Spring 4-21-2021

The Politics of Taxation: An Economic Analysis of Politically Motivated Tariffs Placed on French Wine by the United States

Katelyn Hutson
University of Mississippi

THE POLITICS OF TAXATION: AN ECONOMIC ANALYSIS OF POLITICALLY MOTIVATED TARIFFS PLACED ON FRENCH WINE BY THE UNITED STATES

By Katelyn Hutson

A thesis presented in partial fulfillment of the requirements for completion
Of the Bachelor of Arts degree in International Studies
Croft Institute for International Studies
Sally McDonnell Barksdale Honors College
The University of Mississippi

Oxford, MS
April 2021

Approved By

_____
Advisor: Dr. Joshua Hendrickson

_____
Reader: Dr. Emily Fransee

_____
Reader: Dr. Sara Wellman

DEDICATION

This thesis is dedicated to everyone who challenged and encouraged me throughout the year. I appreciate all the support. Thank you.

ACKNOWLEDGEMENTS

Thank you to Dr. Joshua Hendrickson, my advisor, who helped me immensely throughout this process and answered my many, many questions along the way. Thank you to Dr. Wellman and Dr. Fransee for providing me feedback on my work in order to make things as clear and understandable as possible. Thank you to the Sally McDonnel Barksdale Honors College for providing me scholarship funds during my time abroad where I discovered and developed this topic. Lastly, thank you to Gracie Boland who provided me with an inside look into the French wine industry and provided me with further guidance through her written work and the work of others.

ABSTRACT

In this paper, I research the economic distortions caused by a 25% retaliatory tariff placed on French wine by the United States in October 2019. This tariff was enacted as retaliation for airline subsidies provided by various European countries to Airbus and was approved by the WTO as a valid compensation for the loss these subsidies caused to the American company Boeing. In order to view the correlation between fluctuations in US import quantities of French wine and the retaliatory tariff, I estimated the effect of the tariff on the wine market using linear regression analysis. Through this regression, I found a strong connection between the decline in overall French wine import volumes into the US and the beginning of the 25% tariff. I also found evidence of attempts by wine importers to avoid the tariff by importing bulk wine to be bottled in the US, because both the import volume and value per liter of bulk wine rose as a result of the retaliatory tariff. Lastly, I found that the value per liter of French wine imports into the US lowered as a result of the tariff, indicating a reduction in quality. All of these conclusions are consistent with economic theory. This research demonstrates that political policies that are enacted as a result of political disputes can cause economic distortions in markets unrelated to the dispute itself.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

DSB	Dispute Settlement Gateway
EC	European Commission
EU	European Union
GDP	Gross Domestic Product
L	Liters
SCM	Subsidies and Countervailing Measures
TCLA	Trade in Large Civil Aircraft
UK	United Kingdom
US	United States
USTR	Unites States Trade Representative
WTO	World Trade Organization

Introduction

In October of 2019, the ongoing trade dispute between the United States (US) and the European Union (EU) over subsidies for the airline manufacturers Boeing and Airbus finally came to a head. The World Trade Organization announced that the US was allowed to place retaliatory tariffs on various members of the EU who had been involved in subsidizing Airbus over many years. This retaliatory tariff went into effect in October 2019 and remained unchanged until January 2021 when additional items were added to the tariff group. In between those two actions, the WTO approved the EU to enact retaliatory tariffs against the US for the tax breaks provided to Boeing. The US argued that the EU unfairly determined which products to tariff as the determination was based on levels during the Covid-19 pandemic. As a result, the US adjusted their tariff calculations and added additional items in January of 2021.

The tariffs the US placed on European goods in October 2019 included only one classification of wine imports: still wine of fresh grapes in containers of two liters (L) or less. While this classification does make up a significant amount of the wine imports entering the country, including only one classification in the original tariff allowed the remaining wine imports to be targeted later in 2021.

France is particularly important in this discussion due to their involvement in the Airbus subsidies and their presence in the global wine market. During the investigation into various EU countries providing subsidies to Airbus, it was discovered that certain

countries, such as France and Germany, had provided more than others. Because of this, the US retaliatory tariff was set up to target important markets in France and Germany rather than other countries such as the UK, Spain, or Italy. This paper focuses specifically on the retaliatory tariff placed on French wine in October 2019.

The tariff on wine is important because France and the US have a strong trade relationship and a significant presence in the global wine market. Together, France and the US account for around one-fifth of global wine exports and just under one-fifth of global wine imports. The US is France's fourth largest importer of wine by volume and their top importer of wine by value. This means that French wine exporters are receiving a higher value per liter for wine imported to the US than from other large importing countries such as China, Germany, and the UK. Because France exports so much wine, a significant portion of their agricultural land and working population are dedicated to the wine industry. The French wine industry accounts for around 5% of the agricultural land and 2% of the working population in France. While these numbers may seem small, they are significant when placed next to similar data from other wine producing countries such as the US. Also, wine accounted for 3.8% of total imports from France into the US in 2018 and accounted for almost 2 billion dollars of imports that year. All of this goes to show how important the US import market is to French winemakers and that a politically motivated tariff on this industry will have significant effects.

The purpose of my thesis is to attempt to measure the magnitude of these effects. In order to see the impact of the 2019 tariff on French wine imports, I ran a linear regression to estimate the marginal effect of the implementation of the 25% tariff on French wine imports into the US Something that is important to note regarding the tariff

on French wine imports is that from October 2019 to January 2021, the tariff only applied to still wine in containers of 2 liters (L) or less, meaning the tariff applied almost solely to bottled wine imports and excluded the most valuable part of the French wine market, sparkling wine.

The results are consistent with economic theory regarding tariffs and the theory of taxation of Yoram Barzel (1976), which predicts changes in quality as a response to the implementation of a tax. I find that not only did overall French wine import volumes fall following the implementation of the 25% tariff in October 2019, but the value per liter fell as well. This latter result is consistent with Barzel's prediction that producers change the characteristics and quality of their product in order to avoid a new ad valorem tax. In the case of French wine, bulk wine, to be bottled upon arrival in the US, saw significant growth in import volumes. The 25% tariff only applied to volumes of 2L or less until January 2021, so shifting imports to bulk import methods allowed winemakers to continue to meet the demand of the consumers and avoid a price increase as a result of the tariff. In regard to the quality of wine imports directly following the implementation of the 25% tariff in 2019, the decrease in value per liter of incoming wine implies a decrease in the quality of the imported French wine. This decrease in quality is a result of winemakers attempting to reduce the impact of the tariff and make the final, consumer price lower. This decrease in value did not, however, apply to bulk wine. Bulk wine, as it was able to avoid the tariff, became more valuable per liter, also in accordance with the expectation according to Barzel.

Evaluating the impact of a political tariff is important because it quantifies the consequences of international political disputes on consumers and producers. In this

case, the impact of a multinational disagreement over the usage of subsidies and tax breaks by governments to aid the airline manufacturing industry has now trickled down to the seemingly unrelated wine industry in both the US and France. Wine producers in France are finding new, creative ways to avoid the tariff, while US importers and shop-owners are altering consumer choices by importing wines with a lower value per liter and, therefore, a lower quality of wine. The shift in wine selection by importers based on the quantity of imports, bottled or bulk, is a great demonstration of Barzel's theory on the effects of a tax on the goods of an industry.

