



UNIVERSITÀ
di **VERONA**

Department
of **ECONOMICS**

Working Paper Series
Department of Economics
University of Verona

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WP Number: 3

May 2019

ISSN: 2036-2919 (paper), 2036-4679 (online)

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May 13, 2019

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Abstract

On January 22, 2018, the Trump administration imposed Safeguard Tariffs on \$8.5 billion of imports of solar panel and \$1.8 billion for washing machines. This move marked the beginning of what is now considered a trade war the USA is fighting against China and other traditional American trade partners such as EU and NAFTA members states. The “official” motivation for Trump’s trade war is that the persisting US trade deficit depends on “unfair competition” by trade partners. Tariffs are therefore seen as a political tool for levelling the field of international trade. In this paper we present and discuss two main objections to this view: the first is that current and trade account disequilibria are ultimately due to differences between domestic savings and investments driven by macroeconomic fundamentals which in general do not depend only on the trade policies of foreign countries. The second objection consists in the fact that the role of the US dollar as the “world’s money” in the current asymmetric international monetary system makes the US trade deficit both inevitable and sustainable in the long run. Unless protectionist measures permanently affect the domestic savings-investment balance they alone cannot eliminate a structural trade deficit.

JEL codes: F13, F33, F41

The persisting US trade deficit: is protectionism the right answer?

1. INTRODUCTION

On January 22, 2018, at the recommendation of the US International Trade Commission (USICT), the Trump administration imposed Safeguard Tariffs on \$8.5 billion of imports of solar panel and \$1.8 billion for washing machines. This move marked the beginning of what is now considered a trade war the USA is fighting against China and other traditional American trade partners such as EU and NAFTA members states. In subsequent months, the battlefield enlarged rapidly with Trump's announcement of tariffs for all trading partners of 10% on aluminium and 25% on steel (March 1, 2018), and the imposition of tariffs on a long list of products in response to alleged Chinese unfair practices in the field of technology and intellectual property (June 15, 2018) as well as proposing a 25% tariff on the import of cars and auto parts based on a National Security Investigation which started on May 23, 2018. Trade partners hit by the new course of USA trade policy, such as Canada, China, the EU, Korea and Turkey retaliated immediately with tariffs on a broad set of US agricultural and industrial products¹. At the same time, the parties filed WTO disputes for reciprocal violations of international trade agreements.

The "official" motivation for Trump's trade war is that the persisting US trade deficit depends on "unfair competition" by trade partners who benefited from "disastrous" free trade treaties damaging the US economy and threatening national security. In the official view of the Trump administration, tariffs are a political tool for levelling the field of international trade re-creating a situation of "fair competition".

The new course of the Trump administration is a radical departure from the traditional post-war American support for free trade and multilateralism which has dominated US foreign policy since

¹ An updated timeline for the "trade war" initiated by the Trump Administration is available at the Peterson Institute for International Economics: <https://piie.com/blogs/trade-investment-policy-watch/trump-trade-war-china-date-guide>.

WWII. Rather than relying on the WTO legal procedure for solving trade disputes, Trump believes that bilateral negotiations allow the USA to obtain more favourable trade concessions from foreign partners and that previous free trade agreements were negative for the US economy. China is the main target of the new US protectionist policy but Europe, Canada and Mexico have also been heavily involved. As far as the latter two countries are concerned, Trump obtained an initial success in the new US-Mexico-Canada-Agreement (USMCA) signed in November 2018, which contains country-of-origin rules, labour provisions and US access to the Canadian dairy market which are more favourable to US producers than the previous NAFTA. On the contrary, the disputes with China and the EU are still unsettled and the perspective of an ongoing trade war between the three major economic powers² is a serious threat to the prospects of the world economy after the global financial crisis of 2007.

Trump's protectionism is not an isolated event because signals of a political switch toward growing limitations of international trade (mainly of a non-tariff nature) had already emerged in the aftermath of the "great recession" of 2007/2008. Since 2008, according to WTO, EU Commission and Global Trade Alert data, trade-restrictive measures have constantly outweighed liberalizing measures (KommersKollegium, 2016). In the period October 2017-October 2018, import restrictive measures by WTO members amounted to \$588.3 billion, seven times more than the previous year (WTO, 2018). Fortunately, nowadays the intensity of protectionist policies is not yet comparable to the "Great Depression" in the 1930s, often used as a benchmark in the analysis of the recent "great recession" caused by the financial crisis of 2007/2008 (O'Rourke, 2018; Eichengreen and Douglas, 2010; Gergiadis and Grab, 2016). However, the slide to generalised protectionism is still a possibility and its costs for the world economy cannot be overlooked.

² China, the EU and the USA rank respectively as the world's top, second and third exporters and third, second and first for imports. Worldwide, in 2017, they generated 37% of export and 38% of import flows (WTO database).

We hope the risk of a trade war vanishes, but doubt that Trump’s strategy for reducing the US trade deficit can work. In this paper we present and discuss two main objections: the first is that current and trade account disequilibria are ultimately due to differences between domestic savings and investments driven by macroeconomic fundamentals which in general do not depend only on the trade policies of foreign countries. The second objection consists in the fact that the role of the US dollar as the “world’s money” in the current asymmetric international monetary system makes the US trade deficit both inevitable and sustainable in the long run. Unless protectionist measures permanently affect the domestic savings-investment balance they alone cannot eliminate a structural trade deficit (Bergsten, 2017).

2. “GLOBAL IMBALANCES” AND THE US BALANCE OF PAYMENTS

The problem of the US trade deficit is not new. Figure 1 shows that since the beginning of the 1980s the trade balance has been continuously in deficit and that the current account was in surplus solely in 1992. From that year, the external deficit of the USA rapidly increased reaching a negative peak in 2006. In the period following the financial crisis of 2007/2008, the trade deficit improved but persisted, stabilizing at around 2.5% of GDP.

Figure 1 also shows the financial account which mirrors the trend of current and trade accounts. It shows the foreign financing of the US excess of imports over exports which involves the continuous accumulation of foreign liabilities. As a consequence, nowadays the US has the largest gross foreign debt in the World. According to the US Treasury Department³, the absolute value of the US gross foreign debt was \$6,946 billion at the end of 2003 and \$19,557 billion in the third quarter of 2018. In the same period, the US gross foreign debt/GDP ratio rose from 47% to 105%. The net US foreign investment position (the difference between US foreign assets and liabilities) has been

³ <https://www.treasury.gov/resource-center/data-chart-center/tic/Pages/external-debt.aspx>.

negative too, following an upward trend since the middle of the 1980s (Kouparitsas, 2004). At the end of July 2018, it stood at \$9,627.2 billion, 51% of GDP.

