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Bilateral Trade Balances Under Focus[1]

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ABSTRACT

Bilateral trade balances have become a growing focus of attention, as some policymakers are concerned that their large and growing size may reflect asymmetric obstacles to trade. A close examination of the drivers of bilateral trade balances, however, reveals that macroeconomic factors, rather than bilateral tariffs, have been the main drivers of growing imbalances. While tariffs have played a modest role in the evolution of bilateral balances, declines in tariffs have lifted productivity by allowing a greater international division of labor, including through participation in global value chains. A sharp increase in tariffs would therefore create significant spillovers, leaving the global economy worse off. From a policy perspective, our analysis suggests that the discussion of external imbalances is rightly focused on aggregate trade balances and the macroeconomic factors that drive them. Targeting particular bilateral trade balances with bilateral tariffs will likely mostly lead to trade diversion, leaving the aggregate trade balance unchanged. Instead, further multilateral reductions in trade barriers would benefit trade and, over the longer term, macroeconomic outcomes.

[1] This article is based on the presentation delivered by Florence Jaumotte at the Belgian Financial Forum in Brussels on April 23, 2019 and based on joint work with Johannes Eugster, Margaux MacDonald, and Roberto Piazza in IMF (2019). The views expressed in this article are those of the authors and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

Introduction

Bilateral trade balances (the difference between the values of exports and imports between two countries) have come under increased scrutiny recently. Some policymakers are concerned that their large and rising size may be the result of asymmetric obstacles to trade that distort the international trade system. But is the focus on bilateral balances the right one?

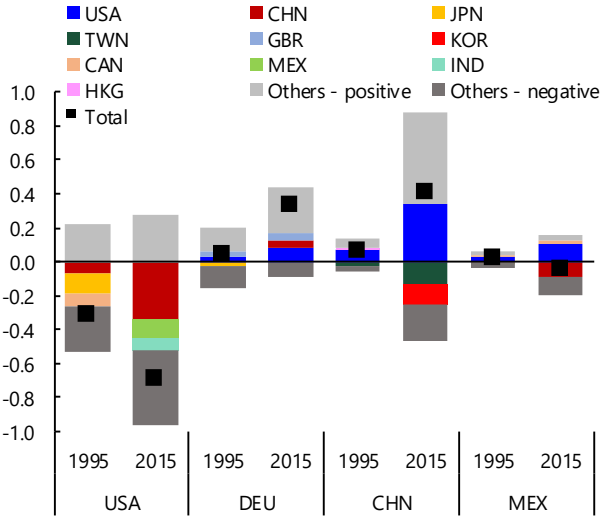
In a new study (IMF, 2019), we take a closer look at this issue and attempt to answer three questions:

- What are the main drivers of bilateral trade balances?
- What is the link between aggregate and bilateral trade balances?
- When bilateral tariffs are raised to reduce a specific bilateral trade balance, what are the effects on the countries involved and their spillover effects on third countries?

Bilateral trade balances are not necessarily bad

Figure 1. Bilateral Trade Balances by Major Partners[1]

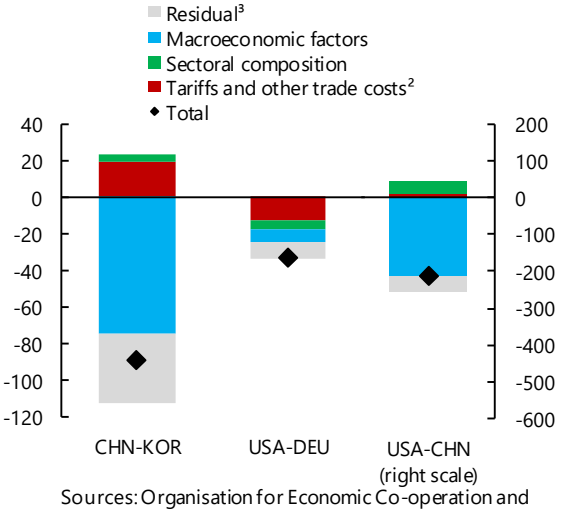
(Percent of global GDP)



Sources: Organisation for Economic Co-operation and Development, Trade in Value Added database; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.
[1]Top three partners shown per year.

