

What's Misleading About Global Trade Data?

■ **Joseph G. Carson**
 US Economist and Director—Global Economic Research

The creation of global supply and production networks has blurred traditional trade measures, often assigning high export values to countries that play a small role in process. We think a new framework is needed to better assess global trade flows.

Foreign trade metrics provide important insight into a country's competitiveness, as well as the income and debt flows between nations. However, trade statistics were developed centuries ago when trade involved straightforward transactions of final goods between two companies domiciled in different countries.

It's not so simple today. International production platforms, free trade zones and global supply chains have blurred traditional foreign trade statistics. These trends have led to a dramatic increase in cross-border trade of semi-finished goods and materials, which means that the full export value of a product is often assigned to a country that wasn't primarily responsible for its development or production.

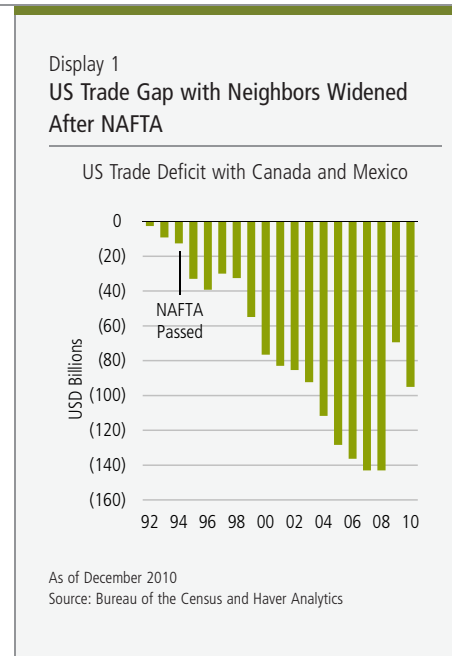
The shortcomings of trade statistics have important implications for economic analysis and policymaking. We believe that bilateral trade flows, as currently reported, are distorted and fail to provide an accurate account of the domestic content in goods that cross borders. Indeed, our

preliminary research has found that the integration of production processes across borders and the globalization of supply chains have led to an overstatement of trade flows and bilateral deficits. We've also found that the position of a country in the global supply chain is highly correlated with its current account position. Much more work needs to be done in this area, but we think it's time to rethink the conventional methods that are used to record trade data.

Who Produces What and Where?

To understand the problem, let's look at a hypothetical case. Take a US-based automaker that produces all the components and parts for a vehicle intended for sale in its domestic market. In this example, we assume that the total value-added of the car is \$10,000 from the start of production to the final sale.

What happens when the company extends its production platform outside the US, to Canada or Mexico? The automaker might find that it's economical to complete a small portion of the vehicle's final assembly



at one of its affiliates' finishing plants and to export it back to the US for final sale. In this case, the final \$1,000 of the assembly is completed at the non-US affiliate, while \$9,000 of the production originated in the US.

As currently constructed, conventional trade statistics would paint a misleading picture of where output occurred. Indeed, since merchandise trade statistics record the full value of each product or item that is moved or sold across borders, the US trade data would show an export valued at \$9,000, while the affiliate in Canada or Mexico would show an export of

\$10,000—higher than the US. Yet 90% of the product's added value occurred in the US and only 10% of its added value came from the non-US affiliate plant. In addition, the US would show a trade deficit of \$1,000 (export of \$9,000 less an import of \$10,000), and the country where the affiliate is located would record a trade surplus of \$1,000 (export of \$10,000 less and import of \$9,000).

Strictly speaking, the trade statistics accurately captured the cross-border transaction. But here's what it missed: First, the trade statistics failed to properly allocate where the bulk of the output occurred. Second, the deficit suggests that the US company would have a financing requirement, while in fact there was no financing risk or external-debt increase whatsoever. As an internal company transaction, no cash changed hands—the parent company would create debit (inventory) on its balance sheet and the affiliate would have a credit (sale).

NAFTA Effects Highlight Problem

Our example of a car assembly is more than hypothetical. Ever since the North American Free Trade Agreement (NAFTA) was created in 1994, an abundance of evidence has accumulated showing that US companies have been involved in similar production arrangements with their affiliate operations in Canada and Mexico. Moreover, US trade flows with Canada and Mexico are dominated by intra-company shipments of American automakers. This helps explain why the US trade deficit with Canada and Mexico rose from \$9.1 billion in 1993 (8% of the total deficit) before NAFTA was passed in 1994 to \$95 billion in 2010 (or 15% of the total) (**Display 1, previous page**).

