Demertzis, Maria; Fredriksson, Gustav

Article
The EU Response to US Trade Tariffs

Intereconomics


This Version is available at:
http://hdl.handle.net/10419/191196

Terms of use:
Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.
The EU Response to US Trade Tariffs

The first half of 2018 has seen the start of bilateral trade wars with the US. China initially, but also the EU and others are confronted with high import tariffs on selected goods as part of the US administration’s “America First” rhetoric. We discuss what it means for the EU to face a threat to a long-established alliance with the US. We argue that not only are trade wars a lose-lose game, but that the EU has no option but to retaliate against US economic aggression. The EU’s best option for damage control is to defend the international multilateral system and maintain open and free trade with the rest of the world.

In early 2018, the US administration began implementing protectionist policies that had previously been confined to
just rhetoric. On 23 March, the US applied steel and aluminium tariffs on China, which affected 2.8 billion US dollars in Chinese products. The EU was temporarily spared from these measures. This led to an almost immediate retaliation by China on 2 April, which affected 2.4 billion USD worth of US products. Eventually, the EU was also affected by tariffs on steel (25%) and aluminium (10%) imposed on 1 June, affecting 6.4 billion euro worth of EU goods. The EU retaliated with proportionate measures on 22 June, affecting 2.8 billion euro worth of US imports.

And thus, the first six months of 2018 have marked the start of a global scale bilateral trade war with the US that poses a serious threat to the global economy as well as to the global multilateral system.

The US has been and remains the most important trade partner for the EU – and has also been the EU's closest and most like-minded ally. Do the current administration’s policies mean that this is no longer the case? If so, how should the EU react to that?

In trying to answer this question, we identify what we believe is at stake. The first risk relates to global trade, particularly the integrated supply chains and countries’ abilities to exploit economies of scale. Imposing tariffs will hamper EU companies’ abilities to engage globally and, in turn, their production. This will have knock-on effects in their businesses domestically and ultimately consumers will face high prices and possibly less choice.

Beyond trade however, there is a risk to the global rule book; in other words, multilateralism. If the US defies, from the position of leadership, the rules agreed upon in the World Trade Organization (WTO), it will threaten the validity and the legitimacy of the WTO. The EU has always defended multilateralism as a way of allowing all countries, small and big, to engage globally. A changing US position in this respect requires the EU stepping up its efforts to preserve and support the WTO.

In its response to what appears to be a changing global world order, the EU needs to answer two questions: first, how to react directly to the US tariffs in ways that will minimise economic costs. Second, how to ensure that US violations of global rules do not jeopardise the global multilateral system.

In the following section, we demonstrate that not only does the EU have no option but to retaliate, but it is also the best way to protect itself. Then we provide a summary of the theory and evidence of the price of trade wars. This is necessary to fend off arguments that trade wars have winners. We then summarise our views on the concrete steps that the EU needs to take and provide a conclusion.

Trade wars are harmful: An illustration

We will now use a simple theoretical example to describe the threat of a trade war and demonstrate how the EU arrives at a credible response.

Let’s say that two parties, the US and the EU, engage in trade with each other. While this is not equal to world trade, it is very relevant for world trade given their size. If they both comply (cooperate) with international law that promotes free trade, they both have access to big markets which they split. This is a simplifying assumption to help exposure but also to reflect that the two are similar in size.

If one of them decides to impose trade sanctions, such as tariffs, it captures a bigger share of the market by prohibiting imports, provided these sanctions are unilateral. If both parties impose sanctions, trade collapses and both parties lose a lot. Table 1a shows the pay-off matrix.

The numbers here are neither representing real economic values, nor reflecting true preferences. They are chosen to reflect what we believe to be realistic outcomes, namely:

1. The ‘good’ outcome for both parties is when countries trade with each other (1,1);

2. Yes, there is an incentive to deviate from the agreements – but only provided the other does not: (2,0) or (0,2); and

3. The worst outcome is really very bad, as it makes trade collapse – hence (-10,-10) and not just, say, (-1,-1).

What is interesting about this game is that the ‘good’ outcome (1,1) is not immediately attainable. The fact that we all agree 2 is bigger than 1 implies that both parties would prefer to achieve 2, if they possibly could. What is not so obvious is how to get there, as for one partner to achieve 2

---


4 C.P. Bown, M. Kolb, op. cit.


6 Ibid.
the other must achieve 0, and that is not desirable. In other words, for the US to gain from imposing sanctions, the EU must acquiesce, i.e. not follow suit. The EU however, given its own pay-offs, might think otherwise.