Figure 2. Drivers of Changes in Selected Bilateral Trade Balances, 1995-2015[1]

(billions of US dollars)



Sources: Organisation for Economic Co-operation and Development, Trade in Value Added database; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.
[1] Average value 2010-2015 minus average value 1995-1999.
[2] This includes tariffs and free or preferential trade agreements.
[3] The residual is the sum of the model residuals plus the approximation error.

Economists have typically focused on understanding a country's aggregate (or overall) trade balance, which is the sum of its bilateral trade balances with all other countries. Figure 1 shows the aggregate and top 3 bilateral trade balances for a few large countries in 1995 and 2015. In general, countries have both positive and negative bilateral trade balances. This reflects the international organization of production: trade allows countries to specialize in what they do best and then trade with each other. Countries have deficits to countries from which they mostly import, and surpluses to countries to which they mostly export. For example, Mexico has both large positive and large negative bilateral trade balances with its trading partners, but a small overall trade balance.

There can be a problem, however, when most bilateral balances of a country are one-sided, either on the negative side as in the United States, or on the positive side, for instance in Germany. This is usually a reflection of large overall trade balances that tend to be shaped

by macroeconomic factors such as aggregate savings and investments or distortive policies large enough to impact aggregate outcomes.

This first look at bilateral trade balances suggests that they are indeed shaped by several broad forces: (i) *macroeconomic factors*, more specifically the relative evolution of overall demand and supply in both trading partners, as captured by their overall trade balances; and (ii) *tariffs and other factors* that determine bilateral trade intensities between two countries.

Economic forces, not tariffs, drive changes in trade balances

To examine the drivers of bilateral trade balances, we use the standard model of the trade literature, the gravity model, which explains bilateral exports. Results can also be used to explain imports and thus the bilateral trade balances. The gravity model is a useful tool because it distinguishes between three types of determinants of bilateral exports:[2]

- Macroeconomic factors: Bilateral exports increase with gross output of the exporter and gross spending of the importer, scaled by world output;
- Trade costs: They can be natural (e.g., geographic proximity, common language) or trade-policy related (e.g., tariffs, free trade agreements); both bilateral and average trade costs of the importer and exporter matter; and
- Sectoral composition of supply and demand: bilateral trade increases if the sectoral structures are complementary (e.g., if the structure of exporter's supply matches the structure of the importer's demand). This partly captures trade that arises from the international division of production.

Our analysis shows that the evolution of bilateral trade balances over the past two decades was, to a significant extent, driven by changes in macroeconomic conditions in both trading partners. Macroeconomic factors refer to the relative movement of aggregate supply and demand in both trading partners, which also determine aggregate trade balances. Focusing for example on the U.S.-China pair (Figure 2), macroeconomic factors accounted for about 95 percent of the change in their bilateral trade balance. This reflected that:

- Aggregate supply in China was growing faster than aggregate demand; that is, a growing imbalance between supply and demand in China; and
- To a lesser extent, the fact that demand was growing faster than supply in the United States.

In contrast changes in bilateral tariffs played a smaller role over the period of analysis. This in part reflects the fact that tariffs were already low in the mid-1990s in many countries

[2] The gravity model is estimated at the sector level, with 63 countries and 34 sectors over 1995-2015.

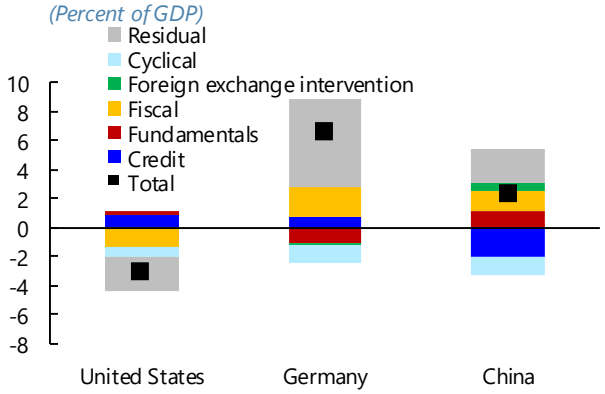
and that subsequent tariff reductions were reciprocal, with offsetting effects on bilateral trade balances.[3]