At the beginning of the 2000s, the negative trend in the US trade balance was already worrisome and gave rise to an intense debate about “global imbalances”⁴. It can be seen as a situation in which a single country, the USA, is the world “buyer of last resort”, being simultaneously both the world’s biggest importer and the main receiver of international financial flows. In that debate, scholars mainly focused on the topics of the sustainability of the trade deficit, the consequences of the rapid accumulation of foreign debt, the “up-hill” direction of financial flows from emerging countries to the US and the degree of devaluation of the dollar necessary to redress the trade imbalance.

The financial crisis in 2008 and the following “great recession” drove the academic and political debate in other directions until Trump revamped the interest in US trade imbalances with announcements favourable to a protectionist policy stance.

What is the current situation of US foreign trade? The disaggregate analysis of bilateral trade flows shows that the EU is the first global trading partner of the USA (Table 1) but China stands out as the main individual partner, both in terms of total trade and imports (Tables 1 and 3). Furthermore, the US deficit vis-a-vis China is almost twice the deficit with the EU and five times larger than the deficit with Mexico. On the surplus side, the USA runs positive net trade flows with relatively minor economies (Table 2).

The list of country with whom the USA runs the largest trade deficits explains why Trump wanted to re-negotiate the NAFTA treaty with Canada and Mexico and why his protectionist policy is targeting China and major European countries (Germany in particular).

⁴The list of scholars contributing to the “global imbalances” debate is very long and includes, among others: Clarida (2007); Kehoe et al., (2018); Fiorentini and Montani (2010, 2012); Feldstein (2008); Dettmann (2011); Caballero and Krishnamurthy (2009); Blanchard and Milesi-Ferretti (2009); Astley et al. (2009).

3. SAVINGS, INVESTMENT AND THE US TRADE DEFICIT

According to a well-known national account identity

$$CA = S - I = S_{\text{c}} + S_{\text{*}} - I \quad (1)$$

In any period, a current account imbalance is basically the result of differences between total domestic saving (comprising personal S_{c} and government $S_{\text{*}}$ saving) and investments I which in turn depend on the complex interaction of consumer preferences, producer expectations, fiscal and monetary policies. This account identity implies that a current account deficit may be the result of very different trends in savings and investments. A country with a high rate of investment is very likely to have a current account deficit, as may be expected in the case of developing countries which need largescale investments in order to accumulate physical capital. In other cases, the external deficit may depend on insufficient savings. Looking at the US total savings and investments in the period 1980-2018 (Figure 2), five facts stand out: savings have been constantly below investments; between 1998 and 2008 the widening negative gap between savings and investments was clearly due to a drop in the savings rate, down 7.7 percentage points from 22.9% to 15.2% of GDP; on the contrary, investments were relatively stable, at around 22% of GDP. The recession of 2009 is associated with a simultaneous and sharp drop in both savings and investments; after 2010, both savings and investments recovered but the negative gap persisted.

More interesting information is shown in Figure 3: personal and government savings rates in the period 1980-2017. First of all, there is a continuous decline in personal savings from 1980 to 2007, the year in which it reached the historical low of 3.82%. In the following decade it rebounded but never returned to the initial level, remaining below the long-run average of around 7% of GDP.

In the same time span, with the exception of 2000, the federal government contribution to US savings has been steadily negative. Four different periods can be identified. From 1980 to 1992, Reagan and Bush Senior fiscal and military policies kept the US federal budget in deficit. The

Clinton presidency (1993-2001), gradually reduced the budget deficit and eventually achieved a surplus (positive savings) in the year 2000. From 2001 to 2009, under the George W Bush administration, the federal budget was again in deficit due to the cost of the Iraq war and the fiscal expansion implemented in reaction to the financial crisis of 2007. Since then (under Obama and Trump) the deficit has continued and now the US federal budget deficit stands at around 5% of GDP.

To sum up, it appears from the data that the lengthy decline of the US personal savings rate is an important component of the persisting current account and trade deficit of the USA and that the simultaneous trends in personal and government savings rates go a long way in explaining the sharp deterioration of the US current account and trade balance in the 2000s.

The fiscal policy stance under different administrations explains the dynamics of the net savings/disposals of the government, but what should be made of the decline in the personal savings rate? The discussion of this topic started at the end of the 1980s and continued in subsequent decades (Carroll and Summers, 1987; Gale and Sabelhaus, 1999; Parker, 1999; Maki and Palumbo, 2001; Marquis, 2002; Rajan, 2010; Reich, 2010; Caporale et al., 2013; Bosworth et al., 1991; Brenner et al., 1994).

Significant explanations put forward in this literature focus on the impact of financial innovation on household income constraint and the increase in the inequality of income distributio⁵. Income concentrated among the wealthiest in the US population went hand in hand with the stagnation of income of average American workers who reacted by turning to consumer credit in order to maintain their consumption habits. Financial innovation and deregulation accommodated this trend

⁵The problem of the worldwide rise in income inequality within countries and the related concentration of wealth in favour of a few individuals is now a well-known phenomenon with a growing literature analysing its causes and consequences. Among others see Davies et al., (2011); Piketty, (2014); OECD (2011a; OECD, 2011b); Fiorentini and Montani (2012); ILO (2008).

by loosening household income constraints, reinforcing the drop in the personal savings rate. The widespread use of subprime loans and the real estate bubble leading to the financial crisis in 2007-2008 were part of this pattern (Reich, 2010; Rajan, 2010; Lawrence, 2008).

Long running domestic dynamics are clearly behind the drop in the US personal savings rate which cannot simply be seen as the passive adaptation of the US economy to an exogenous surge in foreign savings as in the “global savings glut”(GSG) explanation of “global imbalances” and the US trade deficit as suggested by former Fed President Ben Bernanke in a famous speech to the Federal Reserve Board on March 10, 2005 (Bernanke, 2005). His argument was that an excess of savings in the rest of the world invested in safe American assets forced the USA to run a financial account surplus necessarily matched by a current account deficit (Figure 1)⁶. This interpretation relies on the link between the savings and investments gap and the current account balance discussed above and attributes the responsibility of the external US deficit to dynamics outside the country. However, it does not explain why the personal savings rate in the USA was declining long before the dramatic surge in current account surpluses in partner countries such as China, which occurred only at the beginning of the 2000s as shown in Figure 3⁷. Furthermore, the GSG explanation does not take into account the implications of the international role of the dollar in terms of the long running sustainability of US current and trade account deficits. This topic is discussed in the following section.