A way of moving away from this possibly indeterminate outcome is by looking for likely actions, instead of actual ones. This is equivalent to moving from what are known as pure to mixed strategies.7

We show in Table 1b that – given the numbers in Table 1a that are arbitrarily chosen – both partners recognise that they should cooperate 10 out of 11 times and impose sanctions only 1 out of 11 times. In other words, despite their desire to get to 2, they also recognise that -10 is a really bad outcome that should be avoided as much as possible!

Based on Table 1b the game predicts:

1. The good outcome is the most likely outcome (100/121). And it is indeed a very likely outcome. In other words, countries cooperate and they do so most of the time. This is a very important prediction. Countries recognise that respecting agreements is beneficial and they pursue this course, even if there are incentives to deviate.

2. The bad outcome is a very unlikely outcome (1/121). This follows naturally from the first point. Trade partners do not resort to mutual sanctioning because they realise that the losses for all are enormous.

3. The bad outcome, however, is not a zero-probability outcome. This is how sanctions work. You need to have the threat of sanctions to impose discipline, but they need to be applied as rarely as possible or everybody loses.

But we need to appreciate the fact that this outcome still exists; if it did not, cooperation would not have been a credible strategy.

4. Lastly, either party may achieve its most preferred outcome (2,0) or (0,2). So, temptation to deviate exists, but again this is an event with a small probability – (10/121) twice.

If this game were played repeatedly – which, of course, it is – a player would gain an advantage from getting a reputation for being aggressive. However, if both players adopt such a strategy, the outcome is very destructive.

But let’s walk through this argument further. Mr. Trump has gone out of his way to argue that open trade has been damaging to the US and that restricting it would help protect US interests. How does the matrix of pay-offs change?

The US announces that it will impose sanctions. In the language of the game it is equivalent to saying that the US has very little to lose by doing so. The pay-offs are now asymmetric in favour of the US. This means that their loss is much smaller, by comparison, to that of the EU. The logic of this threat can be captured by reducing the losses for the US in the worst outcome (i.e. less to lose: from -10 to -1) as shown in Table 2a with a matrix of pure form pay-offs.

How likely are the two countries to pursue either of the two options now? According to Table 2b, we find that the EU now imposes sanctions in one out of every two times! Compare that to one out of 11 times in the previous game (see table 1b). The fact that the US has declared that it has very little to lose, has forced the EU to impose sanctions a lot more often than otherwise.

In other words, the EU now pursues the ‘wrong’ strategy more frequently than before and has become an ‘aggressor’ itself. By implication, the possibility of world trade collapsing is very real and no longer an unlikely outcome. Interestingly, the US still pursues its policies with the same probabilities as before.

Here is a summary of how the game has now changed:

1. The good outcome occurs now less than half of the time (10/22). This is a very big reduction when in the previous game it was a very likely outcome (100/121). Free trade (cooperative outcome) is therefore now less likely than all the other alternatives combined.

2. The EU forces the US to cooperate by sanctioning more often (10/22). That is, of course, the reason for the EU

---

7 Derivations to this game in pure form as well as mixed strategy are provided in detail in Box 1.
This is why the rhetoric that is coming out of Washington is not just an act of protectionism that distorts bilateral trade; it is a threat to the global multilateral system as it induces retaliatory aggression. And this is why the EU has important reservations: it wants to act as a defender of the multilateral system. But as we show, an air of appeasement can be tantamount to admitting defeat.

Trade wars are harmful: Theory and evidence

Apart from the game strategy, economic theory and empirical evidence confirm the detrimental effects of trade wars. Economic theory suggests trade wars make countries worse off for three major reasons. First, tariffs (or equivalent forms of protectionism) make imported goods more expensive and therefore reduce the purchasing power of consumers. Second, tariffs on intermediate goods (such as steel and aluminium) increase production costs. If firms can pass on the higher costs in product prices, consumers bear the entire cost of the tariffs. Third, retaliation by foreign trade partners reduces external demand for domestic products, decreasing output. Overall, trade wars are expected to decrease output by lowering the volume of trade and increasing prices. These adverse effects are widely considered to outweigh any positive effects of protectionist measures. Consequently, theory suggests that trade wars, especially on a global scale, reduce welfare for all those affected.

The negative impact of protectionism on trade volumes is illustrated by the IMF’s update to its April 2018 World Economic Outlook (WEO) report. The update incorporates escalating trade tensions, and reduces the earlier global trade volume growth forecast until 2020 by 0.5 percent.