A closer look at macroeconomic factors

From a policy perspective, it is important to take a closer look at the drivers (and possible macroeconomic distortions) underlying the macroeconomic imbalance between supply and demand in each country—also reflected in their aggregate trade balance. Drivers include fundamental factors, such as demographics and the level of economic and institutional development; macroeconomic policies, in particular fiscal policy and credit cycles; and—in some cases—exchange rate policies and domestic supply-side policies (for instance, widespread subsidies to exports or to production that affect all trading partners in the same way).[4] Figure 3 shows for selected large economies the contribution of some of these factors to the aggregate trade balance over 2010-17. We focus here on two examples, highlighting the role of fiscal policy in the United States and supply-side policies in China.

Figure 3. Contributions of Macroeconomic Drivers to the Aggregate Trade Balance, Average 2010-2017[1]

(Percent of GDP)



Source: IMF staff calculations.
[1]Contributions were obtained by regressing the countries' trade balance-to-GDP ratio on the standard EBA variables.

In the *United States*, the credit boom leading up to the 2008-09 global financial crisis had been an important driver of the trade deficit as it had boosted demand beyond production. While, with the crisis, financial excesses were corrected, this was offset by strongly expansionary fiscal policy following the crisis. Going forward, there is concern that the recent U.S. fiscal stimulus will lead to a further deterioration of its trade deficit. Indeed, it is boosting the economy's demand, when demand is already strong and is likely to increase imports from all trade partners.

[3] The impact of macro factors depends on the initial bilateral trade balance between the two countries—in particular, whether the bilateral balance was large and positive or negative. Since trade costs determine countries' comparative advantage and the international division of labor over the longer term, this suggest another way tariffs can leave a mark on the path of bilateral trade balances over time.

[4] This decomposition uses the IMF External Balance Assessment (EBA) framework which estimates the contributions of fundamentals and policies to the current account balance of a country. Since the aggregate trade balance of a country is a large component of the current account, the EBA model can also be applied to the trade balance directly.

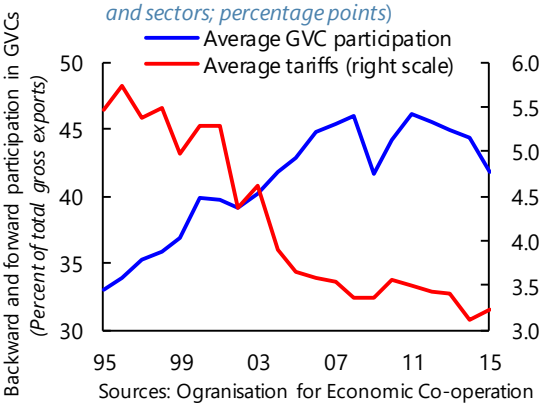
In *China*, the conventional macroeconomic factors that are at play in other economies also operate. For example, a credit boom has helped reduce the trade surplus in recent years by increasing overall demand in the economy. But China is also being discussed as one example of a country where what we call supply-side policies may have played an important role. One factor we highlight is the potential role of widespread government subsidies, in particular to state-owned enterprises. These subsidies can artificially make firms more competitive. This, in turn, can result in larger exports and trade surpluses with all partners.

Tariffs are costly for economic activity

The analysis so far has found that the direct impact of tariffs on bilateral trade balances was small over the period of analysis. But this does not mean that tariffs do not hurt countries. Over the longer term, large and sustained declines in tariffs have shaped the international division of labor, as firms have adjusted domestic and international investment and production structures, including by organizing themselves into global value chains. The reduction in tariffs and transportation and communication costs since the mid-1990s has gone hand in hand with a significant increase in global value chain participation which—loosely speaking—is the share of exports that crosses at least two borders (Figure 4).

