

The futility of mercantilist wars

a case study of France between 1733 and 1820*

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Abstract

How was Mercantilist warfare effective in its own terms, by crippling trade of defeated powers? Our paper explores the Anglo-French experience during the eighteenth century and contributes to understanding how and when this was the case. Using new French data by partner, we explore the general mechanisms relating trade and conflicts. We look into several possible candidates to explain the effectiveness of mercantilist warfare; naval supremacy, colonies loss and neutral policies. Of all the aforementioned factors, we find that the only truly efficient way to curtail the enemy commercial exchanges, was to cripple neutral trade. This strategy was the only one allowing to both decrease the enemy's trade and causing long-lasting losses.

1 Introduction

Savez-vous Messieurs ce qu'est une bataille navale ? On se rencontre, on se salue, on se canonne et la mer n'en reste pas moins salée.

Maurepas, Navy Minister of Louis XV,
1718-1748

How was mercantilist warfare effective in its own terms, by crippling trade of defeated powers? Our paper explores the Anglo-French experience during the eighteenth century and contributes to disentangle the effects of all the strategies implemented to curtail enemy's trade. Jefferson (1823)

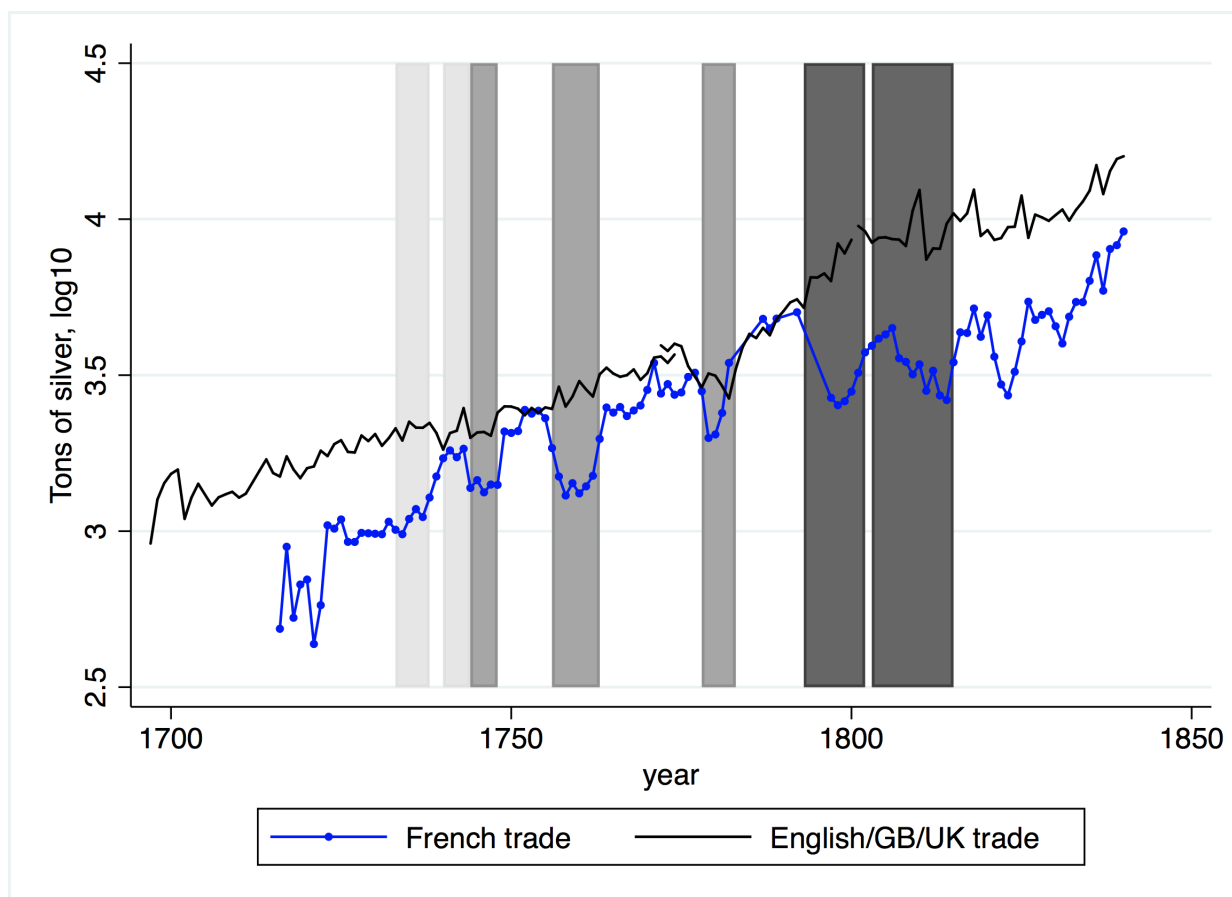
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famously noticed that European nations *were nations of eternal war*. Indeed, from 1700 to 1825, two years out of three experienced conflict between major European powers (Roser, 2016). Rivalry between Great-Britain and France was central, so much as the period between 1688 to 1815 was called the « 2nd Hundred Years War ». War has many causes. Yet, especially after the death of Louis XIV, it cannot be denied that mercantile rivalry was an important motivation of French wars (Crouzet (2008); Wallerstein (1980)). Each nation was jealous of the other's commercial success. The British believed war was a good way to curtail French trade. The French partly agreed but were more wary of wars because they did not have much naval success. Here is the long list of wars between France and Britain after the death of Louis XIV: War of the Polish Succession (1733-1738) (little naval hostilities), War of the Austrian Succession (1740-1748, where naval hostilities started in 1744), Seven Years' War (1756-1763), War of American independence (1775-1783, where French involvement started in 1778), French Revolutionary Wars (1792-1802) and Napoleonic Wars (1803-1815). Yet, not all of these conflicts achieved their goal effectively. Looking at figure 1, it is clear that French trade, despite a visible decrease in wartime, was recovering quite fast, at least until the end of the eighteenth century. The only big exception was the period following the Continental Blockade, when the increase in trade started in the beginning of the century was brought to an end, while British trade maintained its steady growth. Less visibly so, but as a result of some more in-depth analysis, Seven Years War also shows a similar pattern; it caused a bigger and longer-lasting effect than other similar wars. What were the common elements between these two wars, that made them so much more disruptive for trade? In what did they differ from the conflicts throughout the rest of the century? With this paper, we aim to uncover the strategies and the characteristics that made mercantilist war effective in its purpose. This is important to understand the effect of wars in general, the geopolitical history of the eighteenth and nineteenth century and the globalization/deglobalization cycle from the 1490s to the 1840s.