Chapter 1: The 17 Year, Intercontinental Dispute

The dispute that led to a 25% tariff on imported wine from France, along with a few other European countries, into the US is not something that started in this decade or even this century. The two major players, Boeing and Airbus, have held a duopoly over the airplane manufacturing business since the 1990s, but this series of events began in 1969. That was the year the European Aviation Consortium was founded by France, Germany, Spain and the UK. This later became known as the Airbus Consortium. By 1988, Airbus had begun directly competing with Boeing's market through production of its A320 single-aisle jet and competition grew between Boeing and Airbus (Wittig 2010). In 1992, GATT (General Agreement on Tariffs and Trade), the predecessor to the WTO, created an agreement to resolve growing tensions between the two companies and the markets they dominated. "Negotiations were concluded in 1992 with the signature of the EC-US Agreement on Trade in Large Civil Aircraft (TLCA) which imposes disciplines on government support on both sides of the Atlantic which are significantly stricter than the relevant WTO rules: Notably, the Agreement regulates in detail the forms and limits of government support, prescribes transparency obligations and commits the parties to avoiding trade disputes." (2004 EU Memo). This agreement was accepted until 2004 by both the US and the EU and is what created the subsidy limitations that were soon broken.

In 2004, arguably as a suggestion by Boeing, the US withdrew from the TLCA and filed a suit with the WTO for subsidies granted to Airbus (Wittig 2010). On that same day, the EU filed a suit against the US. After slight hope of a deal between the two sides, the US and EU each revived their case against the other in May of 2005 and later that year the WTO officially began investigating both sides (BBC – Flare-up in EU-US trade row 2005; Reuters Staff 2020). In March 2006, the investigative panel was set to the side, but began again at the request of the US later that year (WTO DS316). The panel proceedings continued extending the expected timeline due to the, "volume of materials in this case," so the panel report was finished and circulated to WTO members in June of 2010 (WTO DS316). In this report, the panel confirmed the unfair use of subsidies to assist Airbus (Wittig 2010). The following year in March 2011, the WTO released another report to WTO members; this time finding that Boeing had received illegal US government and state subsidies (WTO DS353). This period of time is when the dispute reached a head as both sides were confirmed to have provided forbidden subsidies (DW - *WTO rules against Airbus in subsidies row with Boeing* 2018). Later that year, after allowing each side time to evaluate and respond to them, the reports were released to the public (Wittig 2010). At this point in time, it was believed that this dispute would be resolved in two to three years, following various appeals and negotiations. This was already the, "most expensive dispute in WTO history", and it was understood that should it not be resolved, both sides would be open to retaliation import duties as allowed by the WTO when forbidden subsidies are in use (Wittig 2010).

Later in 2011, the WTO upheld the ruling that forbidden subsidies were provided to Airbus through various actions. "The Appellate Body today upheld the Panel's finding

that certain subsidies provided by the European Union and certain Member state governments to Airbus are incompatible with Article 5(c) of the SCM Agreement because they have caused serious prejudice to the interests of the United States" (WTO DS216). Importantly, this ruling also mentioned the "equity infusions provided by the French and German governments to companies that formed part of the Airbus consortium" (WTO DS316). This additional aid from the French and German governments became important later in the dispute. The following year, 2012, the WTO appeal judges, "broadly uphold the ruling against US support for Boeing" (Reuters Staff 2020). The previous ruling that was upheld in 2012 stated that some of the state tax breaks "caused adverse effects to the European Communities' interests in the form of serious prejudice, finding that the effect of these subsidies was displacement and impedance (or threat thereof) of Airbus large civil aircraft from third country markets, significant price suppression and significant lost sales" (WTO DS353). Both sides insisted that they have complied with the WTO's earlier rulings while continuing to accuse the other side of continued subsidies (Reuters Staff 2020).

In 2013, Boeing announced plans for a new twin-engine 777X to be built in Washington state because of new aerospace tax breaks that had recently been passed by local legislature (Reuters Staff 2020). The EU quickly followed in 2014 by beginning a new, separate complaint [DS487] regarding the Washington state 777X tax breaks, however, this time choosing, "a faster, all-or-nothing approach by targeting them purely as "prohibited" subsidies – without the usual fallback of a second, softer claim" (Reuters Staff 2020).

By 2016, the WTO had completed a long-awaited compliance panel regarding the US case against the EU and discovered that the EU had "failed to implement the recommendations and rulings of the DSB to bring its measures into conformity with its obligations under the SCM Agreement, and to this extent, that the adopted recommendations and rulings remained operative" (WTO DS316). Only two months later in November of 2016, the WTO ruled that the Washington state tax break that aided Boeing in developing its new 777X jetliner fell into the "prohibited" category (*DW - Airbus-Boeing WTO dispute: What you need to know* 2020). This moment was considered a huge victory for both Airbus and the EU. Following this ruling, the US appealed, and the ruling was reversed in late 2017. The EU appealed to this decision, but was not successful (WTO DS487). While the US was largely cleared of the accusations by the EU, the WTO acknowledged that the US, "had failed to withdraw the earlier Washington state tax breaks" (Reuters Staff 2020).

The following year, 2018, the WTO upheld the 2016 decision that the EU had, "failed to remove support in the form of preferential government loans for Airbus's A380 superjumbo and A350 twin-aisle jet programs, causing losses for Boeing and US aerospace workers" (DW - *WTO rules against Airbus in subsidies row with Boeing* 2018). Because of this decision, the WTO arbitrator determined the U.S. could enact countermeasures that amounted to USD 7,496.623 million *per annum* (WTO DS316 2019). Similarly, in March of 2019, the WTO released a report from the Appellate Body announcing that the US has failed to end the Washington state tax breaks to Boeing (WTO DS353). Following this, the two sides publicly disagreed over, "the amount of subsidy faulted by the WTO" (Reuters Staff 2020). "The Arbitrator determined that the

level of countermeasures “commensurate with the degree and nature of the adverse effects determined to exist” amounts to USD 3,993,212,564 *per annum*” (WTO DS353 2020).

Fall of 2019 is when the tariffs came into play for this ongoing dispute. On October 14, 2019, the WTO granted the US authorization to retaliate with tariffs because of the failure by the EU to halt government support for Airbus, as withheld in the 2018 appeal (WTO DS316). Immediately following this decision, the US enacted a 25% import tariff on various goods from the involved countries including wine with an alcohol by volume (abv) of 14% or less. At this time a 10% tariff on Airbus aircraft parts also went into effect. Not long after in December 2019, the US threatened to increase tariffs in order to encourage the EU to negotiate (Reuters Staff 2020). By January 2020, the US and France reached an agreement to postpone any action on a digital tax that would affect major US tech companies such as Facebook and Google, but no changes were made on the existing tariffs (Pomranz 2020). The following month, the US increased the Airbus aircraft part tariff to 15% (Buyck 2020).