---

8 The expected payout in the free world trade scenario for both the US and the EU is 0.91. In the aggressive scenario the expected outcome for the EU is still 0.91 but for the US it drops to 0.5. See Box 1 for details. This is a credible response from the part of the EU because it maintains the same expected payout and it forces the US to pay a price. It is therefore difficult to understand the US threat as it is not within the realm of the rational.

Box 1

Mixed strategies equilibria

In the ‘game of chicken’ there are no dominant strategies, and although one might think that (Cooperate, Cooperate) is the right outcome, it is not a Nash equilibrium (in pure form). In other words, it is not the best response once we have accounted for everyone’s action.

From Table 1a, there are two pure form strategy Nash equilibria: (Cooperate, Sanction) and (Sanction, Cooperate) and none of them is the ‘good’ outcome.

<table>
<thead>
<tr>
<th>US</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>S, C</td>
<td>C, S</td>
</tr>
<tr>
<td>C, S</td>
<td>S, C</td>
</tr>
</tbody>
</table>

The two equilibria are indistinguishable in value terms, so how is the game decided? To find out, we need to move to likely actions in order to assess likely outcomes (mixed strategies).

The mixed strategy equilibrium is determined in the following way: What does the US stand to gain if it Cooperates? This depends on what the EU does. We calculate that as follows:

\[
E(V)_{CUS} = p_C^{EU} \cdot 1 + p_S^{EU} \cdot 0.
\]

And what does the US stand to gain if it were to impose Sanctions?

\[
E(V)_S^{US} = p_C^{EU} \cdot 2 + p_S^{EU} \cdot (-10).
\]

If the US had a higher expected value from one strategy, it would simply pursue it! The US would want to Sanction but the EU would have to Cooperate for the US to get 2. The EU in turn, would want the US to Cooperate so that it could sanction and itself get 2. But watch how the US expected values depend on the probability that the EU pursues its own strategies.

The US would want to naturally Sanction more but the EU is applying its probabilities to prevent that. The mixed strategy equilibrium is when the expected values are equal.

This implies that:

\[
E(V)_C^{US} = E(V)_S^{US},
\]

and

\[
p_C^{EU} \cdot 1 + p_S^{EU} \cdot 0 = p_C^{EU} \cdot 2 + p_S^{EU} \cdot (-10).
\]

Rearranging this expression and remembering that \((p_C^{EU} + p_S^{EU} = 1)\) gives:

\[
p_C^{EU} = 10p_S^{EU},
\]

and therefore

\[
p_C^{EU} = 10(1 - p_C^{EU}) \rightarrow p_C^{EU} = 10/11, \ p_S^{EU} = 1/11.
\]

The mixed strategy equilibrium implies that the EU Cooperates with a probability of 10/11 and Sanctions with a probability of 1/11. The game is symmetric in the pure form pay-offs, so that the same mixed strategy is applied by the US. In other words,

\[
E(V)_C^{EU} = p_C^{US} \cdot 1 + p_S^{US} \cdot 0
\]

\[
E(V)_S^{EU} = p_C^{US} \cdot 2 + p_S^{US} \cdot (-10),
\]

which leads to \(p_C^{US} = 10/11, \ p_S^{US} = 1/11.\)

Table 1b summarises the probabilities of different events happening that can be used to calculate the mixed strategy equilibrium.

And to calculate the expected pay-offs, we would need to multiply the outcomes with their respective probabilities.
Modelling US trade policy threats

The game is played as follows: the US announces it will impose sanctions. And the way this is announced is by effectively arguing that they have very little to lose by doing so. This means that their loss is much smaller when the bad outcome arises (this is the only credible threat).

The logic of this threat can be captured by reducing the losses that the US gets in the very worst outcome (i.e. less to lose: from -10 to -1). The table of pure form pay-offs can then be described as found in Table 2a.

The pure strategy equilibria are the same again: (Cooperate, Sanction) and (Sanction, Cooperate).

<table>
<thead>
<tr>
<th>US</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>S,C</td>
<td>C,S</td>
</tr>
<tr>
<td>C,S</td>
<td>S,C</td>
</tr>
</tbody>
</table>

And again, there is no welfare criterion for choosing between the two. This pushes the game to the mixed-strategy domain.