Figure 1: French, British trade and Anglo-French wars



Source: French trade up to 1821: Charles et al.. French trade 1822-1840: Federico and Tena-Junguito (2016) / Dedinger and Girard (2017),
 England/British trade up to 1800: Deane and Cole (1969). UK trade from 1801 to 1840: Federico and Tena-Junguito (2016) / Dedinger and Girard (2017),
 Livre tournois silver value: de Wailly (1857) and Hoffman et al. (2000); Pound sterling silver value: Clark and Lindert (2006) and Jastram (1981)

2 Literature

There exists a vast literature focusing on the relationship between trade and war. A first strand of this literature concentrates on the impact of trade on the occurrence of wars. Within this strand, two major perspectives have emerged: a liberal and a realist one. The first supports a vision of interdependence between trade and war, pointing out that trade promotes peace since it is a better method of expansion than wars (Doyle (1997), Oneal and Russett (1997), Polachek (1980)). The second opposes this view by claiming that there is no impact of trade on wars, and if any, then it will be a positive impact, as countries will be pushed to move war to maintain trade supremacy (Ripsman and Blanchard (1996), Levy (1989), Buzan (1984))¹. This is also dealt with, more recently, through a more quantitative approach by Martin et al. (2008), who construct a theoretical model describing the likelihood of war and test it empirically. They find that likelihood of war is much smaller for countries involved in bilateral trade than for those involved in multilateral. Despite the fact that we are investigating the impact of war on trade, this literature is of interest because of the endogeneity issue. All the aforementioned papers imply that trade may have an impact on war and therefore we may not be able to disentangle the effects of one on the other. We argue that, in our case, this is not an issue; wars were either the consequence of exogenous events (the death of Charles VI for the war of Austrian Succession for instance) or else were the political expression of the long-lasting conflict between France and Britain. Therefore, in our specific case, we assume that we are observing the effect of war on trade and not the reverse.

The second strand of the literature, on the other hand, focuses on the impact of conflicts on trade. The works following this perspective are more homogeneous, and most authors agree to the disruptive effects on trade caused by wars. Levy and Barbieri (2004) analyse the impact of war on trade with adversary countries using seven dyads between 1870-1992, and they find that, although different across dyads, the general impact of conflict on trade is not particularly strong and mostly only temporary. Blomberg et al. (2006) analyse more specifically the effect of all kind of conflicts, distinguishing between internal and external, and find that peace has a large and positive impact on trade. Anderton and Carter (2001) look at the effect of wars on global trade, and find that when major world powers are at war significant pre and post war effects are observed, whereas impact is much smaller for conflicts between minor powers. Finally Glick and Taylor (2010) try to quantify the economic impact of the two world wars and claim that conflicts had negative effects on both belligerent and neutral countries with lags up to ten years. Altogether, the papers mentioned above do not always find coherent results, and such results were obtained from data from the last century

¹McMillan (1997) provides an extensive review of these two competing strands.

only. The only exception is Rahman (2010) who uses British trade data from eighteenth century, but concentrates mainly on the impact of naval conflicts with maritime powers on trade. The majority of scholars (apart from Levy and Barbieri (2004)) also finds long lasting effects of war; they claim commerce took several years before restoring its prewar level.

The effect of mercantilists wars on French trade does not fit this pattern. Riley (1986), who concentrates on the case study of the Seven Years War, observes French trade series and he notices that there were no war lags but on the contrary pre and post war loss compensation effects. This widely recognized fact about the effect of eighteenth century wars on French trade has led historians to research extensively the strategies of French merchants to cope with war. Neutral carriers were somewhat protected from British predation on the sea. When necessary, French merchants could even hide their cargo ownership behind a neutral partner. Or they could move to neutral countries and operate from there (Marzagalli (2016)). Historians have even reflected that war periods might have been necessary to the functioning of the *Éclusif Colonial*, i.e. the theoretical monopoly of French merchants on French colonial trade (Lespagnol (1997); Marzagalli (2016); Morineau (1997)). The argument rests on the large peace time trade imbalances between France and its Northern European clients for colonial goods that could have been balanced by large service income of Northern European merchants during war time as they, as neutrals, provided shipping and various trade services to the French empire. The quality of the available balance of payment data is not good enough to test that hypothesis. Along these lines, Juhász (2014) finds that regions of the French Empire which were protected from trade with the British during the Continental Blockade increased capacity in mechanized cotton spinning to a larger extent than regions which remained more exposed to trade.

The aim of this paper is to extend Riley (1986)'s work by analysing the available French data in the eighteenth century. So far the literature has mainly analysed the impact on trade of twentieth century wars and generalized the results. We believe that the effect of wars in twentieth century is different from that of other wars throughout history, and related data offer only a partial point of view. Thus, we are convinced that analysing data older than twentieth century is crucial to understand the general mechanisms relating trade and conflicts. We construct a loss measure for trade throughout the century and we find that indeed the main losses took place during Seven Years War and Revolutionary & Napoleonic Wars. We explore several possible causes and we find that the common factor in case of major disruption was the policy adopted towards neutral countries. This leads us to think that wars were not a big source of disruption for trade, as long as neutral countries were allowed to trade relatively freely and take over the trade from belligerent countries. It was

only during the Seven Years Wars and the Napoleonic & Revolutionary Wars, when commerce with neutral countries was also restricted, that French trade experienced a massive decline (Findlay and O'Rourke, 2009). This decline was long-term and put an end to the competition for trade supremacy in Europe, which was ultimately won by the United Kingdom, by the end of the century. This avails the hypothesis of the role of neutral countries in modern trade and its importance for its success.

Rahman (2010) shows that fighting a naval power with a large navy is bad for trade. The close examination of the mercantilist rivalry between Britain and France clarifies the channels through which a naval power can do long-term damage one's trade.

3 Dataset

3.1 Sources of the data

We use data from the TOFLIT18 project (see <http://toflit18.medialab.sciences-po.fr/#/home>). They come from the archives of the French *Bureau de la Balance du Commerce* and, subsequently, the *Bureau des archives du commerce*. This institution was created in 1713, after the Treaty of Utrecht, which followed the Spanish Succession War. While discussing a trade treaty with the British, the French negotiators were positively impressed by the detailed knowledge shown on actual trade flows by their counterparts, and they convinced the government of the necessity of creating an institution that would keep track of exports and imports from and to France (Charles and Daudin, 2011)². Starting with the year 1716, local *bureaux des fermes* sent their trade records to the *Bureau* in Paris. The *Bureau* would then compute aggregate yearly figures for each *direction* (port) and then send them back to the local Chamber of Commerce, so that they could add the values up to 1780. A mix of local and central source survive from this process. Unfortunately these "local sources" mostly did not survive; what we have left are parts of the centralised records. From 1781 to 1791, the work methods of the Bureau changed and a number of years of trade have left little record (1783-1786, 1790-1791). In 1792, through a decree of the National Assembly, the *Bureau de la Balance du commerce* was abolished and replaced by the *Bureau des archives du commerce*. We have some data on 1792 trade, but trade collection started again in earnest in 1797, so that we are missing information on 1793-1796.

