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How tariffs relate to BLS import and export price indexes

By Kevin M. Camp

Amid increasing interest in international trade, tariffs stand out as one of the issues capturing the most attention. Curious Bureau of Labor Statistics (BLS) data users may find themselves asking a number of questions. What are tariffs? How do they work? Do tariffs have an impact on prices published by BLS? This **Beyond the Numbers** article describes the basics on tariffs and how they relate to a particular BLS data series: the U.S. Import and Export Price Indexes.[1]

What are tariffs?

A tariff—also called a duty—is a tax levied by one country on the goods and services imported from another country. Tariffs are applied to specific products. The most common type is an ad valorem tariff, which sets a tax rate on the product's total value reported to the national customs authority. From the U.S. perspective, exported products may be taxed by foreign governments, and imported products may be taxed by the U.S. government.[2] Tariffs may be used by governments to raise revenue from importers bringing goods into the country. Governments also use tariffs to protect domestic industries from foreign competition by enhancing the competitiveness of domestic goods relative to foreign-made goods. Other reasons governments implement tariffs include: to support national defense and domestic employment, to protect domestic producers from unfair subsidies foreign governments give to their producers, to respond to another country's tariffs, to provide environmental and labor protection, and to exert economic leverage.

How do tariffs work?

According to basic economic theory, a tariff, like any tax, will drive a wedge between the price a buyer pays for a good and the price a seller receives for the good. One possible consequence of a tariff is a higher price paid by buyers and a lower price received by sellers (relative to a market in equilibrium). However, market power could change the outcome.[3] When sellers are price makers, sellers could pass the added cost from a tariff entirely on to buyers.[4] By contrast, buyers with market power could exert influence (for example, by not purchasing the good) to shift the entire cost from a tariff to sellers who are price takers.[5] When an import tariff is imposed, the revenue generated benefits the government of the importing country. Domestic companies in the industry subject to the tariff benefit from reduced competition, as comparable foreign products become relatively more expensive. By the same token, foreign companies are disadvantaged because they receive a lower price or experience less demand for their goods. Also, tariffs put upward pressure on prices, placing domestic consumers at a disadvantage. Assuming that retailers and importers do not absorb the tariff, imports of the product are likely to be more expensive which in turn gives domestic producers the power to charge higher prices.

When a country imposes a tariff on another country's exported goods, the affected country may respond with retaliatory tariffs on its trading partner. Given that international trade revolves around specialization, the products and industries facing retaliatory tariffs are typically different from those subject to the original tariff.[6] For example, if Country A is specialized in apple production and Country B is specialized in lumber production, a lumber tariff imposed by Country A could be met by a retaliatory apple tariff imposed by Country B. As a result, the government in Country A could indirectly place domestic apple growers at a disadvantage by placing a tariff on lumber imports from Country B.

Different tariff effects

BLS data users may expect U.S. import and export prices to reflect the aforementioned higher prices faced by buyers as a result of tariffs. However, tariffs are not included in the prices used to calculate the U.S. Import and Export Price Indexes. The U.S. Import and Export Price Indexes factor into the calculation of gross domestic product (GDP) in the role of deflating the net trade (exports minus imports) component. Tariffs are taxes, and taxes are not included when calculating net trade. Instead, taxes enter the GDP calculation as a component of

government expenditures.[7] Thus, the price information collected for the U.S. Import and Export Price Indexes does not include tariffs in order to stay consistent with the treatment of net trade in GDP.

The stockpiling effect

Although the index calculation does not include the tariff paid, tariffs can have an impact on price trends before the tariff is imposed and when the tariff is in place. Recall that a tariff is a tax on an imported good at the point of arrival to the importing country. This tax is expected to increase the cost of the good for the importer. Therefore, when the tariff is announced, importers expect future price increases and subsequent shortages. The importers could respond by stockpiling the product. This short-run demand increase (with no change in supply) would tend to push prices upward, even before the tariff takes effect (regardless of the tariff amount itself).

