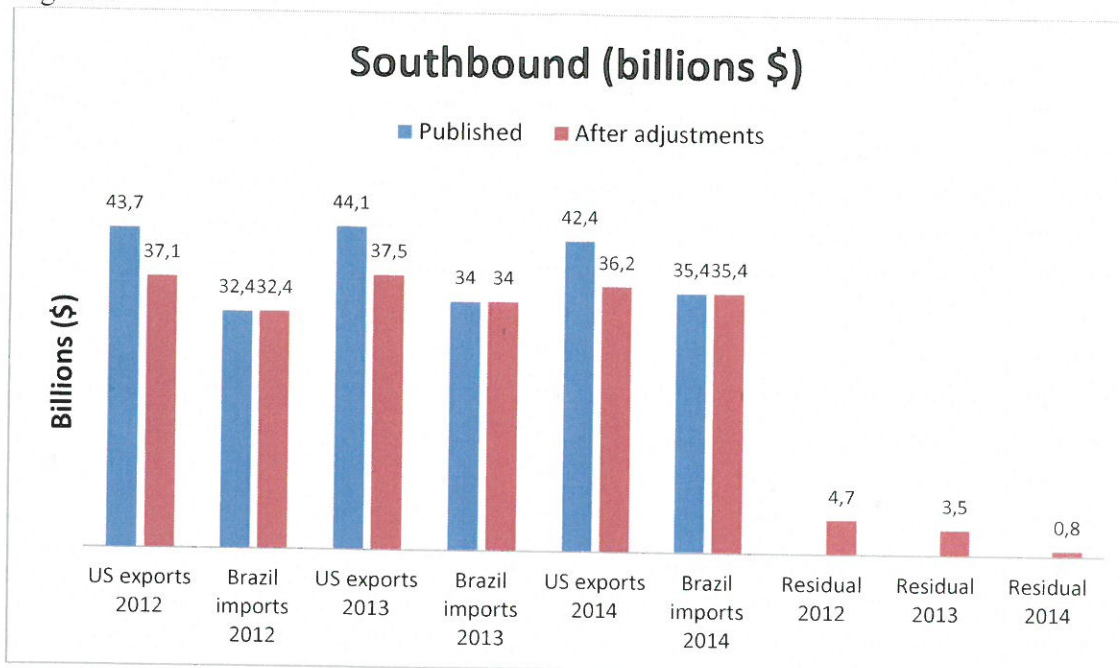


Figure 1 above shows the statistical discrepancy based on officially published data was \$11.3 billion in 2012, \$10.1 billion in 2013, and \$7.0 billion in 2014. Once all the known and measurable adjustments are applied, the discrepancies decreased to \$4.7 billion in 2012, \$3.5 billion in 2013, and 0.8 billion in 2014, or a residual of only 2 percent in 2014.

Besides reviewing conceptual and methodological differences for total trade, we also analyzed the detailed trade transactions at the commodity level to identify causes for discrepancies. To do this, we analyzed the unadjusted transaction level data. Our results isolated 3 harmonized system (HS) chapters that accounted for between 80 and 90 percent of the U.S. export discrepancy. The chapters were 88: aircraft, spacecraft, and parts thereof; 84: nuclear reactors, boilers, machinery and mechanical appliances; and 85: electrical machinery and equipment and parts thereof.

**Chapter 88:** Aircraft, spacecraft, and parts thereof.

The 2014 trade data shows US exports of \$2.1 billion; Brazil imports of \$1.0 billion; for a difference of \$1.1 billion. There are two six-digit HS codes that contribute to the largest portion, about 82.4 percent of the chapter difference.

- (1) HS 8802.40 Airplanes and other powered aircraft of a weight > 15.000 kg (excl. helicopters and dirigibles);
- (2) HS 8803.30 Parts of airplanes or helicopters, n.e.s. (excl. those for gliders).

Further analysis of 8802.40 shows that there were 15 planes exported – 12 domestic, or planes originating in the United States; and three re-exported. The 12 domestic plans were valued at \$414.5 million and the three foreign at \$157.5 million. Under HS 8803.30 there was an additional \$44.8 million of re-export trade for a total of \$201.3 million. Removing the re-export value, which would not be included in the Brazil import statistics because the country of origin

would have been identified as other than the United States, reduces the difference to approximately \$900 million. Other possible explanations include the registration of sales as exports for the United States but not as imports for Brazil, as those airplanes are usually leased by airlines, and not acquired.