The data that have survived is contained in different kinds of documents. The two most exhaustive ones contain trade by product and per partner. They were the *Objet Général*, between 1754 and 1780, 1782 and 1788. Some years are missing, especially in the the period between 1761 and 1767,

²Charles and Daudin (2011), in their paper, provide the complete history of the *Bureau*.

and the *Résumé*, between 1787 and 1789 and between 1797 and 1821. The *Objet Général* includes the value of the flows and, from 1771, it includes also quantities and / or unit prices. The *Résumé* does not include quantities, only valued. The classification of goods it uses is less precise than the one from the *Objet Général*. Local trade data are available from 1716 to 1780 and in 1789. These sometimes allow partial reconstruction of total French trade (see 3.3). Very importantly for the first part of the analysis, a *Tableau Général* exists in the French archives that provides French bilateral trade (though it is not broken down by product) (?).

3.2 Clasification and Treatment of Data

TO REVIEW AND INTEGRATE

For the period between 1750 and 1820, this dataset accounts for 146,963 total bilateral trade flows, with incomplete data between 1761 and 1767 and missing data between 1782 and 1787, in 1789 and in 1797.

As we are dealing with historical data, their form is not always optimized for our kind of analysis and we had to make some classifications and choices.

The first issue was with the destinations to which products are shipped. Their number varies year by year, but it ranges from only 18 in 1803 up to 260 in 1789. Rather than single countries they are groups of countries and many destinations get broken down into smaller destinations in later periods or even disappear to be replaced by other smaller entities. To bypass this problem we have created a classification of countries, which is consistent for the whole period and identifies only twelve groups. Each group comprises all the evolution of one destination, so that we have observations for each group for each year. The groups we are considering are the following: *Allemagne*, *Angleterre*, *Espagne*, *Flandre et autres Etats de l'Empereur*, *Hollande*, *Portugal*, *Suisse*, *Levant*, *Italie*, *Etats-Unis*, *Outre-mers* and *Nord*.

Nord designates a region that comprises Sweden, Denmark, Hanseatic ports (mainly Hamburg, Bremen, Lubeck and Danzig), Prussia and Russia³ (Charles and Daudin, 2018). The biggest share of trade was nonetheless represented by Hamburg, therefore, whenever any of the component of *Nord* were not on the same side in a war, we code them all in the position of Hamburg⁴.

Italie includes mainly the Kingdom of Piedmont and Sardinia and Genoa. Minor flows are also directed to Milan, Naples, Venice and Kingdom of Etruria. Luckily enough, the share of trade with Kingdom of Piedmont and Sardinia exceeds that with Genoa for most of the period, therefore we

³Trade with Denmark is identified separately from 1733, trade with Sweden from 1734 and trade with Russia from 1744. We always account for them together under *Nord*

⁴See appendix for more detailed graphs and tables on this.

can consider the position of Italy in the wars as equivalent to that of Kingdom of Piedmont and Sardinia, all throughout the period.

Allemagne encompasses mainly Alsace, Lorraine and Western Germany.

The same issue arises with products. There are up to 8,129 different products recorded (in 1789); some of them are extremely specific, like sugar or wood, and other are recorded as together with other products, like fruit or textile. To make those data usable, we have, once more, grouped them in categories and sectors, using the SITC classification ⁵.

Values in the dataset are expressed in *livres tournois* and French francs, but we convert them in grams of fine silver to have a comparable estimate year to year. In 1726, the *réformation* institutes the *livre* at a value of 4.505 grams of fine silver (de Wailly, 1857). In 1795, the *livre* was replaced by the French franc, which was established as new currency by 1796, and contained 5 grams of silver.

3.3 Limitation and Missing data

As mentioned above, data on flows of products are missing for certain periods, i.e. in 1753, between 1763 and 1767, and between 1789 and 1797. For these periods, the only available data are either the yearly aggregate figures by destination, or incomplete local sources (only until 1780), that contain information on each product. For this reason, in order to perform the comparison between the two datasets and the subsequent analysis, it is necessary to estimate the full value of exports from the available data. In order to do this, we run the following regression, that is miming one import/export index:

$$\ln(\text{product}_{i,j,k,t}) = \beta_{0,i} + \beta_{1,i}\text{year}_{t,i} + \beta_{3,i}\text{direction}_{k,i}$$

where the dependent variable *products* stands for the value of exports of one product (*i*), for each country (*j*), for each port (*k*) reported in the local source and for each year (*t*). *Year* is a set of year dummies and *direction* is also a set of dummies that indicates in which port the data were recorded (direction also includes "France", meaning all ports). This model aims at predicting the export value of single products per year basing on the yearly changes in export and on the export composition by source, with the assumption that the composition is constant overtime. We run the model on the whole available years but we only do so for coffee, sugar, wine, eau-de-vie and an aggregate category of all other goods (other). In addition, to avoid the problem of log of zero trade flows, we have substituted them with 0.001, so that observations would not drop but the zero flows in the estimation could be taken into account as a value really close to zero. Finally, we also added weights

⁵All this has been done in the context of the TOFLIT18 project by L. Charles and G. Daudin: <http://toflit18.medialab.sciences-po.fr//#/about>

on value, as to give more importance to flows higher in value. The results are pretty satisfactory, in fact the pattern of estimated and actual value are very similar.

4 Historical summary

As mentioned above, the eighteenth century was a period of "eternal war". In fact, between 1716 and 1820, two out of three years experienced a conflict. In this section we provide a brief overview of the main wars that took place in Europe in the period of analysis.

In 1733, the king of Poland August II, died heirless and his succession soon became a conflict at European level. France, Prussia and Spain were trying to limit the desire of expansion of the Habsburg monarchy in Poland, however, the lack of support by Britain, concluded the war in 1738, with the recognition of August III as king of Poland, as the Habsburg had wished. In the country classification we used, the ally countries⁶ were *Espagne* and *Allemagne* and the foe was *Flandre*. It was a land conflict, as opposed to the naval conflicts that followed.