In March 2020, as part of US efforts to comply with the findings of the WTO regarding the Washington state tax breaks, “the Washington state legislature voted to remove a contested aerospace tax break that had benefited Boeing” (Hepher, Shalal, Blenkinsop 2020). To further encourage EU negotiations and cooperation, the US revealed a list of further items to receive a 25% import tariff beginning on January 6, 2021 (Pomranz 2020). Not long after in October 2020, however, The EU was granted permission by the WTO to impose tariffs on $4 billion of US goods because of the use of forbidden subsidies (Reuters Staff 2020). At that point in the dispute, both sides had

official WTO rulings of wrongdoing and both claimed to have made the necessary changes to no longer be in violation of the subsidy agreement. The European Commission (EC) offered to stop the proposed tariffs for imports from the US if the existing tariffs on imports into the US were withdrawn, but the US Trade Representative's (USTR) office announced that the EC has no basis for tariffs in the first place. They stated that the Washington state tax break has been repealed and there is no longer a valid reason to impose tariffs (Reuters Staff 2020). The USTR office did however offer to end the dispute and remove the tariffs should, "Airbus AIR.PA repay billions of dollars in aid to European governments" (Hepher, Shalal, Blenkinsop 2020).

After no agreement was met between the US and EU, the EU continued with the threat of a tariff. A 25% tariff on various goods and 15% tariff on US aircraft went into effect in early November 2020 (Brunsden 2020). Shortly after, however, the US announced that the amount subject to tariffs by the EU was calculated using time during Covid-19, making the tariff cover significantly more products than it would have during normal times. Because of this, the US announced intentions to, "compensate for this unfairness" (Bloomberg 2020). This compensation promise became reality on January 12, 2021, when the US expanded the 25% tariff to include more products including French wine above 14% abv (*French wine exporters hit by new 25% tariff from USA* 2021).

Chapter 2: Comparing the American and French Wine Industries

As can be expected when France has a significant amount of wine to export, France holds a relatively large share of the world's wine export volume when compared to the US as shown in Figure 1. Neither country is close to a majority share, but with more countries entering the wine market each year, the almost 15% share that France holds is significant, especially when compared to the less than 5% share held by the US. Also, in Figure 1, the graph shows the U.S. holding a larger share than France of import volume. The US imports around 10% of the world's wine exports while France imports a smaller share at 6%. While France is exporting a significant amount of their wine products, there is less of a demand for imported wine within French borders. Americans, however, are more inclined to welcome foreign wines alongside American wines, making for a larger consumer demand for imported wines, and therefore a larger share of the world wine import volume compared to France.

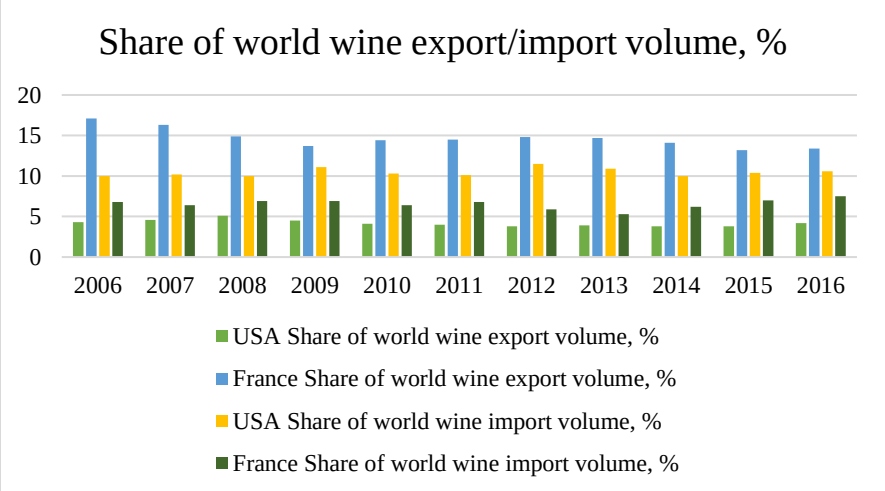

Figure 1. Source: University of Adelaide, 2017

Figure 2 and 3 show how little of an impact French imports of American wine have on the wine export industry. France is not in the top importers of American wine by volume or by value and was only included in these graphs for comparison to the top importers of American wine. Figures 4 and 5 show that not only is France exporting significantly more wine than the US, but the US is one of the top importers of French wine. By volume, the US comes in fourth, but by value the U.S. comes in first, meaning French exporters are getting more value per liter in the U.S. than other places.

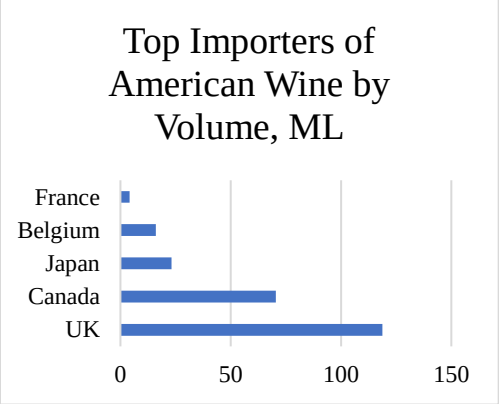

Figure 2. Source: University of Adelaide, 2017

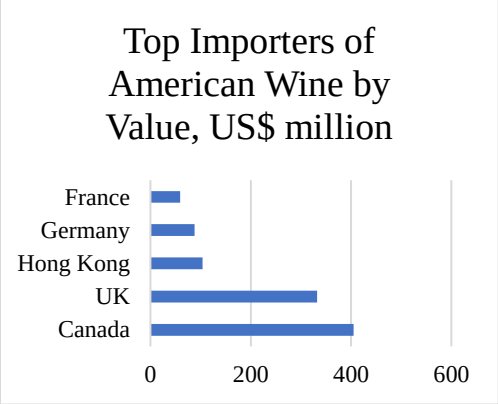

Figure 3. Source: University of Adelaide, 2017

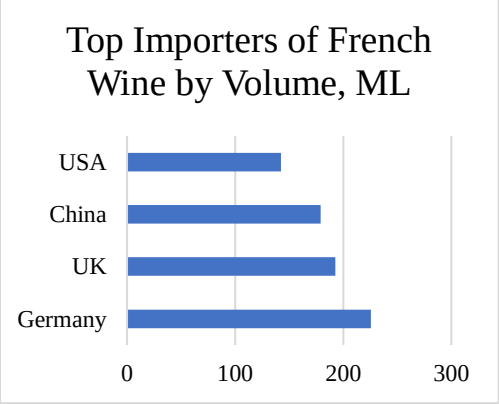

Figure 4. Source: University of Adelaide, 2017

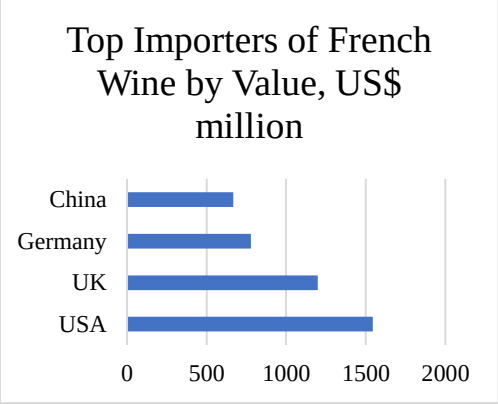

Figure 3. Source: University of Adelaide, 2017

In 2016, the US imported 142.3 million liters of wine from France, while France imported only 4.1ML from the US. Only 1.1 % of wine exports by volume from the US go into France. 3.8% of exports by value from USA go into France. With Canada holding 25.8% by value of the American wine export market, the Canadian market has

the strongest influence on American winemakers. In the other direction, however, 9.9% of French wine exports by volume go into the U.S. and 16.9% of French wine exports by value go into the US. The US is where French wine producers/exporters are earning the most money for their exports and the US holds the largest share by value of French wine exports.