Figure 4. Tariffs and Global Value Chain Participation[1]

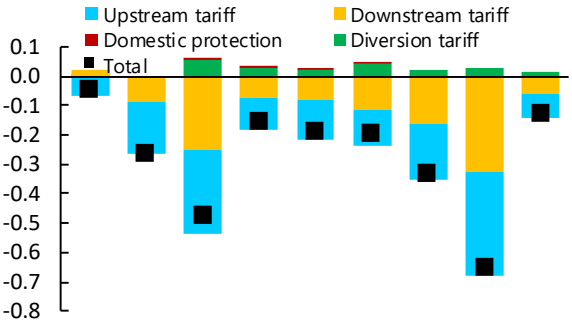
(Value added-weighted average over countries and sectors; percentage points)



Sources: Ogranisation for Economic Co-operation and Development, Trade in Value Added database; World Bank, *World Integrated Trade Solution (WITS)*; and IMF staff calculations.
Note: GVC = global value chain. GVC participation is the backward and forward participation in GVCs as a percent of total exports. Tariffs are for agriculture, mining and manufacturing sectors.
[1]2012-15 extrapolated based on TIVA 2018.

Figure 5. Illustration of the Effect of a 1 Percentage Point Generalized Tariff Increase on Real Value Added[1]

(Percent of GDP)



Source: IMF staff estimates.
Note: Data labels use International Organisation for Standardization (ISO) country codes.
[1]Effects are partial equilibrium estimates based on a country-sector level analysis. The figure shows the change in the simulated tariff spillovers between 1995 and 2011, the last year for which such an exercise is possible given data constraints. 2011 is a good approximation of current global value chain links because most of the growth in global value chain integration took place before 2011.

Increased global integration of production through global value chains creates scope for specialization and productivity improvements; but its flipside is the increased risk of international spillovers, including from increases in tariffs. A significant increase in tariffs would have ripple effects through the global value chains, amplifying the detrimental impacts on output, employment and productivity for the countries directly affected and for others upstream and downstream in the global value chain. The intuition is very simple: as firms use intermediate inputs from other sectors and countries, tariffs imposed in those sectors and countries can affect their cost of production. A tariff on imported inputs directly increases the cost of production and makes a firm less productive. To the extent that costs are passed on, such an upstream effect can also be indirect through other countries and sectors. What holds for tariffs upstream also applies to tariffs down the value chain. A firm selling intermediate goods to a country that imposes a new tariff can be affected through reduced demand from customers.

Simulations (based on country-sector estimations) illustrate that the output cost of a generalized 1 percentage point increase in manufacturing tariffs would be larger today than it would have been in the mid-1990s, particularly so for countries highly integrated in manufacturing supply chains (e.g., Korea and Germany) (Figure 5).[5]

Escalation of U.S.-China trade tensions

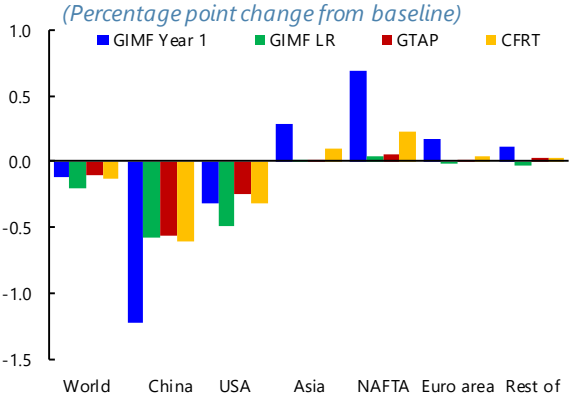
We conclude our study by examining the effects of a potential escalation of the bilateral tariff tensions between the United States and China by assuming an illustrative increase of bilateral tariffs on all traded goods by 25 percentage points.[6] Simulations using general equilibrium models suggest three main takeaways:

[5] The simulations illustrate partial equilibrium effects and do not include channels other than the direct trade effects (for example, policy uncertainty, confidence effect, and financial conditions).

[6] See IMF (2019).