4. THE DOLLAR AND THE US TRADE DEFICIT

⁶ According to balance of payment accounting rules, the sum of current (CA) and financial (FA) Accounts (including central bank operations) is always zero: $CA + FA = 0$. It follows that a current account deficit has to be matched by an equivalent financial account surplus (and vice-versa): $FA = -CA$.

⁷ See Fiorentini and Montani (2012), p. 55-63 and Zhou Xiaochuan (2009).

The previous section investigates the role of the fall in the savings rate in relation to the US trade deficit. This section deals with the problem of its long run sustainability and here it is worth recalling a few definitions related to the open macroeconomy. The current account CA in any period t is the trade balance TB plus the interest earned from the net holding of foreign assets B

$$CA = TB + iB \quad (2)$$

At the end of every year, the net stock of foreign assets changes whenever the trade balance is not zero. If the trade balance is in surplus (deficit), the stock of foreign assets increases (decreases) so that

$$CA = \Delta B \quad (3)$$

$$\Delta B = B_t - B_{t-1} \quad (4)$$

Combining equation (2) with (3) and (4) and re-arranging the terms, we obtain

$$-B_{t-1}(1+i) = TB_t - B_t \quad (5)$$

Solving the difference equation (5) through forward iteration leads to the well-known intertemporal solvency condition (Obstfeld and Rogoff, 1998)

$$-B_t = \sum_{s=0}^{\infty} \left(\frac{1}{1+i}\right)^s TB_{t+s} \quad (6)$$

The meaning of equation (6) is the following: a country with an initial period t negative foreign asset position is solvent if the current net foreign debt $-B_t$ is matched by the discounted value of

the sum of future trade balances. In an intertemporal framework (as in the real world), the trade balance does not need to be continuously in equilibrium. However, in the case of the accumulation of foreign liabilities due to past trade deficits, the country has to run future surpluses in order to obtain the financial resources needed to repay the current debt and the interest due to foreign lenders.

In mathematical terms, in equation (6) the right-hand sum of future trade balances may contain sequences of trade deficits provided the overall sum is positive. In other words, sooner or later, trade deficits must be converted into surpluses⁸. Solvency means that it is not possible to run an indefinite sequence of deficit because the stock of foreign debt would keep rising up to a point in which confidence in the sustainability of the foreign debt vanishes and foreign investors in surplus countries would refuse to re-finance the debtor country causing sudden outflows of capital and a balance of payment crisis.

The above discussion does not take into account the fact that in the real world international trade involves different currencies and foreign exchange rates. The consumption of foreign goods and services creates demand for foreign currency to pay for imports. However, in a cash in advance setting equation 6 still holds when countries are subject to the same type of liquidity constraints⁹:

$$M_{/01} \geq P_j C_j \quad (7)$$

$$M_{/01}^* \geq P_j^* C_j^* \quad (8)$$

The meaning of inequalities (7) and (8) (asterisks indicate foreign variables) is that in any period t the value of consumption of domestic and foreign goods (imports) is constrained and cannot exceed

⁸ Equation 4 is the open macroeconomy version of the well-known “no Ponzi game” condition for solvency in financial markets.

⁹ See Obstfeld and Rogoff (1998).

the stock of domestic and foreign money carried over from the previous period $t-1$. This is the case in a symmetrical world monetary system, in which no “key” or “dominant” currency exists, everybody is subject to the same solvency condition (equation 6) and consumers in every country need both domestic and foreign currency in order to consume home and foreign goods. An obvious implication is that exporting is the only way any country may obtain the foreign currency needed to pay for imports.

However, the current world monetary system is not symmetrical and the currency of one country, the US dollar, is used to carry out most international real and financial transactions and to set the prices of oil and other raw materials and commodities. According to European Central Bank data¹⁰ (European Central Bank, 2018) the dollar ranks first in every type of international transaction. At the end of 2017, 62.7% of Central Bank foreign exchange reserves, 62.2% of international debt and 56.3% of international loans were in dollar-denominated assets. In the same year, the dollar comprised 43.8% of foreign exchange turnover and was the most commonly used international payment currency (39.9%).

The key role of the dollar in the world’s monetary system has significant implications in terms of global imbalances and the sustainability of US trade deficits. In general, consumers in the country issuing the world’s key currency are subject to a different liquidity constraint than the constraints defined by inequalities 7 and 8.

To illustrate this, assume a simplified pure monetary economy in a world with only two countries, Home (US) and Foreign (Rest of the world). Suppose that the Home country issues the world’s key currency (dollar). As a consequence, Home consumers can buy (import) foreign goods using their domestic currency because transactions in the international market are in dollars so their liquidity constraint becomes

¹⁰ See also Bank of England (2017).

$$M_{/01} \geq P_j C_j + S_j P_j^* C_j^* \quad (9)$$

where S_j is the period t foreign exchange rate. Inequality (9) says that Home (US) consumers can buy both domestic and foreign goods with dollars and therefore the Home country exerts “seigniorage” over foreign goods. In other words, Home consumers do not need to accumulate foreign currency through exports and can obtain foreign real resources just in exchange for dollars. On the other side, the Foreign country needs dollars in order to import Home goods so it is still bound by the set of liquidity constraints (7) and (8).

A first straightforward consequence is that the Foreign country has to run a trade surplus in order to obtain dollars and the Home country has to run a trade deficit. Global imbalances are a “natural” consequence of the asymmetric monetary system because the trade deficit is how the Home country supplies the dollars required for the functioning of the world economy.

Another consequence is that the asymmetric role of Home and Foreign currencies in the international monetary system, which involves different liquidity constraints, generates different intertemporal solvency conditions.

Combining equations (2), (3), (4) with the liquidity constraint (9) and defining α as the terminal values of Foreign consumption of Home goods, clearly in a pure monetary economy, the Home country intertemporal solvency condition differs from (6) and becomes¹¹

$$M_{/01}^{B,D} = \sum_{j < /} P_j TB_j + \alpha \quad (10)$$

The left-hand side of equation (10) represents foreign holdings in dollars, i.e. the Home country net foreign debt (equivalent to the $-B_{/01}$ left-hand side element in equation (6), while the right-hand

¹¹ For a detailed proof see Fiorentini and Montani (2012) p. 71-78. See also Dettmann (2011).

side contains the value of the sum of future trade balances plus the terminal value of the foreign consumption of Home goods, which is a positive number.