According to the 2019 Business France report on 2018 wine industry data, the United States imported 1.7 billion Euros of wine from France that year. The average conversion rate from Euros to US$ in 2018 was 1.18 US$ per Euro (Macrotrends 2021). Using this conversion, the value of wine imports in 2018 was about 2 billion US$. In 2018, the total value of imports from France into the US was 52.5 billion US$ (Statistica 2021). This means that wine imports from France into the US in 2018 accounted for 3.8% of the total value of imports. Agriculture, the category of trade where wine is placed, is the fourth largest import sector from France into the US accounting for 11.7% of total imports (US Census Bureau, USA Trade Portal, 2019).

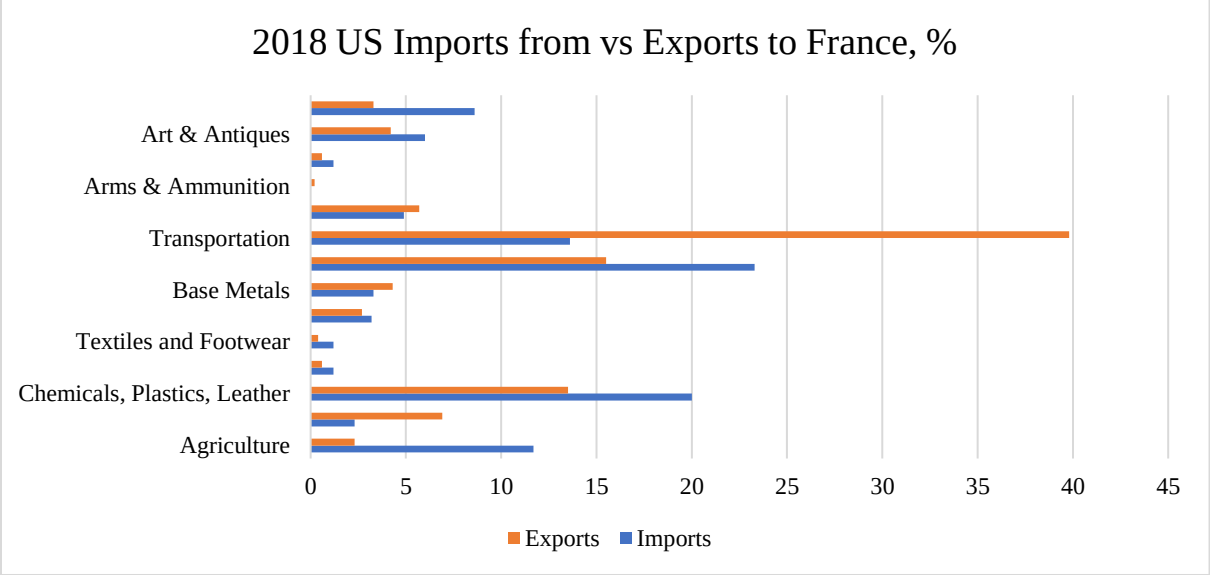

Figure 4. Source: U.S. Census Bureau, USA Trade Portal, 2019

Figure 7 shows the large difference in volume of total wine exports between the US and France. Most years, France exports a volume about 3x larger than that of the US. Figure 8 puts this information into perspective by comparing the volume of total wine exports from each country per million US dollars of real GDP. France had an even larger relative volume of wine exports than the US per million dollars of real GDP. This shows the significant impact wine exports have within the French economy compared to a fairly minimal impact on the American side of things. The US has a larger GDP than France, so the wine industry has a relatively smaller impact.

Figure 5. Source: University of Adelaide, 2017

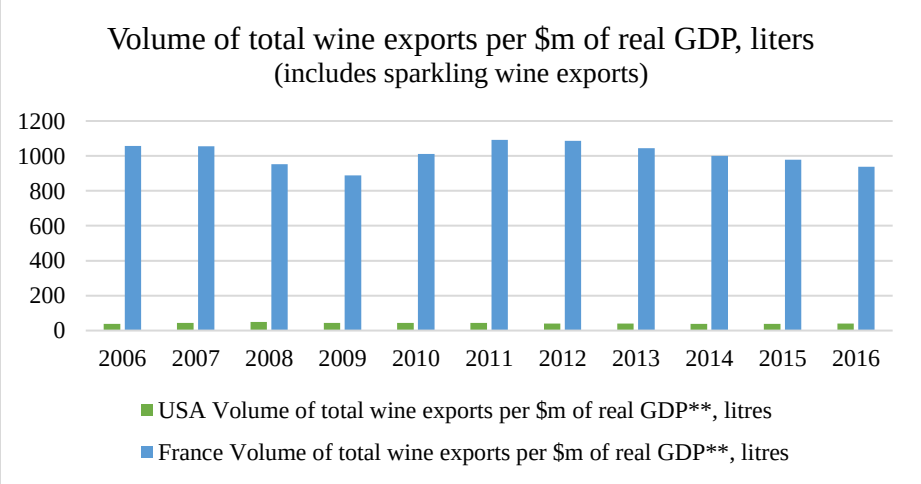

Figure 6. Source: University of Adelaide, 2017

Figure 9 shows the value of the total wine exports per million dollars of real GDP in US$ and demonstrates the dramatic value difference between French and American wine exports. In comparison to real GDP, the French total wine exports have a value of around 50 times more than the American total wine exports. While it is true that earlier it was established that France was exporting more wine than the US, this graph shows that the wine exported from France has a higher value per unit than that of the US because the difference here is larger than the difference in export volumes. It is almost double.