The substitution effect

When the tariff goes into effect, the non-tariff component of a product's price may fall. A decline in prices could occur if suppliers (exporters) decrease prices to offset the higher cost to the buyer or if buyers (importers) switch to a lower cost replacement. Suppliers from the exporting country may choose to reduce the price to retain competitive advantage, market share, and customers. Buyers may choose to look elsewhere for lower priced goods or delay purchases. When costs rise, the establishment buying the good may react by substituting the good with a related product from a different country or domestic producer instead (i.e., not subject to the import tax). If the buyer finds no alternatives, the importing company will pay higher costs because of the tariff on the product.

The pass-through effect

When domestic prices change as a result of adjustments in tariffs or exchange rates, the impact on producer and consumer prices is called the pass-through effect. In the face of competition, an importer has little desire to pass the tariff cost on to consumers because consumers would likely switch to a different, less expensive, product. However, specialty goods, for which few substitutes exist, may not face the same constraints. For example, if a steel tariff leads to increases in the price for steel, prices for automobiles (that use steel as an input) could rise as well. The price impacts of tariffs could extend through the economy—possibly resulting in inflation.

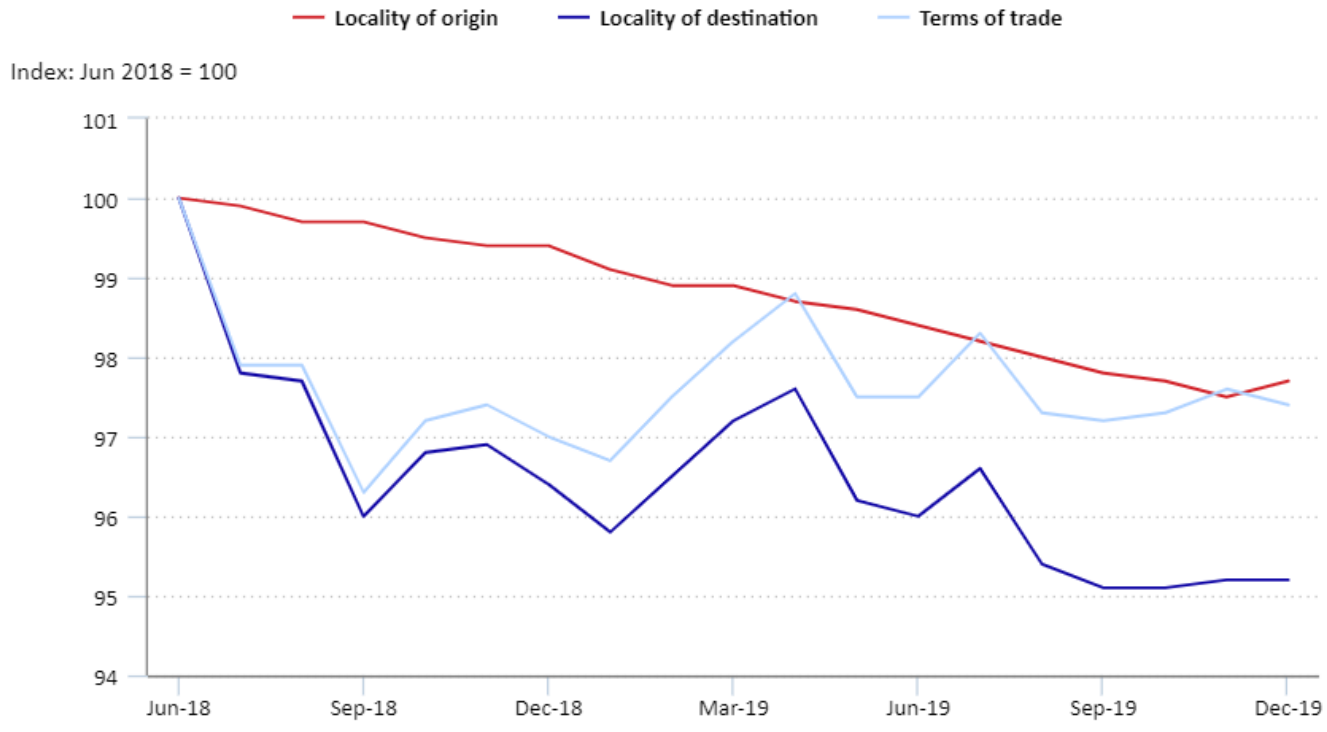
Country-specific comparisons

As mentioned, BLS does not account for tariff amounts in prices used for calculating the U.S. Import and Export Price Indexes. However, all other things being equal, the U.S. Import and Export Price Indexes show the supply- and demand-based price changes that result from tariffs being announced or imposed. Country-specific comparisons can be made using U.S. Import and Export Price Indexes, namely the import price indexes by locality of origin (LOO), the export price indexes by locality of destination (LOD), and terms of trade (TOT) indexes.[8] The LOO and LOD indexes measure price changes for imports from and exports to selected countries, regions, and country groupings, and the TOT indexes measure the relative price differences in the imported and exported baskets of goods between the United States and major trading partners, such as China.

As an example, country-specific price indexes show recent trends in U.S.–China import and export prices for merchandise goods. From June 2018 to December 2019, prices for imports from China to the United States decreased 2.3 percent. Prices for imports from China recorded only one monthly increase over the period. Meanwhile, the largest month-to-month decline was a 0.3-percent drop in January 2019. Export prices to China also fell from June 2018 to December 2019. Monthly price decreases of 2.2 percent in July 2018, 1.7 percent in

September 2018, and 1.4 percent in May 2019 led to an overall 4.8-percent drop during the period. Data users examining these figures should note the import and export mixes between the United States and China are not identical, meaning the United States imports different goods than those exported to China and vice versa. In brief, nonmanufactured goods—for which prices tend to change more often—make up a large share of U.S. exports to China but not Chinese imports to the United States.