**Chapter 84** – Nuclear reactors, boilers, machinery and mechanical appliances; others.

The 2014 trade shows the US exports of \$9.1 billion; Brazil imports of \$6.9 billion; difference of \$2.2 billion. There was one six-digit HS code that contributed over 44% of the chapter difference: HS 8411.12 Turbojets of a thrust > 25 kN.

If the turbines are exported to Brazil for maintenance, this may explain a portion of the difference. Those turbines enter Brazil on a special temporary import status, and would not be included in Brazil's import trade statistics. Further analysis is required to confirm this hypothesis.

**Chapter 85** – electrical machinery and equipment and parts thereof.

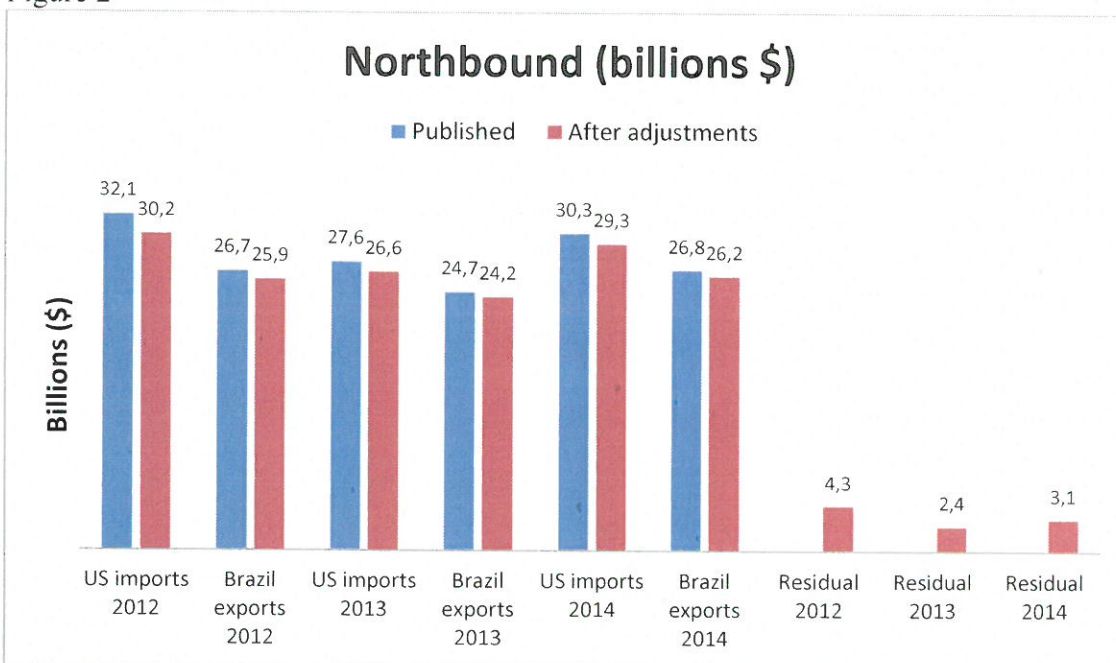
The trade shows US exports of \$4.4 billion; Brazil imports of \$2.4 billion; difference of \$2.0 billion. Further analysis of the export trade shows over \$1.2 billion of re-exports. Removing this amount from the trade reduces the difference to approximately \$800 million.



## Northbound Trade (Brazil exports, U.S. imports)

As shown in Figure 2 below, the northbound statistical discrepancy based on officially published trade data was \$3.5 billion in 2014. After applying the adjustments for conceptual and methodological differences, the discrepancy was decreased to \$3.1 billion. These adjustments included Brazil re-exports: where the country of origin was not Brazil; geographic differences: where the value of Brazil exports to Puerto Rico or the Virgin Islands; and timing: the value of US imports exported from Brazil during previous year. Subsequent discrepancies in 2013 were reduced from \$2.9 billion to \$2.4 billion; and in 2012, from \$5.4 billion to \$4.3 billion. The remaining statistical discrepancy not accounted for in northbound trade for each of these years starting with 2012 was 13, 9, and 10 percent of the total U.S. imports.

Figure 2



Since conceptual and methodological differences only explain a small part of the discrepancies, we looked at other characteristics of the data. A significant portion of the discrepancy in trade figures involve goods that are shipped indirectly via intermediary countries, such as the Netherlands. Indirect Trade may result in value added due to further processing, re-packing or a simple price markup when the goods are re-sold in the intermediary countries. These added costs may contribute to the discrepancy. Discrepancies may also occur due to country attributions in statistics, even though both Brazil and the United States follow international guidelines. In this case, Brazil may record exports to an intermediary country instead of the United States, if it is the last known destination at the time of export from Brazil, while the United States records this trade from Brazil, the country of origin. These situations result in the U.S. import statistics being greater than Brazil's export statistics.