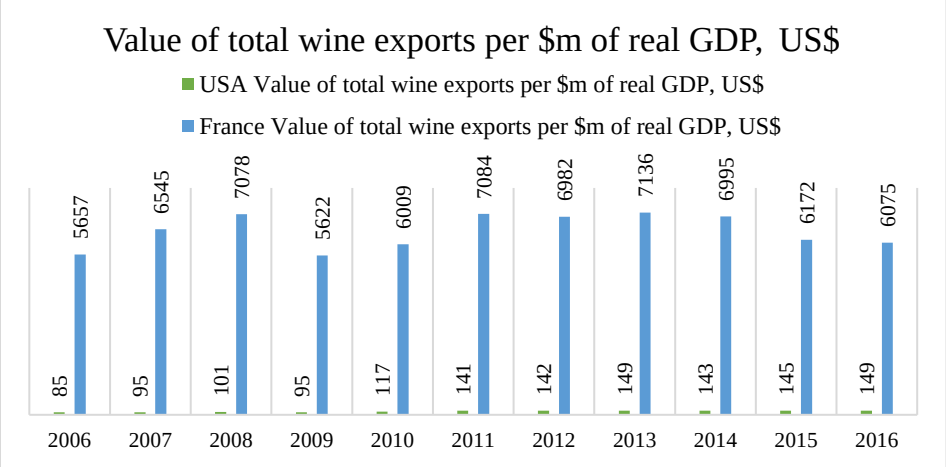

Figure 7. Source: University of Adelaide, 2017

Figure 10 shows wine's share of all merchandise exports for France and the U.S. It is evident that wine holds a much larger share in France than in the US, but in both countries it holds a relatively small share of value of all merchandise exports. This graph poses the question: why go after wine in a trade war when it is such a relatively small part of each country's export value? Figure 11 shows that both countries are exporting more wine than importing, with France exporting significantly more than importing. This allows France to export a lot while only importing a little, in line with consumer preferences. The US, however, is in a place where importing is necessary for both consumer preferences and general demand.

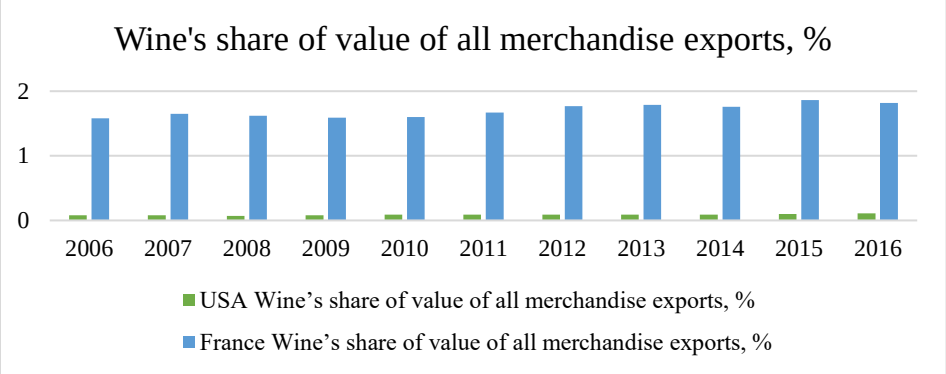

Figure 8. Source: University of Adelaide, 2017

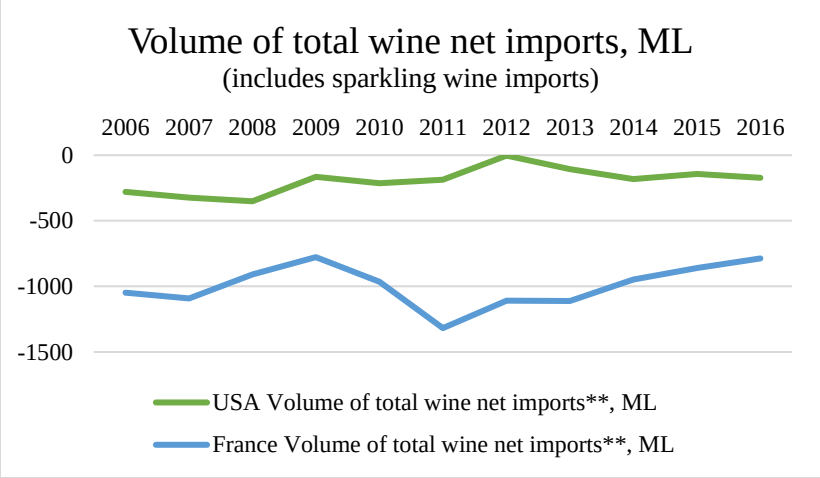

Figure 9. University of Adelaide, 2017

Figure 12 puts the volume of wine production in terms of comparison with the size of the population. As demonstrated in the graph, the volume of wine production per capita in France is significantly larger than that of the US; nearly 10 times more some years. While the average French citizen is known to drink more wine than the average American, France is producing more wine than its population will reasonably drink. As of 2016, "the annual global average alcohol consumption is 6.4 liters per person" (Ritchie and Roser 2019). This includes all varieties of alcohol and is not limited to only wine, so the annual global average consumption of wine would be smaller than 6.4 liters per person. "To make the 6.4-liter average more understandable we can express it in bottles of wine. Wine contains around 12% of pure alcohol per volume so that one liter of wine

contains 0.12 liters of pure alcohol. The global average of 6.4 liters of pure alcohol per person per year therefore equals 53 bottles of wine per person older than 15 (6.4l / 0.12l). Or to make it more memorable, around 1 liter of wine per week" (Ritchie and Roser 2019). Both the France and the US consume above the global average with 105 and 82 bottles of wine per person, respectively (Ritchie and Roser 2019). The data shown in this graph for 2016 shows France producing 68.3L per capita and the US producing 9.7L per capita. Because these numbers are liters of wine specifically, this equates to 91 and 13 bottles per capita, respectively. Although the annual global average consumption data includes other types of alcohol, for the purposes of understanding this comparison, let us assume all of the consumption is in wine. This shows that the US, as of 2016, was producing well under the correct amount per capita of wine for the population. France, however, was producing only slightly less than the expected consumption amount per capita. France and the US produce larger wine volumes, knowing it will be exported, but France especially is producing very large volumes of wine to meet the demand for French wine in other countries such as the US. Both the US and France continue to export wine because of consumer demand in other countries.

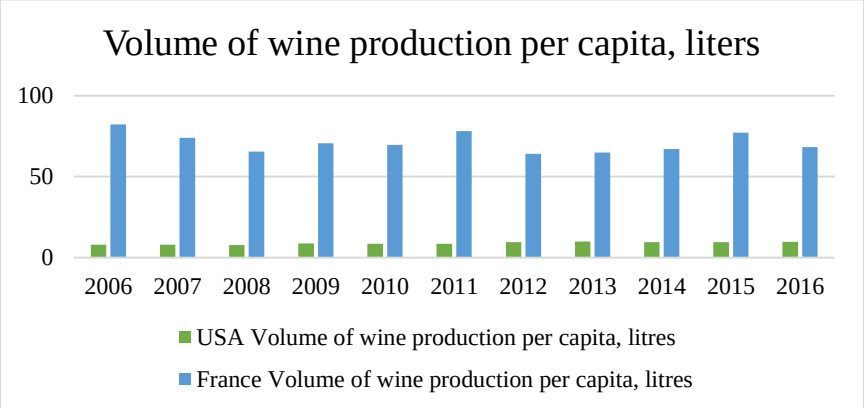

Figure 10. Source: University of Adelaide, 2017

Figure 13 shows the share of the grape crop that is used in wine production. The graph shows that almost 80% of the grape crop in France is going towards wine production, so well over the majority of their grapes are used to produce wine. In the US, however, less than half of the grape crop is going on to be used in wine production, because many American grapes are used for other purposes such as producing raisins. This graph serves to further demonstrate the importance of wine production in France by showing the significance of the wine industry within their larger agricultural industry. This also adds to the information showing that wine production in the US is significantly less impactful within the larger agricultural industry.