Comparing (6) with (10), it is clear that given the same current foreign debt, the value of the sequence of future trade balances is smaller in (10) than (6). This means that, because of the key role of the dollar in the world's monetary system, the Home country, namely the USA, can run a longer sequence of trade deficits than the rest of the world. In other words, it can sustain longer period of consecutive trade deficits before violating the intertemporal solvency condition. In the current international monetary system, an endogenous mechanism has led to global imbalances and contributed to the genesis of the persisting US trade deficit. Given this and the link between the savings-investments gap and the US trade deficit, can protectionist trade policy eliminate external imbalances as the Trump administration believes? The following section investigates this issue.

5. IS PROTECTIONISM THE RIGHT ANSWER?

As discussed in the above sections, macroeconomic fundamentals determine the structural trade balance of a country so, in general, trade policies can affect the overall balance between imports and exports only if they are able to modify the savings-investments gap in a given country (Flaig et al., 2018; Joy et al., 2018; Barattieri, 2014; Bergsten, 2017; Pettis, 2013). Both liberalizing and restrictive policies may eventually work but the channels through which they operate are indirect, very often uncertain and depend on whether economic actors see them as permanent or temporary. Their impact on income, productivity, comparative advantages and specialization differs too and is usually positive in the case of trade enhancing policies, negative in the case of trade restrictions (Flaig et al., 2018). Furthermore, the global nature of modern value chains makes the picture much more complicated than the descriptions in standard international economics textbooks. Today, the production of a large range of goods and services requires both domestic and foreign inputs and very often the domestic value-added content of imported intermediate and final goods is

significant¹². Think of a firm which “splits” the entire production process into separate parts allocating some stages of production to foreign countries in order to exploit cheaper labour costs or a local comparative advantages (Baldwin, 2016): such a firm usually supplies high value-added components to foreign branches which assemble the final product and ship it back to the country where the headquarters of the firm are located. In many cases, the international value chain includes more than two countries and the production of goods requiring the trade of parts and components between at least three countries, i.e. so-called “triangular trade”, is very common. In the above example, a tariff on the imported final goods would actually also be a tariff on domestic components and ultimately would damage the domestic not only the foreign producer. As documented (Lovely and Liang, 2018), current US-China trade fits this picture very well, particularly in machinery, computers, telecommunications and electrical equipment which nowadays account for 54 percent of US imports from China¹³ In these industries, China imports high value-added inputs from the US and exports final goods to developed countries (USA and EU). The fact that since 2014, at least 60 percent of Chinese export to the USA originated in foreign invested enterprises, mostly owned or part owned by US multinationals, confirms the complexity of trade patterns and the relevance of intra-firm international trade.

One consequence of the complex structure of the value-chain of modern international firms is that the final general equilibrium effect of a tariff is far from clear-cut and protectionism may end up in an own-goal, particularly in the case of trade in the high-tech industry where the international unbundling of production is particularly intense and the originating country, such as the USA, has comparative advantages (Lovely and Liang, 2018; Baldwin, 2016; UNCTAD, 2019). What is

¹² The use of value-added trade instead of gross trade statistics enables better tracking of the domestic and foreign contents of goods produced by international value chains. According to Flaig et al. (2018) the US gross trade deficit in manufacturing goods decreases by 60% in value-added terms .

¹³ It is worth noting that the share of labour-intensive goods in Chinese exports decreased from 26% of US imports in 1997 to 12% in 2017 (Loving and Liang 2018).

certain is that tariffs on imports change relative domestic prices and through this channel affect the domestic allocation of factors of productions and investments. Higher relative prices due to a tariff attract investments in the protected industry but at the same time, the higher price of imported inputs may increase costs and depress investments in other industries. The final aggregate impact on the country's investments depends on the relative strength of the two effects so a negative rather than positive impact on the country's trade balance is possible. In the case of intermediate goods, such as steel and aluminium which the US administration targeted in the first wave of the Trump "trade war", tariffs protect the producers of import substitutes but they also indirectly damage all the other domestic industries which need that input. Finally, even if successful in reducing bilateral deficits, tariffs such as those recently applied by the Trump administration do not mean that the overall US trade deficit improves, due to trade diversion effects. Indeed, domestic producers and consumers may shift their demand toward other countries so fewer imports from China may be offset by more imports from third parties. This is exactly what the United Nation Conference on Trade and Development predict in the latest report on trends in trade policy. According to (UNCTAD, 2019), "...bilateral tariffs are not very effective in protecting domestic firms...are valid instruments to limit trade from the affected country" but also significantly divert trade which, in the case of the USA-China tariff war, would mostly favour the EU, Mexico, Japan and Canada. According to UNCTAD, EU exports should increase by \$70 billion (\$50 billion to the USA and \$20 bn. to China) while each of the other three countries should capture about \$ 20 billion of the US-China trade.

The reaction of countries hit by higher tariffs on their exports is also important in assessing the general equilibrium effects of protectionist policies. In the absence of retaliation by exporting countries, standard international trade policy theory shows that a "big country" like the USA can obtain welfare gains limiting imports through tariffs if they cause the before-tariff foreign price of imports to decrease so terms of trade improve. However, this is not the case when the exporting countries retaliate, as China and the EU are currently doing, giving rise to a tit for tat "trade war".

So, in the end, what can be expected from a trade war between the US and the rest of the World?

Several studies and estimates by international institutions, research centres and scholars have already attempted to forecast the impact of the recent US protectionism on trade flows, GDP, employment, prices and welfare. Given the relatively short period of time since the announcement of the new protectionist course of US foreign trade policy, studies published in 2017 and 2018 took into account several alternative scenarios under different tariff levels with or without foreign retaliation¹⁴. Only at the beginning of 2019 did studies begin to be based on actual 2018 data on US and foreign tariffs and trade flows. Two of these found a complete pass-through of tariffs into import prices in the USA and in countries which retaliated against US tariffs (Amiti et al., 2019; Fajgelbaum et al., 2019). This is evidence that tariffs have not reduced the before tariff price of imported goods so there are no gains in terms of trade and consumers are fully paying the cost of protectionism because of the higher price of imported goods and their domestic alternatives¹⁵.