Figure 6. Macro Effects from a 25 Percent Increase in Tariffs Affecting all US–China Trade: Real GDP[1]

(Percentage point change from baseline)



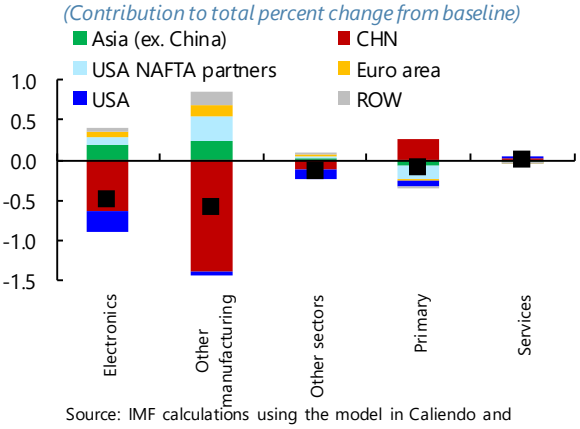
Source: IMF calculations.

Note: CFRT = Caliendo and others (2017) model; GIMF = Global Integrated Monetary and Fiscal model; GTAP = Global Trade Analysis Project; LR = long run; NAFTA = North American Free Trade Agreement. In the figure, NAFTA is NAFTA countries excluding US and Asia is Asian countries excluding China.

[1]Effects are simulated from three general equilibrium models: GIMF, GTAP, and CFRT.

Figure 7. Sectoral Effects from a 25 Percent Increase in Tariffs Affecting all US-China Trade: World Real Value Added

(Contribution to total percent change from baseline)



Source: IMF calculations using the model in Caliendo and others (2017).

Note: = NAFTA = North American Trade Agreement; ROW = rest of world. Data labels use International Organization for Standardization (ISO) country codes.

- First, higher bilateral tariffs are costly for the global economy and for the economies involved, with China and the United States suffering the most (Figure 6). This results from a decrease in their external demand and a decline in returns to capital induced by tariff distortions.
- Second, bilateral tariffs do not help reduce the aggregate trade balances of the two countries, because of trade diversion. Unless macroeconomic conditions change (that is, unless the country as a whole spends less or produces more), a U.S. tariff on imports from China will just shift U.S. demand to other trade partners. Therefore, the reduction in the U.S.-China trade balance will likely be offset by changes in the U.S. bilateral trade balances with other trade partners. Mexico and Canada are set to benefit the most from trade diversion, reflecting their close proximity to and strong trade relations with the United States; east Asia would also benefit to some extent. Bilateral tariffs are thus not only costly for the countries involved but they are also likely to be ineffective in addressing external imbalances.
- Finally, higher bilateral tariffs would lead to significant sectoral reallocations as GVCs are repositioned (Figure 7). In particular, over the long term, there would be sizable shifts in manufacturing capacity away from China (and the United States) toward Mexico, Canada and east Asia. These sectoral shifts would imply sizable job losses in specific sectors, especially in the United States (agriculture, transport equipment) and China (electronics, the “other manufacturing” sector).

Conclusion

Two main policy conclusions emerge from our analysis. First, the discussion of external imbalances is rightly focused on aggregate trade balances and current accounts—as well as the macroeconomic policies and distortions driving them. Unless macroeconomic conditions change, using bilateral tariffs to target a specific bilateral trade balance is likely to lead to compensating adjustments in other bilateral trade balances due to trade diversion, leaving the aggregate trade balance broadly unchanged. Second, further multilateral reductions of tariffs and non-tariff barriers would benefit the global economy, by boosting trade and leading to further gains in output, employment and productivity. But while our findings suggest lower barriers to trade would benefit macroeconomic outcomes, there are valid concerns about the distributional effects of trade. It is therefore important to have policies in place to ensure that the benefits from trade are widely shared and that those affected are adequately protected.

Reference

International Monetary Fund, 2019. "The Drivers of Bilateral Trade and The Spillovers from Tariffs" in World Economic Outlook, Chapter 4. April 2019.