The mixed strategy equilibrium is determined in the following way.

\[
\begin{align*}
E(V)_C^{US} &= p_C^{EU} \cdot 1 + p_S^{EU} \cdot 0 \\
E(V)_S^{US} &= p_C^{EU} \cdot 2 + p_S^{EU} \cdot (-1)
\end{align*}
\]

The EU needs to mix strategies so that the US' expected value from each pure strategy is the same. This implies that:

\[
\begin{align*}
E(V)_C^{US} &= E(V)_S^{US} \\
\end{align*}
\]

or,

\[
\begin{align*}
p_C^{EU} \cdot 1 + p_S^{EU} \cdot 0 &= p_C^{EU} \cdot 2 + p_S^{EU} \cdot (-1) \\
p_C^{EU} &= 2p_C^{EU} + p_S^{EU} \\
p_S^{EU} &= 2p_C^{EU} - p_S^{EU} \\
p_S^{EU} &= p_C^{EU} = 1/2.
\end{align*}
\]

What about the US?

\[
\begin{align*}
E(V)_C^{EU} &= p_C^{US} \cdot 1 + p_S^{US} \cdot 0 \\
E(V)_S^{EU} &= p_C^{US} \cdot 2 + p_S^{US} \cdot (-10),
\end{align*}
\]

and

\[
\begin{align*}
p_C^{US} \cdot 1 + p_S^{US} \cdot 0 &= p_C^{US} \cdot 2 + p_S^{US} \cdot (-10),
\end{align*}
\]

which leads to

\[
\begin{align*}
p_C^{US} &= 10/11, \\
p_S^{US} &= 1/11.
\end{align*}
\]

The US still plays the strategies with the same probabilities. The US is still Sanctioning as rarely as it did before.

What has changed is that the EU is pursuing the Sanctioning strategy a lot more often and as a result the world is now a very different place! Table 2b summarises the probabilities of different events happening as well as the mixed strategy equilibrium.

And to calculate the expected pay-offs, we would need to multiply the outcomes with their respective probabilities.

\[
\begin{align*}
EV_{US}(\text{trade wars}) &= 1 \cdot (10/22) + 2 \cdot (1/22) + 0 \cdot (10/22) + (-1) \cdot (1/22) = 0.5 \\
EV_{EU}(\text{trade wars}) &= 1 \cdot (10/22) + 2 \cdot (10/22) + 0 \cdot (1/22) + (-10) \cdot (1/22) = 0.91
\end{align*}
\]
age points. Similarly, for advanced economies, the growth forecast until 2020 is adjusted downwards by 0.7 percentage points. Further, Bown estimates that the US’ Section 232 tariffs on steel (25%) and aluminium (10%) will result in global trade losses of 14.2 billion USD per year, including 2.6 billion USD for the EU.

In the literature, lower global trade volumes are generally found to hurt global welfare. The IMF, for example, employs the Global Integrated Monetary and Fiscal Model (GIMF) to study the effect of a 10% increase in global import prices. The result is an accumulated decrease in global trade volumes by 15% and in global output by 1.75% after five years. Also using the GIMF, Berthou et al. find that a generalised 10 percentage point increase in global tariffs decreases real world GDP by one percent after two years. Furthermore, Berthou et al. note that the GDP losses may be larger if the higher tariffs lead to:

- a reduction in productivity, due to an inefficient reallocation of factors of production;
- an increase in the cost of capital due to greater actual or perceived borrower risk; or
- a decrease in investment demand, because firms delay investment decisions as a result of a more uncertain business environment.

Studies have also shown the negative impact of protectionism on individual trading parties. For instance, according to the OECD, an increase in trade costs by 10 percentage points on all goods (but not services) in China, Europe, and the US reduces world GDP by -1.4%, China by -1.7%, Europe by -1.8% and the US by -2.2%. Moreover, Kutlina-Dimitrova and Lakatos explore two scenarios: a global reversal to most-favoured nation rates and a global increase of tariffs to bound rates, both of which are coupled with an increase in the cost of traded services.

The adverse consequences of trade wars are furthermore illustrated by the quantitative analysis of Vicard, which is used to underpin recommendations for the EU’s trade strategy in Jean et al. Vicard simulates two types of global trade wars on manufacturing goods: (1) a full-scale war, characterised by a 60-percentage point tariff increase everywhere except within the EU, and (2) a limited war, whereby a 60-percentage point tariff increase is applied everywhere except within the EU and between countries with bilateral agreements. An interesting result is that the economic losses of the three largest trading entities (China, the EU and the US) are similar in magnitude. In a full-scale war, real GDP would permanently decrease by around three percent for China and the US, and four percent for the EU. In a limited trade war, the real GDP losses would amount to approximately three percent for China and the EU, and two percent for the US. Jean et al. note that the economic losses are likely even larger for smaller countries, as they are more susceptible to disruptions in international trade.

The EU’s reaction: Taming the threat, preserving multilateralism

The greatest challenge for the EU in trying to identify an optimal response is understanding the motives behind the US strategy.