An additional cost for consumers is that tariffs tend to reduce the number of different goods they may choose from because the tariff-included price of imported varieties may be too high, leading to a demand switch in favour of tariff-free domestic varieties where the price increases due to increased demand and less foreign competition. Summing the direct tariff channel to the indirect variety channel, Amiti et al. (2019) estimate that in the USA a 10% increase in tariffs causes a 10.4% increase in domestic prices which can be broken down into 9.9% due to tariffs and 0.5% due to the reduction in variety. They also show that a cost-push effect is at work in the supply side of

¹⁴ See Flaig et al. (2018); Yalcin et al. (2018); Gabriel et al. (2017); Meixin et al. (2018); Kim and Shikler (2017); Chunding et al. (2018); Slopek (2018); Noland (2018).

¹⁵ The most commonly used econometric methodology consists in estimating computable general equilibrium models for the world economy.

¹⁶ In standard trade policy theory, this is what happens in the “small country case”, where tariffs do not reduce the world price of the imported goods and the price paid by domestic consumers rises by the full amount of the tariff. In the absence of gains in the terms of trade, in this case, the net change in welfare is always negative.

the US economy and estimate that producer prices in 2018 were 1.1% higher compared to 2017 because of the new tariffs. Recent data, therefore, confirm the prediction of earlier simulation studies of a net welfare loss for the USA. According to these, the Rest of the World would lose welfare and GDP so the most likely result of Trump's trade war is a lose-lose situation.

As far as GDP is concerned, simulation finds a negative impact of the protectionism introduced by Trump both on US and world GDP (Yalcin et al., 2018; Flaig et al., 2018; Kim and Shikher, 2017; Meixin et al., 2018; Chunding et al., 2018; Thompson and Jones, 2019). The range of estimated values is wide, depending on retaliation or its absence and the assumptions regarding the degree of escalation in tariff levels (Thompson and Jones, 2019). In the worst scenario of a "full-blown global trade war" with rapidly rising tariffs on all products in every country, the estimated range of the decrease in world GDP is 2.3-2.8%. The impact on US GDP would be even more severe with projections ranging from -2% to -5%. In less extreme scenarios, closer to the current situation, the estimated GDP loss ranges from less than -0.1% to -1.0% both for US and world GDP. One study (Fajgelbaum et al., 2019) based on observed 2018 data, found that the as yet limited trade war started by Trump has resulted in the USA in a modest annual GDP loss of around \$7.8 billion or 0.04%. This figure is the result of an estimated aggregate consumer and producer loss due to higher prices of \$68.8 billion (0.37% of GDP), a gain for exporters of \$21.6 (0.12% of GDP) and an increase in tariff revenues of \$39.4 billion.

In absolute terms, in the USA, so far, the aggregate GDP loss has been quite low but the distribution of the costs of protectionism among consumers and workers is unequal, with significant regional and geographical differences. Noland (2018) finds that retaliatory Chinese tariffs on industrial goods would severely hit employment in important urban areas of the USA such as New York, Los Angeles, Seattle, Boston, Chicago, San Francisco, Dallas, Washington, Houston and Philadelphia while Chinese tariffs on agricultural goods would hit rural counties in Mississippi, Arkansas, Tennessee and Missouri.

(Fajgelbaum et al., 2019) focus on the local distribution of real income changes due to US and retaliatory tariffs. They estimate that on average the real wages of workers in the tradable sector fell by 0.7%. However, since tariffs on US imports are applied mainly to industrial products, while Chinese retaliatory tariffs target important US agricultural goods such as soybeans, rural Midwest states have been suffering more than the industrial areas of the Great Lakes and the Northeast. Paradoxically, Trump's trade policy is damaging the US States that were the most decisive in the Presidential election.

Finally, turning to trade flows, from the previous discussion in sections 3 and 4 we predict a reduction of bilateral trade in goods hit by the increase in tariffs but not a permanent effect on the overall trade balance. Available data and the current empirical literature on the impact of Trump's protectionism confirms this theoretical hypothesis. Available simulations of the global impact of US protectionism find that trade restrictions would have a significant effect on GDP and welfare but not on trade imbalances because of the simultaneous reduction of imports and exports caused by retaliation (Flaig et al., 2018; Yalcin et al., 2018; Gabriel et al., 2017). Looking at actual US trade figures after the start of the trade war in 2018, according to US Census Bureau statistics¹⁷, US trade in goods and services recorded a deficit of \$ 622 billion against \$552 bn in 2017 . Data for the first few months of 2019 confirm this trend which is due to a larger deficit in the trade in goods which more than offsets a slight improvement in the surplus in the service sector. Performing a detailed analysis of the trade flows in goods hit by the trade war and based on tariff schedules released by the USITC, the Ministry of Finance of China, The Department of Finance of Canada, the Office of the President of Mexico and the World Trade Organization, (Fajgelbaum et al., 2019) find that in 2018 US tariffs reduced values and quantities of imports by 20% and 23% on average respectively, while US exports subject to foreign retaliatory tariffs fell by 21% in value and 23% in quantity. In the first year of implementation, the protectionist policy of Trump therefore had an immediate and

¹⁷ https://www.census.gov/foreign-trade/statistics/historical/exhibit_history.pdf.

significant negative impact on specific import and export flows but not on the overall trade balance of the USA. This in the short run, but could protectionism have the desired effects in the medium-long run? It may but only if the savings-investments gap narrows, which in the USA requires a higher level of domestic savings. Given the negative effects of the trade war on GDP and real wages and the adverse government budget effects of fiscal reform by the Trump administration, the likelihood of a long run positive effect of protectionism on the US trade balance is not very high (Noland, 2018). In this regard, Kim and Shikler (2017) use a GCE model of the world economy to estimate both the short and long run effects of protectionism on the trade balance and find a slight short run temporary improvement which disappears in the long run when the trade balance returns to the initial situation. Other policies rather than tariffs and protectionism are necessary to target a trade deficit.