No longer than two years later, a very similar event occurred, as a consequence of the death of Charles the VI. The Habsburg emperor had not died heirless, however his only heir was a woman; Maria Theresa of Austria. France, Prussia and the Electorate of Bavaria used the pretext that she was ineligible to succeed to her father, to challenge, once again, the Habsburg power. On the other hand, Maria Theresa was supported by the Kingdom of Great Britain and the Dutch Republic as well as the Kingdom of Sardinia and the Electorate of Saxony. This conflict, which was born as a succession issue, soon extended to the New World and became a competition between the French and the British for the control of American colonies. It ended in 1748 with the Treaty of Aix la Chapelle, where France gave back most the territories it had conquered during the war. Ally country in this case was *Espagne* and foes were *Angleterre* and *Flandre*.

Roughly until the end of the Austrian Succession war, there had prevailed a sort of geopolitical and economic equilibrium between France and British colonies on the North American mainland, that, by the mid-eighteenth century was broken, as a consequence of an uneven population growth (Findlay and O'Rourke, 2009). This set the stage to the following war; the Seven Years War, or French and Indian War, which, as the name suggests, was a world-wide conflict. As opposed to the previous wars, this was a decisive triumph of Britain over France, which was forced to give up Canada, Cape Breton Island and Grenada, recognized the Mississippi River as the Eastern boundary of its possessions in North American, then ceded those possession to Spain. France also lost enough influence in its colonies to lead to the dissolution of the first Compagnies des Indes (Riley, 1986).

⁶We always consider *Outre-mers* as ally and *Levant* as neutral.

French allies in this war were *Allemagne*⁷, *Espagne* and *Flandre*. Foes were *Angleterre*, and *Portugal*. At the end of the Seven Years War, with the victory of Britain and the subsequent depart of the French, the American colonies, no longer feeling the threat of the French presence on the continent, soon started demanding independence from Great Britain⁸. In 1775 they rebelled against British control over their trade and in 1776 they declared independence. France, still feeling the humiliation subsequent to the Seven Year War, in 1778 entered the fray on the colonies' side, soon followed by Spain. Spanish and French⁹ fleet together outnumbered the British Navy and were able to force Britain to surrender and end the war with the Treaty of Versaille in 1783. In this setting, ally were there *Espagne*, and *Etats-Unis*; foe was only *Angleterre*.

At the end of the war, despite the victory obtained, French finances were suffering to the extent that Calonne, the finance minister at the time, was forced to the summoning of the Estates-Generales in 1789, which then led to the start of the French Revolution. This event was followed by a larger conflagration with respect to previous mercantilist wars, into which an ideological dimension had been injected (O'Rourke, 2006). In 1792 France declared war on Austria and Prussia, and the following year to Great Britain. The subsequent conflict lasted for nearly thirty years, with only two brief interruption between 1802 and 1803 (Peace of Amiens) and between 1814 and 1815. Almost immediately, France banned the import of all British goods; Britain responded by blockading French coasts and impeding French ships to exit the port. From the very beginning, this created a big problem for neutral countries, which wished to continue trade with both belligerent actors. As a consequence, a second League of Armed Neutrality was created, in which Russia, Prussia, Denmark and Sweden took part. This alliance was not long-lasting, as Britain responded with a ban on trade with the league, and bombed Copenhagen, thus ending this agreement. This conflict ultimately ended with Napoleon's disastrous invasion of Russia in 1812, which was followed by the invasion of France in 1814 and a subsequent peace treaty signed in Ghent. The two main players of this conflict were, of course, Britain and France. However, because of the victories and defeats of one and the other, sides of other countries changed continuously and it was harder to code in our country classification. *Allemagne* was a foe between 1792 and 1804, became an ally between 1805 and 1813 and then became again enemy to France. *Angleterre* was an enemy all throughout. *Espagne* was against France for the period 1793 and 1794, she became then an ally until 1807 (with the exception

⁷As mentioned in section 3, *Allemagne* was mainly Alsace, Lorraine and Western Germany, which were allied to France. Our assumption is that "Prussia" is sea trade through the Baltic, i.e. a minor portion of *North*, which, however we code as neutral, since it was dominated by Hamburg.

⁸The French chief minister, the duc de Choiseul, made a prediction to the effect that with no French presence on the continent to threaten them any longer, the American colonies would soon demand independence from Great Britain (Findlay and O'Rourke, 2009). This prediction, as it turned out, was incredibly prescient.

⁹France had been investing in its Navy following the preceding defeat (Findlay and O'Rourke, 2009).

Table 1: Summary of war status

Country	Foe	Neutral	Ally	Country	Foe	Neutral	Ally
Allemagne	1792-1804 1814-1821		1733-1783 1805-1813	Portugal	1756-1763 1799-1802 1807-1821	1733-1748 1778-1798 1803-1806	
Angleterre	1740-1783 1793-1821	1733-1739 1792		Suisse		1733-1797 1814-1821	1798-18013
Espagne	1793-1794 1808-1821	1792 1795	1733-1783 1796-1807	Levant		1733-1821	
Flandre	1733-1748 1792-1802 1805 1809 1813-1821	1778-1783 1803-1804 1806-1808	1756-1763 1810-1812	Italie	1792-1796 1814-1821	1733-1783	1797-1813
				Etats-Unis		1793-1821	1778-1792
				Outre-mers			1733-1821
				Nord	1799-1800 1805-1807 1812-1821	1733-1748 1778-1798 1801-1804	1756-1763 1808-1811
Hollande	1740-1748 1793-1794 1814-1821	1733-1739 1756-1763	1778-1792 1795-1813				

of 1795, in which she was neutral), and then again an enemy from 1808 onwards. *Flandre* was a foe until 1802, she was then neutral in 1803 and 1804, then an enemy in 1805, to become neutral again in 1806 until 1808. Lastly, after one more year of neutrality in 1809, she became an ally starting from 1810. *Etats Unis* was always ally. *Portugal* was neutral until 1798 and then became a foe 1802. She was again neutral for a short period between 1803 to 1806 and then was again a foe starting from 1807. *Suisse* was neutral until 1797 and then briefly ally until 1813, to become then neutral again in 1814. Finally, *Italy* was briefly a foe until 1796, then neutral until 1813, and then again a foe starting 1814.

Table 1 reports a summary of the position of all countries in all wars throughout the century.

5 Empirical Analysis

The aim of this study is to uncover the effects of the long-lasting war status that marked the eighteenth century and to identify the drivers of the massive loss in trade associated to some of these conflicts.