At some level, the Trump administration with its “America First” motto is continuing an earlier trend of withdrawing the
US from its role as world leader.\textsuperscript{29} It was during the Clinton administration (1993-2001), when the question of “What’s in it for us?” first arose in terms of “regaining competitiveness”. However, the current US rhetoric, and more recently policies, are not only a threat to others but evidently also self-harming.\textsuperscript{30} What is the rationale behind such decisions? How should the rest of the world react to not only the withdrawal of the US but actually to US economic aggression? And what are the dangers that the global economy faces in the process?

A big part of the answer to all these questions depends on how the rest of the world responds to US trade tariffs. In a speech on 19 July 2018, Cecilia Malmström, the European Commissioner for Trade, delineated the EU’s response to the US steel and aluminium tariffs that consists of three parts.\textsuperscript{31} First, the EU has challenged the US tariffs in the WTO. Secondly, in line with its rights under WTO rules, the EU has developed a list of products on which it might apply balancing tariffs on imports from the US. Importantly though, most tariffs might only apply after three years as a result of WTO rules. Finally, the EU has implemented safeguards to prevent steel and aluminium redirected from the US from distorting the EU market and undermining EU producers. Overall, the EU’s response was described by Ms. Malmström as “reasonable, proportionate and in accordance with international rules”.\textsuperscript{32}

In our view, an EU response to US protectionism should be guided by the following:

1. \textit{The EU cannot prevent an escalation but it can contain it.} In a recent opinion piece, Dani Rodrik argued that for the costs of a global trade war to materialise following US tariffs, others need to retaliate.\textsuperscript{33} If the world does not respond aggressively, global trade will not suffer. We have shown that if that is the case, then the EU will incur substantial losses. More importantly, in our view, it will legitimise the violation of global rules – a fact that will seriously jeopardise the EU’s position as defender of the global multilateral system. We find a “proportionate” response the only rational answer that recognises both the risks of inaction, as well as of a full-fledged trade war. To this end, the EU needs to have tools in place that can be deployed bilaterally against the US.

2. \textit{The EU needs to establish deeper economic relations with the rest of the world.} This involves China but also other partners. The recent trade agreements with Japan and Canada are ways of benefiting from, but importantly maintaining, open trade on a global scale.

3. \textit{Follow the current WTO rule book.} As the Commissioner says, imposing sanctions that are according to international rules is crucial to protecting multilateralism. However, some of the criticism coming from the US regarding the rules is not unjustified. This is why it is important that the EU, at the same time, \textit{helps build consensus on reforming parts of the WTO.} The European Commission has already put forward a proposal on this issue and should encourage efforts to correct inefficiencies of the global governance system.\textsuperscript{34}

4. \textit{Continue efforts to communicate that trade is not a zero-sum game.} Part of the language of diplomacy should, in our view, argue what many have already argued: that trade is not a zero-sum game.\textsuperscript{35} And where there may appear to be short-term gains from raising tariffs (like our indicative game had assumed), at the end of the day, everyone loses. Multilateralism should be about engaging with all in order to establish and implement rules that promote international cooperation and a more equitable distribution of value created.

\section*{Conclusions}

The rhetoric, and more recently also actions, of the current US administration on trade and the global multilateral system are a real threat to the process of globalisation. While the costs are not immediate, they will materialise and they will be hard to revert. Importantly, they are shaking a long-standing reversion, on which the post-war era is based.

\textsuperscript{29} J.N. Bhagwati: The Diminished Giant Syndrome, in: Foreign Affairs, Vol. 72, No. 2, 1993, pp. 22-26. Bhagwati argues that this is not a characteristic of the US only. Previous world hegemons pursue “myopic and self-indulgent … ‘what’s in it for us’ economic policies in the world arena”, which end up undermining their roles as world leaders.


\textsuperscript{32} Op. cit.


At the same time, given that many agree that recent actions are ultimately self-harming, it is still not clear what the final objective of US actions really is. It would therefore not be in the EU’s interest to abandon this alliance in favour of others. This is especially the case as China, the third global economy, has a very different view of how the economy works, a fact on which the US and the EU agree. Nevertheless, US actions have put the EU in an awkward position.

While it is crucial to continue efforts to revert some of the antagonism that the US has shown, the EU also needs to protect itself. As a continent that is very integrated in trade and financial terms, US actions do leave the European economy exposed and vulnerable. This is why it is important to have credible tools that can be implemented in real time and expose the real costs of trade hostility. At the same time, the EU needs to expand its trade with other countries, protecting the gains from open trade. Lastly, the EU needs to encourage reform of the global rule book, the WTO, in order to ensure equal access for all. This is important if we are going to have more equally apportioned gains from free trade across the world.