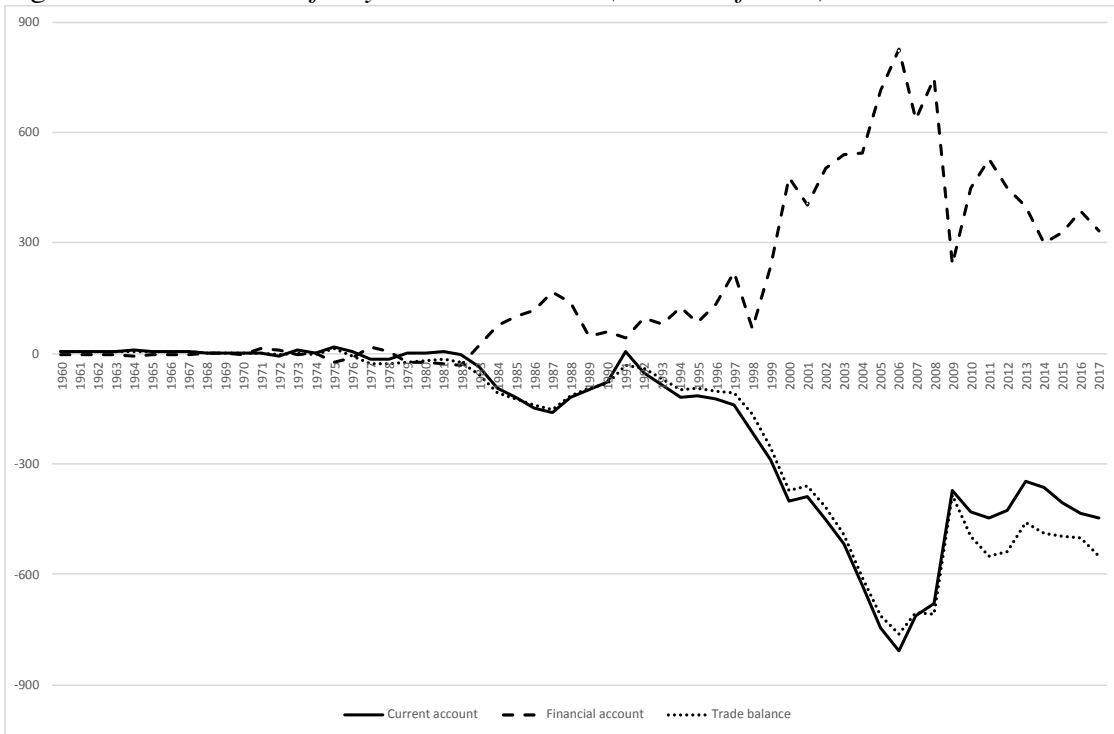
6. CONCLUSION

In a tweet dated March 2, 2018 Trump wrote that "...trade wars are good and easy to win"¹⁸. More than one year later, things appear to be much more complicated than he believed and there is no clear winner yet. US trade imbalances are far from being reduced, the economic costs of protectionism are more and more evident and the benefits for the USA are yet to emerge. In the first year of the trade war, economic and welfare losses were minor in absolute terms; however, the strains on the WTO multilateral framework and institutional mechanisms for solving trade disputes are worrisome and introduce growing uncertainty in the world economy. Trump's unilateral economic policy decisions, the negative attitude to international economic and political institutions and the continuous complaints about "unfair competition" targeted to traditional allied countries are dissipating the political cohesion, trust in and cooperative spirit of the most important world

¹⁸ <https://www.cnbc.com/2018/03/02/trump-trade-wars-are-good-and-easy-to-win.html>.

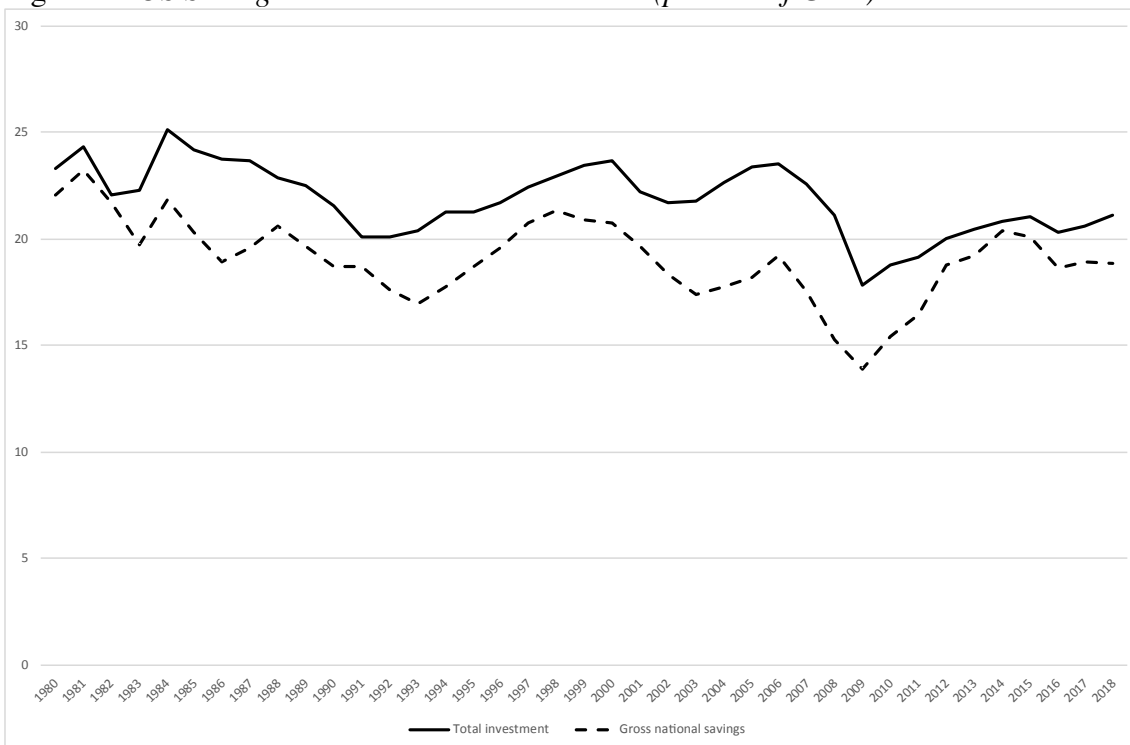
democracy, fundamental in the long period of economic growth since WWII. This type of institutional and political damage can be as severe as the pure economic costs of protectionism. This paper focuses on the economic analysis of the structural causes of the US trade deficit in order to show that the protectionist strategy of the Trump administration will fail. In our final comments, we would like to stress that more than simple trade policy is involved in Trump's actions. On the domestic side, the search for voter consensus may explain some of the specific actions the Trump administration has taken in the field of international trade. On the international side, the consequence of rapid Chinese economic growth fuelled by massive investments in technology together with FDI expansion in Asia, Africa and several advanced countries is that in a few decades the Asian giant is certain to become the most important competitor of the US in almost every field. The strategic confrontation with China in the Pacific area in the attempt to limit Chinese expansion and to keep US supremacy intact is therefore at the core of the current US international policy. Our hope is that this confrontation does not escalate beyond the economic field and that new cooperative solutions are found. In this regard, a reformed and political united EU could play an important positive role as a major US ally. We believe that the future of the "trade war" not only depends on US and Chinese actions but also on the decisions we Europeans take regarding the process of political and economic integration in our continent.