Chart 1. U.S. Import and Export Price Indexes and terms of trade for China, June 2018–December 2019



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics, International Price Program.

The U.S.–China terms of trade index indicates a decline in U.S. competitiveness.[9] U.S. terms of trade with China declined 2.6 percent from June 2018 to December 2019. The drop represents a reduction in the purchasing power of U.S. exports to China, compared to imports from China. During this period, China's currency weakened relative to the U.S. dollar, and the stronger dollar also reduced U.S. competitiveness by making U.S. goods more expensive. The largest monthly terms of trade decrease during the period was a 2.1-percent drop in July 2018. By contrast, monthly increases in February, March, April, July, October, and November drove the U.S. terms of trade with China up 0.4 percent in 2019.

Conclusion

BLS does not include tariffs in estimates derived for the U.S. Import and Export Price Indexes. However, tariffs may still have an impact on the index values as market participants change behavior on the basis of stockpiling, substitution, and pass-through effects. Data users can track the U.S. Import and Export Price Indexes before, during, and after tariff announcements to gain insight on tariff-based price changes.

This **Beyond the Numbers** article was prepared by Kevin M. Camp, an economist in the Office of Prices and Living Conditions, U.S. Bureau of Labor Statistics. Telephone: 202-691-7101; Email: Camp.Kevin@bls.gov.

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NOTES

[1] For information on tariffs and the Producer Price Indexes, see "Frequently Asked Questions," number 24, https://www.bls.gov/ppi/ppifaq.htm#24.

[2] The U.S. International Trade Commission handles the tariff rates that the United States sets for imports. For more information, see https://hts.usitc.gov/current.

[3] Market power is the ability to influence prices for a given product by controlling the supply or demand for the product.

[4] A price maker is the entity commanding market power, and therefore the ability to set prices, for a particular product.

[5] Unlike price makers, price takers are entities lacking market power and the ability to set prices.

[6] The basis for understanding the relationship between trade and specialization comes from David Ricardo's classic writings on comparative advantage. Given different resource endowments and production capabilities, each country specializes by focusing on what it can produce most efficiently. Then, countries engage in trade to import what they do not produce domestically.

[7] Detailed information on BEA calculation of the national income and product accounts and GDP is available, see https://www.bea.gov/sites/default/files/methodologies/nipa_primer.pdf.

[8] For more information, see, "New Measures of Prices for Global Trade," U.S. Bureau of Labor Statistics Commissioner's Corner blog, November 15, 2018, https://blogs.bls.gov/blog/2018/11/15/new-measures-of-prices-for-global-trade/.

[9] The terms of trade index is calculated as the price index for U.S. goods exported to China divided by the price index for Chinese goods imported to the United States.

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