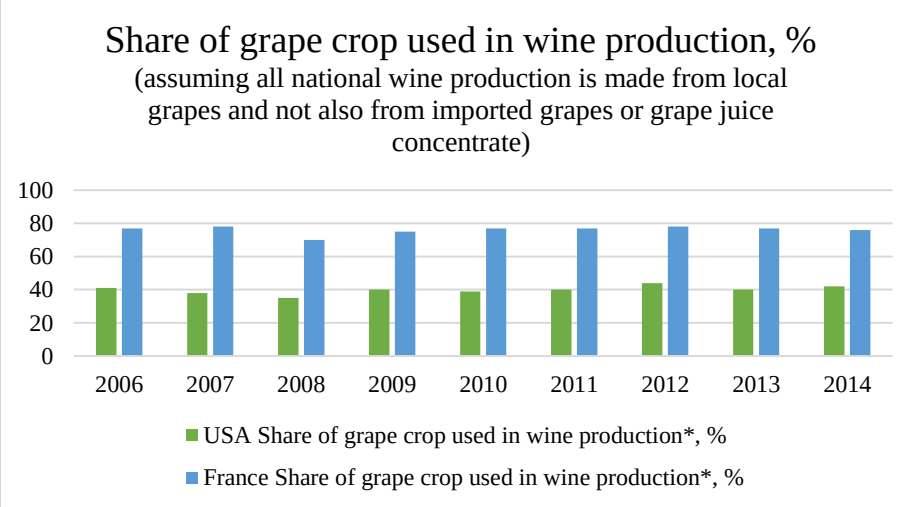

Figure 11. Source: University of Adelaide, 2017

The difference in the share of agricultural crop area under grapevine is shown in Figure 14. What is important to note in this comparison is that it is a percentage of the total agricultural crop area in each country. Should the exact amounts of crop area under grapevine had been compared, the data would not have allowed for a proper comparison, because the US has a much larger agricultural area. What this graph helps to show, is that grape crops are more significant in the French agricultural industry than in the US. This statement is strengthened with Figure 15, where the share of grapes by gross value

in crop production is compared. Not only does France have a significantly larger portion of their agricultural sector dedicated to grapevines, but they also have a significantly larger share of grapes by value within all crop production. Some years, France reaches numbers as high as one-third of gross value of all crop production coming from grapes, whereas the US does not even reach 5% within the timeline shown.

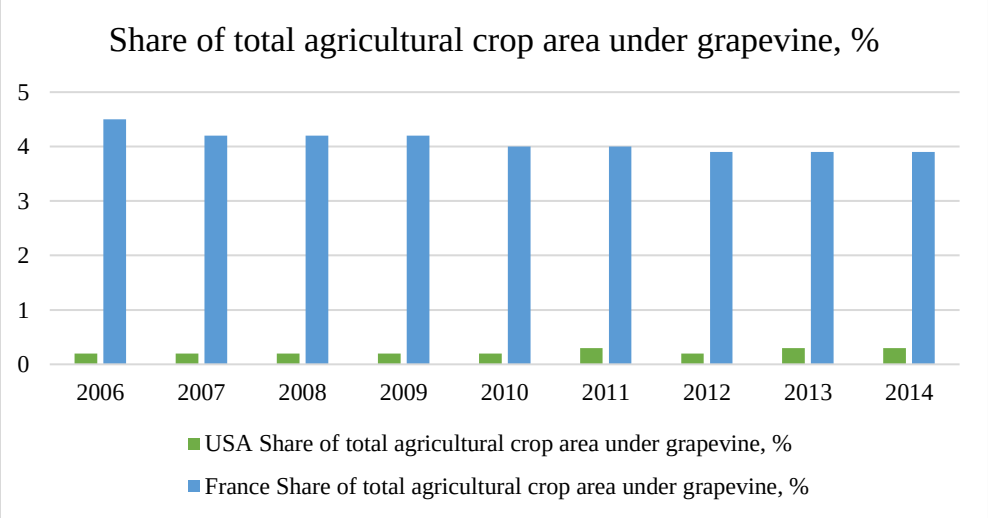

Figure 12. Source: University of Adelaide, 2017

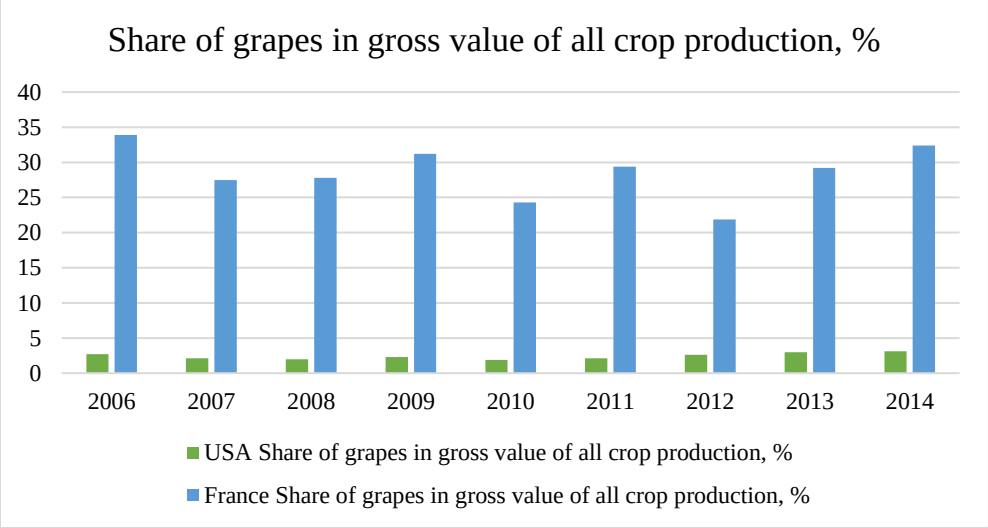

Figure 13. Source: University of Adelaide, 2017

"The wine industry accounts for nearly 600,000 jobs in France, half of them indirect, including over 142,000 wine growers and 3,000 sommeliers" (Business France 2016). According to the European Commission, as of 2018, 27.1 million people are

actively employed in France, making the wine industry account for around 2% of employment in France. While this may seem like a small portion of general employment in France, the French winemakers are famous for their ability to band together and form a strong lobby in the government. The largest and most notable lobbying group for winemakers is *L'Association Nationale des Élus de la Vigne et du Vin* (ANEV). This translates to "the National Association of Elected Officials of the Vine and Wine." This group gathers support from elected officials of all levels: local, regional, national and international. Not only do they lobby for winemakers within France but also those within the EU. This group of lawmakers works towards positive legislation for winemakers, as evidenced in 2019 when this group successfully shut down the potential "Dry January" government campaign (MercoPress 2019). The original plan was for the government to encourage people to refrain from drinking in January 2020 in an effort to encourage French citizens to drink less the rest of the year, as there are 41,000 alcohol related deaths in France each year (MercoPress 2019). ANEV quietly worked with Macron, a strong supporter of the wine industry, to discourage any further work on the "Dry January" campaign. ANEV has been vocal during this period of retaliatory tariffs on French wine and successfully worked to earn compensation funds provided by the French government and European Commission for the businesses effected by the American tariffs. They also have been very adamant that the sanctions between the US and EU must come to an end.