5.1 Explained variable

We start by defining a loss function of the effects of wars. We construct it as the percent loss during war periods, as opposed to predicted trend in peace time:

$$Loss = \frac{Expected\ value\ in\ peace - Observed\ value\ in\ war}{Expected\ value\ in\ peace}$$

Figure 2 shows the annual loss function for the period of interest. The black dotted line shows observed trade versus trade predicted based on all preceding peace period, whereas the red solid line shows the comparison with the prediction only based on the single preceding peace period. There are two interesting things to notice in this graph. First, the loss function is especially high during the Seven Years Wars and the Revolutionary Wars/Continental Blockade, meaning losses as a consequence of these conflicts were greater than for other conflicts in this century. Second, the loss function is positive also in peace time, after those two wars, meaning losses were longer lasting. Therefore, at a first glance, these two conflicts were more harmful to trade than others. Looking at figure 3 makes this point stronger. We observe, in fact, that post-Seven Years War loss is roughly comparable to that during American Revolutionary War altogether. It is undoubtedly hard to disentangle the effect of the American Revolutionary War itself and the lags from the preceding war, however, whatever the distribution of weights between these two events, it is undeniable that the consequences of the Seven Year War were quite significant. The same holds for the Revolutionary War and the Continental Blockade, which have already been mentioned in the literature as a major cause in French trade disruption at the end of the nineteenth century (O'Rourke, 2006).

Figure 2: Annual Loss Function

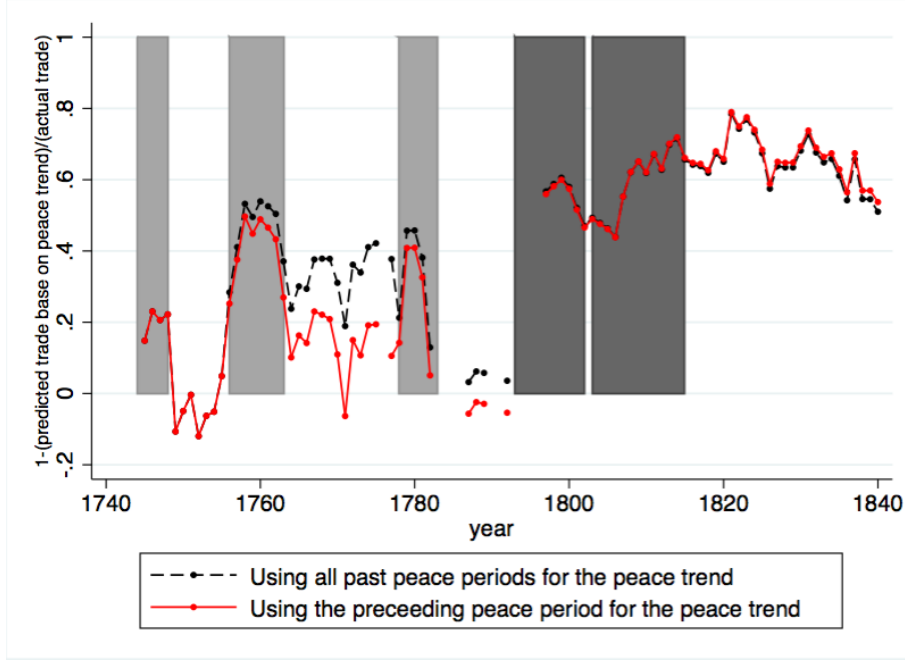
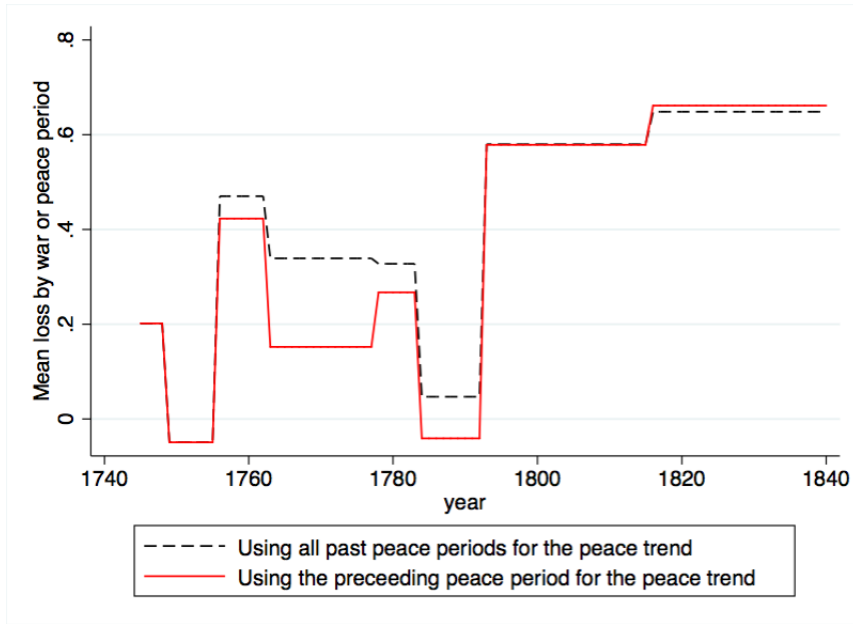


Figure 3: Mean Loss Function



5.2 Explanatory variables

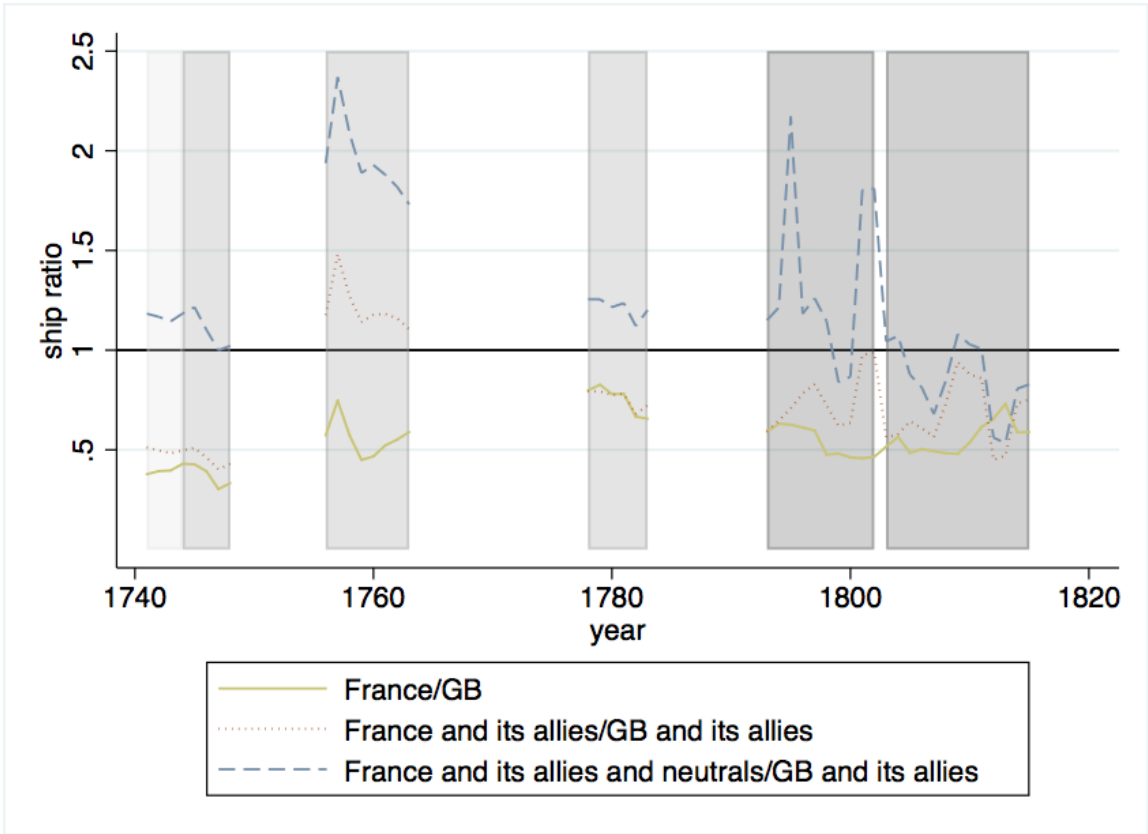
We want to test the hypothesis that the most efficient strategy to curtail enemy's trade was to cut its commercial relations with neutral countries. In order to do this, we run the following specification:

$$Loss = \beta_0 + \beta_1 NavalSupremacy + \beta_2 ColonyLoss + \beta_3 NeutralRegulation$$

We use the loss function as a dependent variable, transformed from percentage to absolute value and then take the logs.

As explanatory variables we introduce several factors. First, we use number of warships, grouped by belligerent/neutral status, as a proxy for naval supremacy. Figure 4 reports the ratio of France over Great Britain, France and its allies versus Britain and its allies and France, its allies and neutral countries versus Britain and its allies. Mostly, among neutral countries, we find Denmark, Hanseatic cities, United States and Russia. The latter, however, occasionally was also allied with France (during Seven Years War for instance). Ally countries were mostly colonies and, as mentioned, occasionally Russia. We can observe here that the France-GB ratio is quite stable over the whole period, quite less so if we take into account allies and neutral. The latter two ratios in fact, actually increase in the period of the Seven Years War and after, and also has some spikes during the Napoleonic Wars. At least at first sight, this does not look related to the pattern of the loss function. Intuitively, we would expect the loss to decrease as the ratio increases, therefore a positive relation.

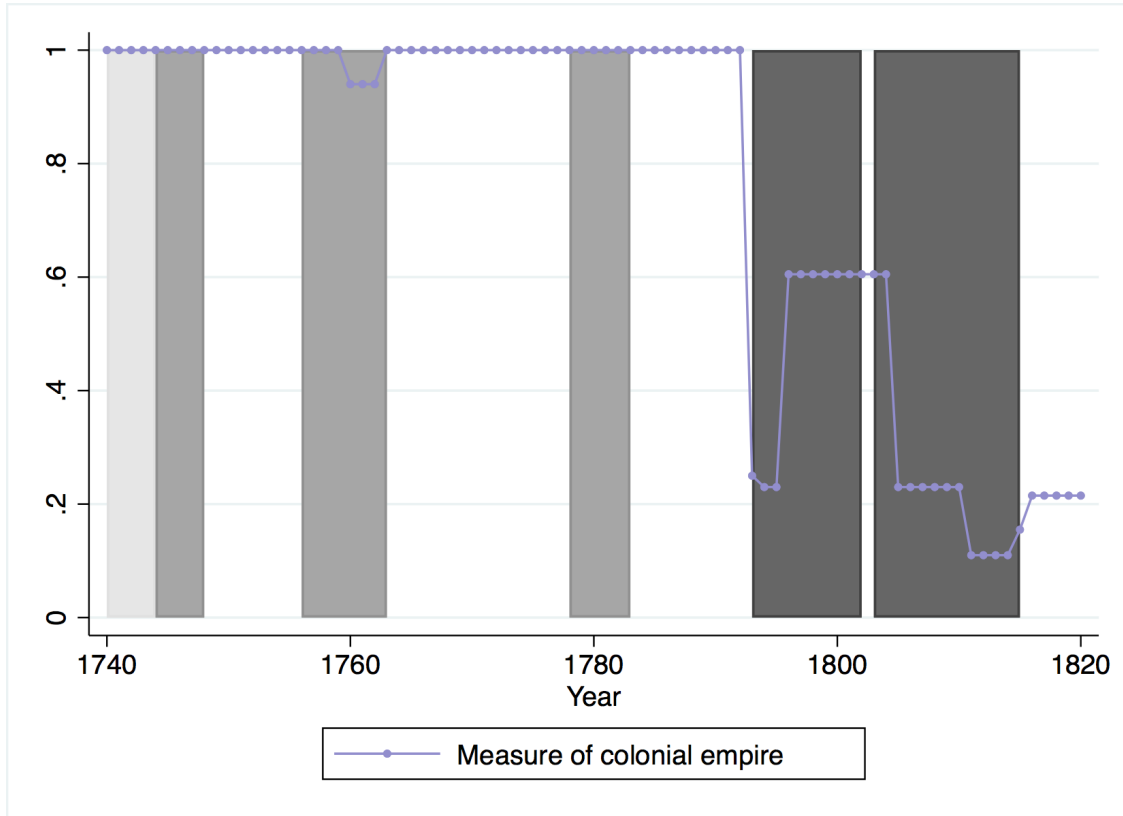
Figure 4: Naval Supremacy Ratio



Second, we include a colony loss measure. At the time, the French empire owned several colonies in America, Asia and Africa. Especially the American ones were a major source for production of

sugar and coffee, which were widely imported and then re-exported by France to other European countries. These territory, therefore, represented a valuable source for French trade, in particular St. Domingue, Guadeloupe and Martinique, which were major provider of sugar. The former, which accounted for roughly 80% of French imports in 1788 and was producing 60% of total European coffee consumption, declared its independence in 1804 and separated from the French empire, thus depriving France of one of its main sources of colonial goods. As a matter of fact, the revolt of the slaves in Haiti was a long and bloody episode and sugar production was lost well before independence was ultimately acquired. This is easily visible in the graph, where the measure of colonial empire drops from 1 to just a little bit above 0.2 already in 1793. In 1796, the measure increases again, as the revolt was partially under control and France was able to continue production and trade of sugar for a few years. This only lasted until 1804, when ultimately Haiti became independent and France lost its main source of exports for sugar. Guadeloupe was also important for its sugar production and was lost to the British between 1759 to 1763, as it is visible from the decrease of the index in the graphs, and between 1810 and 1816. Finally, Martinique was controlled almost continuously by the British, from 1794-1815, to be traded back to France, after the Napoleonic Wars. We have, therefore, created a weight variable, assigning to each colony a weight corresponding to its share of imports in 1788, for which we have data on single colony, and then interacted it with a dummy variable indicating whether that colony was under French possession in that specific year. When France had all its colonies this variable equals 1, any time one colony is missing this variable equals 1 minus the share of imports of that particular colony. For the specific case of St. Domingue, we coded the possession variable as 0 between 1793 and 1795, when the revolt started, and production was mostly destroyed or fields burnt. For the period 1795 to 1804 we have coded it as 0.5, to account for the fact that the order was partly restored and a portion of the plantation were being cultivated normally, and only 1805 Haiti became independent and the production was lost completely. Intuitively, we would expect a negative effect of this variable on the loss function; i.e. the more this measure increases (the closest it is to 1), the smaller the losses in trade on the French side. Figure 5 shows the evolution of the colony loss measure.