The working group determined goods that are shipped directly from Brazil to the United States without entering the commerce of another country may also explain part of the discrepancy. These shipments often possess higher import values when declared to U.S. Customs because of price markups by intermediary parties.

Further research is needed before adjustments can be made for indirect and direct trade.

Similar to southbound, we then analyzed the detailed trade transactions at the commodity level. To do this, we analyzed the unadjusted transaction level data. Our resulting analysis on the 2014 trade data isolated 2 HS chapters that accounted for over 81 percent of the discrepancy - chapters 27 and 84.

**Chapter 27** – mineral fuels, mineral oils and products; of their distillation; bituminous substances; mineral waxes.

The 2014 trade data shows US imports of \$6.4 billion; Brazil exports of \$2.9 billion; for a difference of \$3.5 billion. There are two six-digit HS codes that contribute to the largest portion, about 98 percent of the chapter difference. They are HS 2710.19 and 2709.00 that contributed 36 percent and 62 percent of the difference respectively. Our analysis has shown a large portion of the trade difference could be from indirect trade through other countries:

HS 2710.19 – Petroleum oils and oils obtained from bituminous minerals (other than crude) and preparations not elsewhere specified or included, containing by weight 70 percent or more of petroleum oils or of oils obtained from bituminous minerals, these oils being the basic constituents of the preparations, other than those containing biodiesel and other than waste oils:

The United States shows \$1.0 billion imports for 2014 and Brazil shows \$3.2 million exports. After further analysis, it appears that a large portion of the trade, approximately 85 percent, is coming indirectly from countries other than Brazil, but still showing a country of origin of Brazil. The largest indirect country shown is the Netherlands, contributing over 76 percent of the total import trade, and over 89 percent of the indirect trade.

HS 2709.00 – - Petroleum oils and oils obtained from bituminous minerals, crude:

The United States shows \$5.2 billion imports for 2014 and Brazil shows \$3.4 billion exports resulting in an approximate \$1.8 billion difference. Our analysis shows that this type of commodity trades in high volumes and routinely enters US foreign trade zones for further processing and storage. A more detailed analysis showed that of the \$5.2 billion of general imports, only \$1.5 billion entered the commerce of the United States directly. The remaining \$3.6 billion entered into a Foreign Trade Zone or warehouse. It is unclear whether goods imported into a foreign trade zone or warehouse may impact the discrepancy.

**Chapter 84** – machinery and mechanical appliances; electrical equipment; parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.

The 2014 trade data shows US imports of \$2.0 billion; Brazil exports of \$3.6 billion; for a difference of -\$1.6 billion.

There was one six-digit HS code (8411.91 -- Turbojets, turbopropellers and other gas turbines, and parts thereof:) that contributed the largest portion of \$1.4 billion, or about 88 percent of the chapter difference. HS 8411.91 shows only \$5.5 million US imports; Brazil shows \$1.42 billion exports. Our analysis is limited since we are not showing the same volume of trade in this commodity classification. The discrepancy is most likely the result of classification differences.

#### **Chapter 98 – Special Classification Provisions.**

The 2014 trade data shows US imports of \$2.5 billion; Brazil exports shows \$0. Brazil does not export under chapter 98 because this is a special import only classification. Most of the trade in this classification are U.S. goods returning after a previous export. Brazil would most likely classify these items under chapters 1 – 97 on the export documentation. Brazil and the United States agree that additional research is needed before an adjustment can be considered.

#### **Conclusion**

In summary, the working group has identified causes and developed some agreed upon estimates to quantify their contributions to the total discrepancy. After applying these estimates to the published trade statistics, the statistical discrepancies for southbound trade in the years of the study significantly decreased. For northbound trade, the discrepancies were smaller and the adjustments accounted for only a fraction of them. Additional research and analysis involving indirect and direct northbound trade could result in larger adjustments. In both directions of trade, the research into the larger discrepancies revealed no errors in the trade statistics. In fact, it appears that many importers and exporters were utilizing the many complex trade rules that allow for the movement of raw materials and parts through multiple countries to maximize profit and lower overall costs.

Given the generally shrinking levels of discrepancies in the years of data studied and lack of finding any real concerns with the published data, it is recommended that no further analysis is needed at this time. However, the group also agreed that additional analysis at a later time when new data are available may be beneficial depending on whether the levels of the discrepancies increase.