As demonstrated by the events described in the previous section, the additional tariffs that have been imposed on various members of the EU, in particular France and Germany, are the result of a political dispute over airline subsidies rather than economic concern for either involved party. At this point in the dispute, both sides maintain that

they have resolved their respective issues and that the opposing side has no standing for a retaliatory tariff. Neither side is willing to admit fault and therefore the trade war continues on. The U.S. and France have already begun seeing the consequences of this trade war and these consequences will continue until the conflict is resolved.

As evident in the data presented above, the choice to impose an additional, retaliatory tariff on wine is due to both the importance of the wine industry to the French economy and the significance of the US market for French wine. The wine industry accounts for 2% of jobs in France and remains well connected with elected officials across the country. Hundreds of elected officials in France and the EU work on behalf of winemakers in order to continually fight to better the industry, making the wine market a politically significant target in the ongoing trade war.

As the data presented above shows, France is one of the largest exporters of wine in the world and the US is their most valuable customer. As a result, a reduction of French wine sales in the US due to higher prices can have a significant effect on the wine market. Wine accounted for 3.8% of total imports from France into the US in 2018 and accounted for almost 2 billion dollars of imports that year.

The existing tariff (includes the time before and during the retaliatory tariff) on wine is a per unit tariff that is levied per liter of wine. The amount differs depending on the quantity, type and alcohol content of the wine, as demonstrated in Table 1 where the different designations of wine are broken down by the current, per liter tariff assigned to each type. The retaliatory tariffs that have been added to wine imports as part of the trade war are *ad valorem* tariffs, meaning the tariff is a percentage of the value of the good

rather than a fixed price per unit. This tariff is 25% applied to all imported wine, except sparkling, regardless of the quantity, type or alcohol content.

Table 1: Type of wine as designated in the US Harmonized Tariff Schedule 2021	Tariff in cents per liter
Sparkling* and Effervescent	19.8
In containers holding 2 liters or less and not over 14% abv	6.3
In containers holding 2 liters or less, over 14% abv, no “Marsala” designation	16.9
In containers of more than 2 but less than 4 liters and not over 14% abv	8.4
In containers of more than 4 liters and not over 14% abv	14
In containers of more than 2 liters and over 14% abv	22.4

*not included in the additional, retaliatory tariff

Source: 2021 United States Harmonized Tariff Schedule

Chapter 3: Economic Implications

Any tariff on a good will have an effect on the market, as demonstrated in Figure 16, the supply and demand graph, where the price before the tariff is marked as the world price, and the price with the tariff is marked as world price with tax. The consumer price with the tariff is higher than the world price which decreases demand for the product while increasing the supply. This decrease in demand therefore decreases the amount that is imported because there is less demand for the good, at the higher price, within an importing country. This decrease in imports only further adds to the surplus of demand.

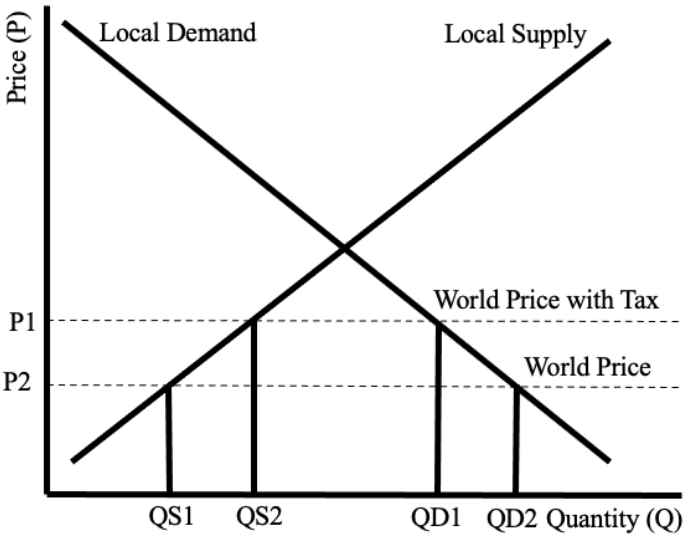

Figure 14. Effects of a Tax on Supply and Demand

Depending on the type of tariff there are two general outcomes: a new market shift towards higher quality or a new market shift towards lower quality (Barzel). The former is a result of a per unit tariff while the latter is the result of an *ad valorem* tariff.

Barzel's theory speaks to the market response to a tax and explains that a per-unit tariff increases consumer incentives to pay a subtly higher price and shift towards higher quality while an *ad valorem* tariff effects the market much higher up in the production process and changes consumer choice through changes in product availability with a shift towards lower quality. The change in consumer incentives towards higher quality within the industry with a per unit tariff is because of the relative cost of the product before and after the tariff. Also, consumers may be willing to pay a little more for a higher quality bottle of wine in this case because it costs *relatively* less after the tariff. For example, if a low-quality bottle of wine is $8 and a high-quality wine is $10 before the addition of a $2 per unit tariff, a consumer will likely choose the cheaper bottle. After the $2 tariff is applied, however, the relative price of the higher quality bottle is cheaper because $2 is a lower percentage of $10 than of $8. The tariff results in a lower percentage increase in the bottle of high-quality wine.

The result of an *ad valorem* tariff, however, is the opposite because the tariff is applied evenly across products. In this case, the market shifts towards a lower quality product, perhaps even without the knowledge of the consumer. By the time wine makes it to the consumer, the tariff has been applied evenly to all products and does not affect the relative prices of wine. Producers, high-quality wine makers in this situation, are likely to subtly lower the quality of their wine in order to lower the price and compensate for the tariff. This is because, according to Barzel, as a reaction to a tariff, producers try to consider what specifically is being taxed and separate the characteristics in order to tax less of the good. This could mean lowering the alcohol by volume level if the tax applied only to a certain level or altering the bottle size if the tax is different depending on

volume. In both the per unit example and the *ad valorem* example, consumer behavior shifted to pay a relatively smaller amount of the tariff.

While consumer behavior changes in an effort to avoid a new tariff, producers also make changes to avoid tariffs. Within this ongoing trade war, the most notable change occurred when French winemakers adjusted the alcohol content of their wines to work around the new American tariff. When the US applied the first round of retaliatory tariffs, the only wine included was still wine with an alcohol by volume (abv) of less than 14%. While white wines, such as those out of Germany, are typically around 10 or 11% abv, red wines are generally higher at around 13.5%. This means it was not a far stretch for red wine producer, such as those in Bordeaux, to produce wines with slightly higher alcohol contents in order to continue exporting at a rate closer to their pre-tariff numbers.