Figure 5: Measure of colonial empire



As we can see, for most of the eighteenth century, French empire encompassed most of its colonies, whereas after the French Revolution a substantial part of its empire was lost either to the British or because colonies obtained independence. We explore several possible causes of this fact. First, colony loss. At the end of the century, France lost some of its main colonies, St. Domingue in particular, which was providing most of its sugar imports. This created a substantial collapse in trade in the beginning of nineteenth century but does not explain the big losses of the Seven Years War.

Finally we introduce a categorical variable to measure the strictness of commercial policies versus neutral countries in wartime. Initially, the only enemies were foes, while neutral countries were allowed to continue their trade with all other partners, despite an ongoing conflict. This rule, however, had induced belligerent countries to exploit neutral ships for trading their own merchandises (Carrière, 1973). For this reason, in 1756, during Seven Years War, the British decided to put an end to this practice and produced the *Doctrine of Continuous Voyage*, which was forbidding neutrals, in time of war, to enjoy a trade from which they were barred in time of peace. This prohibition was allowing the British to seize neutral shipping and had a considerable impact on French trade, which was heavily relying on Dutch ships to transport colonial goods. It also created great discontent among neutral countries, which, however, were not able to enforce their rights efficiently until 1780,

when, finally, Russia, Norway and Sweden created the *League of Armed Neutrality*. The latter allowed them to defend their interest at least for the time of the War of American Revolution. This experiment however did not have a long lasting success and was finally put to an end in 1783 with the treaty of Paris, when Catherine of Russia renamed it the *Armed Nullity*¹⁰ (Griffiths, 1971). In 1793, with the outburst of the French Revolution and, subsequently, the Revolutionary Wars, most British goods were prohibited in France. As a response, the British adopted a policy for blockading the coast of France and, subsequently, both countries took action against neutral shipping. A year later, Denmark and Sweden attempted again to enforce their rights by creating a *Second League of Armed Neutrality*, which was joined by Russia and Prussia in 1800. No later than 1801, though, the British blockaded them (with the exception of Prussia) and bombed Copenhagen to end the League for good. In 1806, things worsen even further for neutral countries, when Napoleon enacted the Berlin decree, which provided the basic structure of the Continental System. The provisions of the Berlin Decree included: (1) prohibition of all trade with the British; (2) all British subjects in French-occupied areas were prisoners of war and their property was "fair prize"; (3) all trade in British goods was prohibited and all goods from England and her colonies were fair prize (and one-half their value was to be used to indemnify French merchants for losses to the British); and (4) no ships coming from the ports of Britain or its colonies would be permitted to use any port on the Continent (Davis and Engerman, 2006). Britain responded to this policy with a related Order in Council, which required that neutral vessels call at a British port before proceeding to the continent, hitting at neutrals such as the United States, as well as France (Davis and Engerman, 2006). The United States, were, at the time, the biggest neutral country whose trade was suffering because of the Blockade and, as a consequence, they attempted to fight back. They first enacted, in 1807, an Embargo Act directed against trade with both France and Britain, which was followed by the Non-Intercourse Act of 1809, and finally, after failure of both provisions, by a war against Britain. The United States had no better luck than France in the war, which was ultimately won by British, even if with considerable decline in trade for both sides. The situation started to unravel only around 1810, when Russia pulled out of the Continental Blockade, pushing Napoleon to attempt an invasion, which ultimately led to his final defeat, but put an end to the Blockade System and to the threat for neutral trade. Basing on these facts, we have created a categorical variable that can take three values; 0 if only enemy cargo were fair game, 1 if enemy cargo on neutral ships were fair game, 3 if any good from enemy territory were fair game. As a consequence, for this variable, we would expect a positive effect; the higher the value, the stricter the policy and the bigger the loss. The table 2

¹⁰The number of vessels Russia, Norway and Sweden owned combined were still less than the entire British navy, therefore this league was bound to be weak from the very beginning.

reports the value of this variable overtime. Table 3 reports a summary of all expected effects of the independent variables.

Table 2: Measure of neutral policy

Period	Neutral policy variable
1741-1755	0
1756-1779	1
1780-1789	0
1797-1814	2
1815-1820	0

Table 3: Summary of expected effects

Explanatory Variable	Expected Effect
Loss of colonies	-
Naval Supremacy	-
Treatment of neutral countries	+

As for wine and eau-de-vie, war do not seem to have a great impact on their trend. As for coffee and sugar, on the other hand, wars seem to be diminishing trade, however, given the big fluctuations all throughout, we cannot for sure distinguish between the effects of conflicts and the very variable pattern of trade.

6 Conclusion

In this paper we have analysed the effects of different conflicts on French trade in the eighteenth century. We have first created a loss measure by comparing the amount of trade that would have taken place in the absence of conflicts with the observed trade. We have done so both by using all the preceding peace periods to compute expected trade and just the period immediately before the conflict. From this computation we have observed mainly two things; first that the main losses were during the Seven Years War and the Revolutionary Wars-Continental Blockade, second that only as a consequence of these two conflicts there were long lasting effects. This leads us to think that there must have been a common factor that made these two wars so disruptive. We analyse several cases. Naval supremacy is a possible explanation and for this reason we construct a measure to account for it. We take the ratio first of France and Great Britain's number of warships, then that of France

and Great Britain including their allies, and finally France with neutral countries and Great Britain including their allies. Contrary to our expectations, we find rather a positive relation, meaning that an increase in the number of warship was linked to a bigger loss in trade. This can possibly be explained by the fact that countries were investing in their navies in the attempt to protect their trade or to fight wars. However, this does not seem to explain the loss in trade per-se. Another option was the loss of colonies. Especially towards the end of the century, France lost some of its richest colonies, which had a consequence on their imports. We have created a measure to account for the colonies loss, weighted for the share of trade those colonies accounted for. We find in this case little more correlation with the loss function, however this does still not entirely explain the losses of the Seven Years War, nor the fluctuations in this measure seem to be related to the loss in the Blockade period. Finally, we have investigated the policy towards neutral countries, which had been changing throughout the century. We find that, whenever the policy with respect to trade with neutral countries were looser, war losses were limited and commerce could recover its pre-war level very quickly, even outperform it. On the other hand, when the British started blockading neutral countries as well, French trade experienced a massive drop and a long convalescence.