Global Supply Chains Distort Data

The distortion of trade data is not just a US issue. Indeed, global supply chains complicate the measurement of external

trade because different stages of production now occur across many countries. As unfinished goods cross borders, traditional trade measures value each country's exports as the combination of the value-added in its own economy with the cumulative value up to that stage in the production process. As our example showed, countries positioned at the end of a supply chain would be assigned the full value of a product or item even though most of the value may have been created in earlier stages and in other countries.

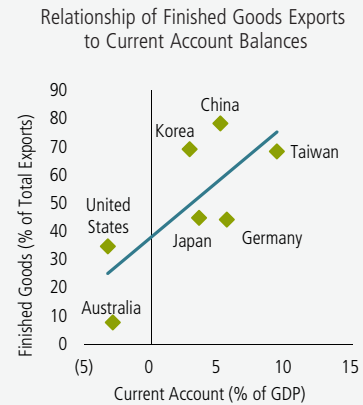
To further examine this point, we looked at finished goods exports as a percentage of total exports and compared them with each country's overall current account and trade positions. Our hypothesis was that countries with significant manufacturing operations at the end of supply chains would report relatively high export figures because trade is reported on a gross value basis and not a value-added basis like gross domestic product. In turn, we expected these countries to have current account and trade surpluses, while countries with manufacturing sectors further down the value chain would have deficits.

For this analysis, we identified eight industries that are primarily involved in the production of finished goods.¹ Most countries don't record or show trade flows based on the three key processing stages—finished goods, intermediate goods and crude materials. As a result, our findings should be viewed as an approximation of the actual percentages.

Trade Positions and Supply Chains

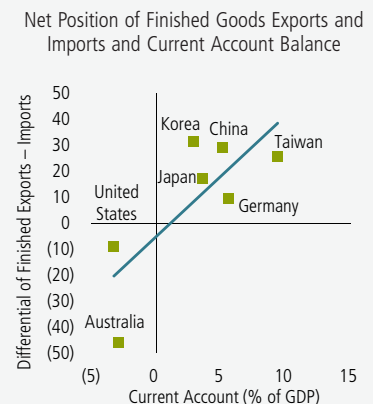
Our research shows that a country's position in the global supply chain is highly correlated with its overall trade position. For example, in 2010 the US and Australia had relatively low percentages of finished goods exports and both countries ran current account deficits (**Display 2**).

Display 2
Trade Balances Influenced by Location in Global Supply Chain



As of December 2010
Source: Haver Analytics and national accounts

Display 3
US Position in Global Supply Chain is One Factor Behind Trade Deficit



As of December 2010
Source: Haver Analytics and national accounts

In contrast, China, Taiwan, Japan, South Korea and Germany recorded relatively high finished goods exports, and all of these countries had trade and current account surpluses.

We also compared each country's concentration of finished goods imports with its exports of finished goods (**Display 3**).

1. The eight industries are: apparel and textiles, leather goods, machinery, computers and electronic products, electrical equipment and appliances, transportation equipment; and furniture.

Obviously, countries on the receiving end of the global supply chain would tend to have relatively high import ratios, since imports are also recorded on a gross basis. The relative position on import and export of finished goods trade flows could factor into a country's overall trade position.

According to our initial research, the net position on export and import finished goods ratios has a high correlation with trade deficits and surpluses. The US and Australia both show a negative spread between exports and imports finished goods, and both operate with current account deficits. All other countries examined had positive spreads between exports and imports as well as between finished good ratios and trade surpluses.

These findings do not imply that a country's position in the global supply chain is the only factor that explains whether or not it runs a trade surplus or a deficit. But the initial research does show that the global supply chain is a factor, along with several other factors including income levels, spending and saving propensities, product development and demographic conditions.

Recent academic studies have found that bilateral trade deficits (such as the US deficit with China) might be half the reported size if trade flows were recorded on a value-added basis and not on a gross basis. So there is a growing body of research that highlights the inaccuracies and overstatement of trade flows.

New Trade Data Framework Needed

Since global supply channels continue to expand, we believe that even larger bilateral trade imbalances may develop in the years to come, or at least, existing imbalances won't improve. This threatens to create tension in financial markets and among policymakers, for example, over currency valuations and deficit financing.

But we would argue that it's time to look beyond the headline trade data, which do not provide an accurate assessment of underlying trade flows, given the distortions outlined here. In order to gain a more accurate measure of underlying trade flows, we think the time has come to create a value-added trade framework that would provide a more accurate depiction of a country's imports and exports for a globalized economy. ■

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