Figure 1 - US Balance of Payments 1960-2017 (billions of USD)



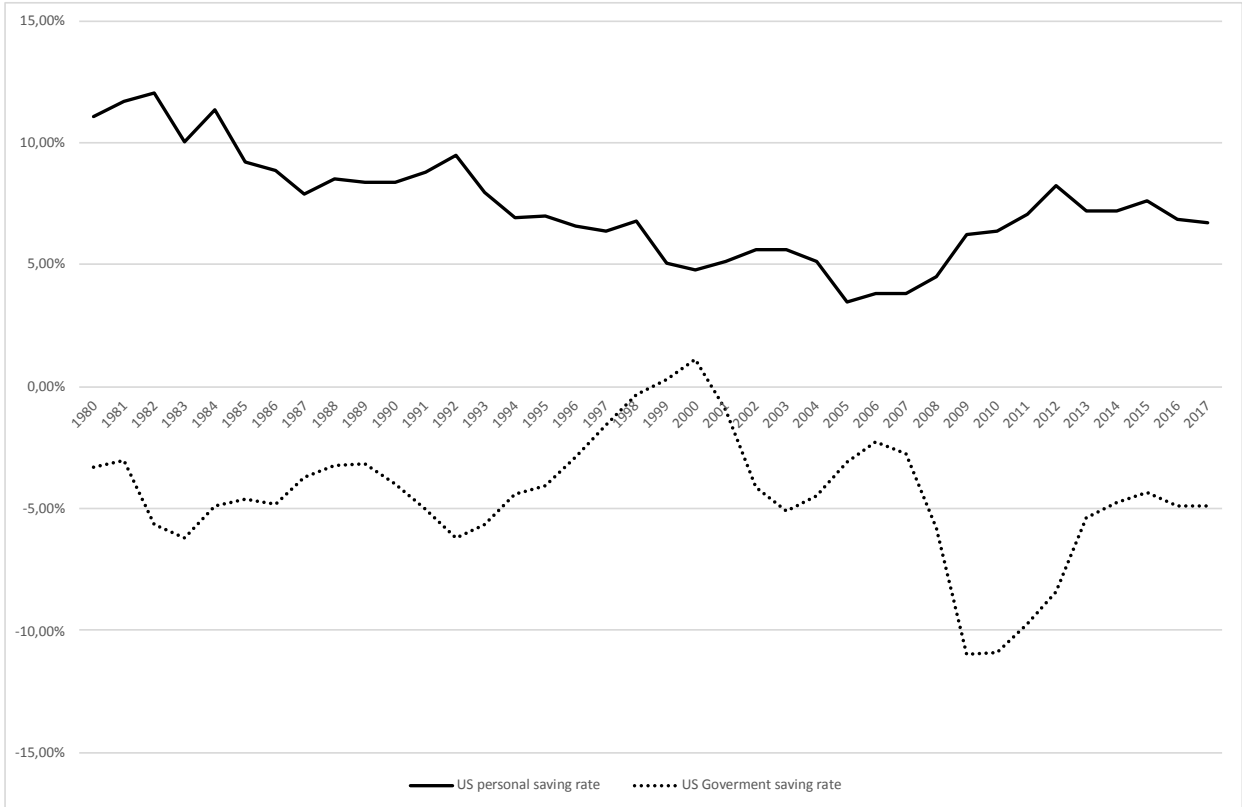
Source: US Census Bureau, Foreign trade statistics

Figure 2 - US Savings and Investments 1980-2018 (percent of GDP)



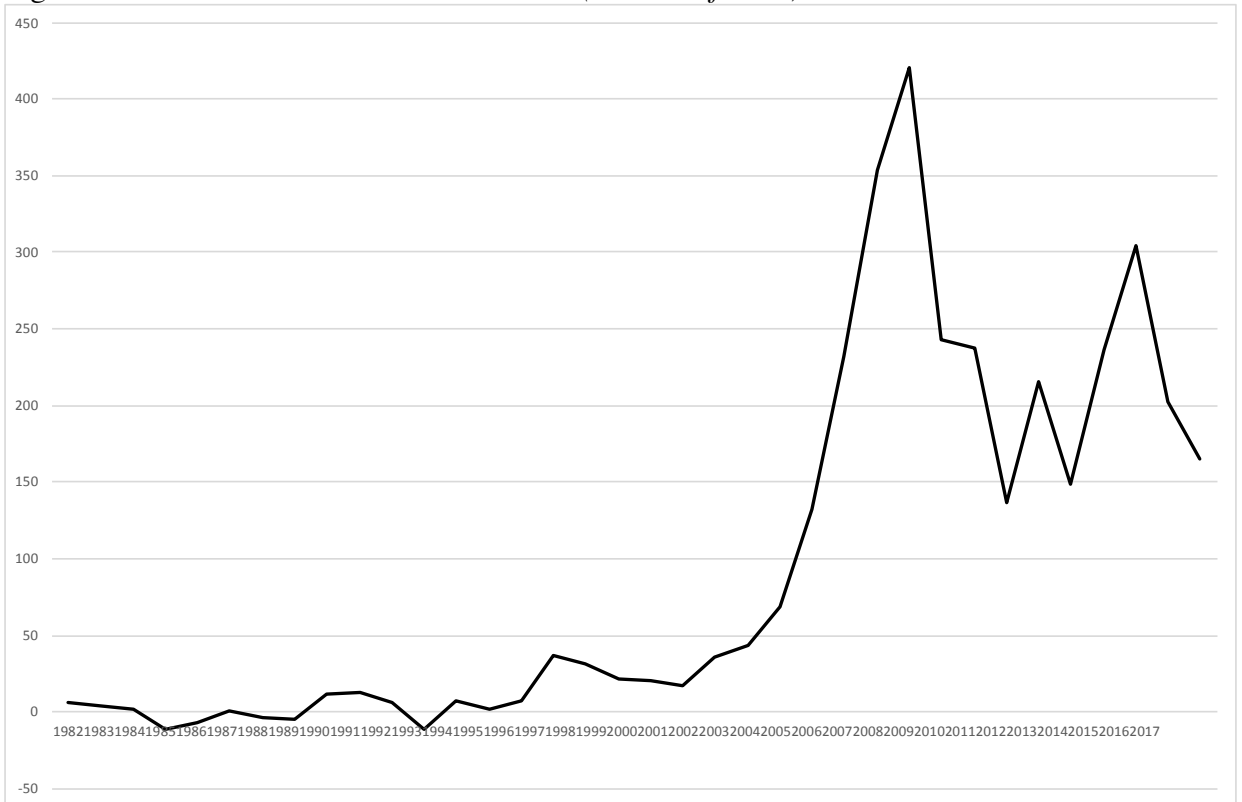
Source: IMF World Economic Outlook database