We conclude that, even if all these factors probably were contributing to the loss in trade during conflicts, the turning point was strictly related to policy towards neutral countries. British could efficiently curtail French trade only by blockading neutral countries.

References

- Anderton, C. H. and Carter, J. R. (2001). The impact of war on trade: An interrupted times-series study. *Journal of Peace Research*, 38(4):445–457.
- Blomberg, S., Brock, and Hess, G. D. (2006). How much does violence tax trade? *The Review of Economics and Statistics*, 88(4):599–612.
- Buzan, B. (1984). Economic structure and international security: The limits of the liberal case. *International Organization*, 38(4):597–624.
- Carrière, C. (1973). *Négociants marseillais au XVIIIe siècle: contribution à l'étude des économies maritimes*, volume 2. Institut historique de Provence.
- Charles, L. and Daudin, G. (2011). La collecte du chiffre au xviii^e siècle: le bureau de la balance du commerce et la production des données sur le commerce extérieur de la france. *Revue d'histoire moderne et contemporaine*, (1):128–155.
- Charles, L. and Daudin, G. (2018). Cross-checking the sound database with the french balance du commerce data.
- Charles, L., Daudin, G., and Girard, P. TOFLIT18 database. <https://toflit18.hypotheses.org>.
- Clark, G. and Lindert, P. (2006). England_1209-1914. "[gpih.ucdavis.edu/files/England_1209-1914_\(Clark\).xls](https://gpih.ucdavis.edu/files/England_1209-1914_(Clark).xls)".
- Crouzet, F. (2008). *La Guerre Économique Franco-Anglaise Au XVIII^e Siècle*. Fayard, Paris.
- Davis, L. E. and Engerman, S. L. (2006). *Naval blockades in peace and war: an economic history since 1750*. Cambridge University Press.
- de Wailly, N. (1857). *Mémoire Sur Les Variations de La Livre Trounois Depuis Le Règne de Saint Louis Jusqu' à l'établissement de La Monnaie Décimale*, volume 2. Mémoires de l'Institut national de France, Académie des inscriptions et belles lettres, Paris.
- Deane, P. and Cole, W. (1969). *British Economic Growth 1688-1959 : Trends and Structure*. Cambridge University Press, Cambridge, 2 edition.
- Dedinger, B. and Girard, P. (2017). Exploring trade globalization in the long run: The RICardo project - Google Scholar. *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 50(1):30–48.
- Doyle, M. W. (1997). Ways of war and peace: Realism. *Liberalism, & Socialism WW Norton & Company, New York/London*.
- Federico, G. and Tena-Junguito, A. (2016). World trade, 1800-1938: A new data-set. *EHES Working Papers in Economic History*, (93):300.
- Findlay, R. and O'Rourke, K. H. (2009). *Power and plenty: trade, war, and the world economy in the second millennium*. Princeton University Press.
- Glick, R. and Taylor, A. M. (2010). Collateral damage: Trade disruption and the economic impact of war. *The Review of Economics and Statistics*, 92(1):102–127.
- Griffiths, D. M. (1971). An american contribution to the armed neutrality of 1780. *The Russian Review*, 30(2):164–172.

- Hoffman, P., Postel-Vinay, G., and Rosenthal, J.-L. (2000). *Priceless Markets: The Political Economy of Credit in Paris, 1660-1870*. Paris.
- Jastram, R. W. (1981). *Silver, the Restless Metal*. John Wiley.
- Jefferson, T. (1823). Letter from Thomas Jefferson to James Monroe, 11 June 1823.
- Juhász, R. (2014). Temporary protection and technology adoption: Evidence from the napoleonic blockade.
- Lespagnol, A. (1997). Mondialisation des trafics inter-océaniques et structures commerciales nationales au XVIIIe siècle: Contradictions et compromis. *Bulletin de la Société d'Histoire Moderne et Contemporaine*, pages 1–2.
- Levy, J. S. (1989). The causes of war: A review of theories and evidence. behavior, society, and nuclear war. p. tetlock, jl husbands, r. jervis, pc stern and c. tilly.
- Levy, J. S. and Barbieri, K. (2004). Trading with the enemy during wartime. *Security Studies*, 13(3):1–47.
- Martin, P., Mayer, T., and Thoenig, M. (2008). Make trade not war? *The Review of Economic Studies*, 75(3):865–900.
- Marzagalli, S. (2016). Was Warfare Necessary for the Functioning of Eighteenth-Century Colonial Systems? Some Reflections on the Necessity of Cross-Imperial and Foreign Trade in the French Case. In Antunes, C. and Polónia, A., editors, *Beyond Empires: Global, Self-Organizing, Cross-Imperial Networks, 1500-1800*, page 253.
- McMillan, S. M. (1997). Interdependence and conflict. *Mershon International Studies Review*, 41(Supplement_1):33–58.
- Morineau, M. (1997). La vraie nature des choses et leur enchaînement entre la France, les Antilles et l’Europe (XVir-XIX’siècle). *Revue française d’histoire d’outre-mer*, 84(314):3–24.
- Oneal, J. R. and Russett, B. M. (1997). The classical liberals were right: Democracy, interdependence, and conflict, 1950–1985. *International Studies Quarterly*, 41(2):267–294.
- O’Rourke, K. H. (2006). The worldwide economic impact of the french revolutionary and napoleonic wars, 1793–1815. *Journal of Global History*, 1(1):123–149.
- Polachek, S. W. (1980). Conflict and trade. *Journal of conflict resolution*, 24(1):55–78.
- Rahman, A. S. (2010). Fighting the forces of gravity—Seapower and maritime trade between the 18th and 20th centuries. *Explorations in Economic History*, 47(1):28–48.
- Riley, J. (1986). *The Seven Years War and the Old Regime in France*. Princeton University Press.
- Ripsman, N. M. and Blanchard, J.-M. F. (1996). Commercial liberalism under fire: Evidence from 1914 and 1936. *Security Studies*, 6(2):4–50.
- Roser, M. (2016). War and Peace. <https://ourworldindata.org/war-and-peace/>.
- Wallerstein, I. (1980). *The Modern World System II : Mercantilism and the Consolidation of the European World Economy 1600-1750*. Academic Press, New-York.