Figure 3 - US personal and Government savings rate (percent of GDP)



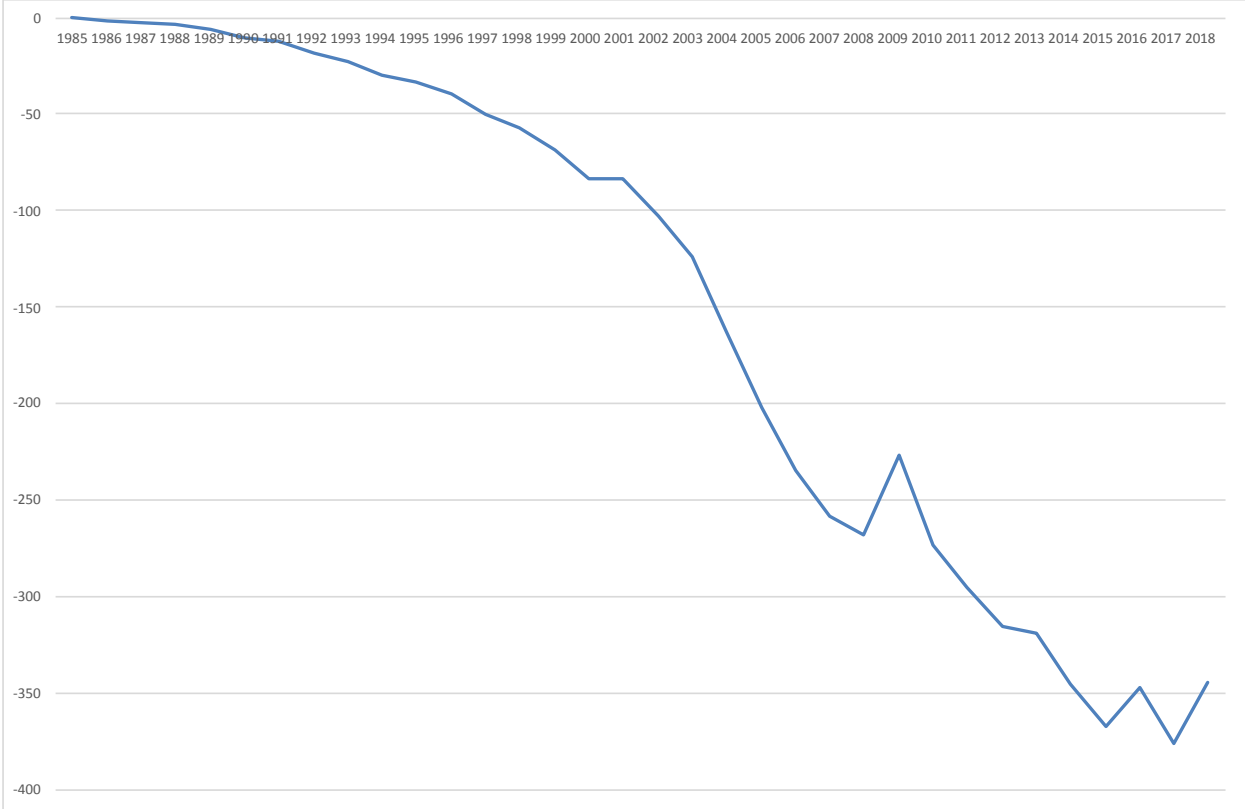
Source: US Census Bureau, NIPA tables

Figure 4 - China current account 1982-2017 (billions of USD)



Source: World Bank - Current account balance database

Figure 5 - US-China trade balance 1985-2018 (billions of USD)



Source: US Census Bureau, Foreign trade statistics

Table 1 - *Main US Trade Partners (October 2018 – billions of dollar)*

	Total trade	Percent of total trade
European Union	670.5	19.0%
China	549.5	15.7%
Canada	520.8	14.8%
Mexico	512.3	14.6%
Japan	179.0	5.1%
Germany	153.1	4.4%
South Korea	107.8	3.1%
United Kingdom	104.9	3.0%
France	73.8	2.1%
India	73.5	2.1%
Italy	64.1	1.9%
Taiwan	62.1	1.8%
Netherlands	60.3	1.7%
Brazil	59.7	1.7%
Ireland	57.1	1.6%
Switzerland	53.8	1.5%

Source: US Census Bureau, Foreign trade statistics

Table 2 - US Main Trade Partners – Surpluses (October 2018 – billions of dollar)

	Surplus
Hong Kong	25.9
Netherlands	21.3
Australia	12.6
Belgium	12.1
United Arab Emirates	10.9
Brazil	6.9
Panama	5.2
United Kingdom	4.6
Singapore	4.4
Argentina	4.2
Chile	2.7
Dominican Republic	2.6
Qatar	2.3
Bahamas	2.2
Egypt	2.2

Source: US Census Bureau, Foreign trade statistics

Table 3 - *US Main Trade Partners – Deficit (October 2018 – billions of dollar)*

	Deficit
China	-344.5
European Union	-139.1
Mexico	-67.2
Germany	-56.5
Japan	-56.2
Ireland	-39.0
Vietnam	-33.3
Italy	-25.7
Malaysia	-21.9
India	-19.2
Canada	-17.6
Thailand	-16.2
South Korea	-15.1
Switzerland	-14.4
France	-13.2
Taiwan	-12.7

Source: US Census Bureau, Foreign trade statistics

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