While this small change was partially effective, it has become difficult to sell higher abv wines in recent years because of the trend towards "lo-no beverages": low to no calorie alcoholic beverages with less sugar and less, and sometimes no, alcohol. Wine makers could attempt to avoid the new tariff but, in the process, eliminate some of their consumers. The other problem with this change towards a higher abv was that it was made evident to the government very quickly. When the US added products to the tariff list in early 2021, all other wine varieties, except for sparkling, were added. The attempt to sidestep the first 25% tariff was quashed as it no longer sufficed to avoid the 25% tariff on all wine, regardless of alcohol content. Currently, some wineries have increased their sparkling wine production in an effort bypass the tariff because of the sparkling wine exemption that currently exists.

"US Census Bureau data released last month [January 2020] showed that American imports of French wines plunged to just $57.1 million in November from $130 million the month before, when the tariffs began to bite. Imports fell again in December, to $55.7 million, according to the Census data compiled by the American Association of Wine Economists." (US Imports of French wine plummet as tariffs hit 2020). Should this pattern continue, and wine sales continue to fall, the wine industry in France will grow more effected by the 25% tariff.

Chapter 4: Analysis of Data

I chose five variables to examine the effects of the 25% tariff that went into effect on October 18, 2019 that included only still wine in containers less than two liters: (1) still wine (not dependent on container size), (2) bottled still wine, (3) bulk still wine in containers larger than ten liters, (4) all wine (not dependent on type or container size), and (5) all bulk wine in containers larger than ten liters. The first three variables that relate to still wine are included because the tariff that began in October 2019 and the later tariff in January 2021 only apply to still wine, so it is important to evaluate the effects on that category specifically. Within the still wine category, the three classifications (all, bottled, and bulk over 10L) each demonstrate a different effect of the tariff. The total still wine category demonstrates an overview of the effect on still wine as a whole, but neglects the way in which still wine is sold. This is why still bottled and still bulk over 10L are included as well.

Based on the discussion in the previous section, there are several effects on the wine industry that I would expect to observe following the implementation of the tariff. My expectation is that bottled wine is what was most effected by the October 2019 tariff. This category is the sole variety of wine import that was targeted in that tariff. However, the response of quantities of still, bulk over 10L wine should demonstrate the ability of the market to adapt in response to a new tariff. Bulk wine is classified as any wine in a

container of two liters or more, but the items that fall between two and ten liters are not always imported for the purpose of bottling upon arrival. There are specialty bottles that fall in that range. Bulk wine over 10L, however, is being imported for the purpose of bottling in the United States. As a result, I would expect to observe a shift by producers to bulk wine imports to avoid the 25% tariff, beginning in October 2019.

I also examine the total wine categories, independent of wine variety, to demonstrate the overall effect on the market. Wine of all varieties and all container sizes is capable of showing that the entire wine industry took a hit with the October 2019 tariff and will likely show a further decrease with the tariff that began in January 2021. The bulk wine over 10L, independent of wine variety, shows the general market preference to import in bulk and bottle the wine within the United States.

The value per liter categories demonstrate a different side of situation regarding what occurred as a result of the October 2019 tariff. The first of the two, wine of all types in all container sizes, is included to test the Barzel theory that quality of a good will decrease as a result of the tariff. One way to test this hypothesis is to examine the effect of the tariff on the value of wine per liter. A decrease in the value per liter is likely to correspond with a decrease in the quality of the wine. By contrast, since bulk wine over 10L is exempt from the tariff, I would expect that higher quality wines would be purchased in bulk to avoid the tariff. Bulk wine value is therefore expected to rise following the implementation of the 2019 tariff because that category grows in value to the market. Bulk wine became the least expensive route to avoid the tariff, quickly and efficiently.

In order to evaluate the relationship between import quantities and the October 2019 tariff, I estimated a linear regression in which I regressed these import variables on a policy dummy. This policy dummy was given a value of zero for the time prior to the tariff and the value of one beginning with the tariff up until the present data, October 2019 to January 2021, was given a value of one. This policy dummy allowed me to identify changes in imports that correspond to the implementation of the tariff. The data was gathered from FranceAgriMer which is the official French data for all agricultural parts of their economy. Because wine is formulated from fresh grapes, it is counted as an agricultural product and is therefore included in FranceAgriMer data. The export data I chose was part of the larger "commerce extérieur" (foreign business) data available. The results are shown in Table 2. The first column of the table lists the dependent variable in the regression. The second column lists the estimated marginal effect of the tariff. Finally, the third column lists the t-statistic associated with this coefficient estimate in order to evaluate its statistical significance.

Beginning with still wine, independent of container size, the estimate shows a decline of 5843 liters of wine as a result of the tariff. However, this estimate is not statistically significant. Given my discussion above, this is potentially due to offsetting effects of an increase in bulk wine imports alongside the decrease in bottled wine imports. I test this hypothesis by estimating the effect of the tariff on bulk wine imports and bottled wine imports separately. As the results in Table 2 show, the tariff is associated with a statistically significant decline in bottled wine, but a statistically significant increase in bulk wine. This provides some support for the hypothesis that the overall effect on still wine reflects substitution of bulk for bottled wine.

The still, bottled wine demonstrates the expected effects of the October 2019 tariff because the decline in quantity following the implementation of the tariff is 2,824,308. That is almost three million liters of estimated loss as a result of the tariff in the category it specifically targeted. This loss would have been more significant had the tariff not specified only wines below 14% abv, but the result was nonetheless very impactful. Directly offsetting this loss, however, was the increase in bulk wine over 10L imports with an increase from the expected quantity imports of 527,468 liters. While this increase is not enough to entirely offset the losses that resulted from the October 2019 tariff placement, it is significant enough to demonstrate the changes producers and exporters provided to evade the tariff. Part of the discrepancy also occurs because of the other bulk wine classification. I have chosen to include only bulk wine in containers over 10L, but the classification of bulk wine in containers between 2 and 10L also increased following the implementation of the 25% tariff in 2019.

The category of all wines, independent of type or container size, shows a loss of 2,442,797 liters from October 2019 to Jan 2021. This downward shift in wine imports was expected as a result of the tariff and this regression further demonstrates that change. The bulk wine over 10 liters, independent of wine classification, shows an increase of 527,565 liters which is only a few hundred liters above the estimated increase amount from still bulk over 10L wines, showing the majority of the increase in bulk wine imports came from the still wine classification. This is fitting because sparkling wine is more traditionally transported in bottles due to the need to keep the wine pressurized and avoid dissipation of the effervescence.

As the discussion of Barzel's work on taxation demonstrates, one should also expect a change in quality from the tax. In particular, Barzel suggests that proportional taxes should result in lower quality goods in order to minimize the magnitude of the tax. To examine this, I estimate regressions using value per liter as the dependent variable rather than quantities. The results are shown in Table 3. The loss in value per liter before and after the tariff shown in Table 3 explains a different change in wine imports as a result of the tariff beginning in October 2019. Value per liter is an indication of the quality of wine that is chosen to be imported into the United States. While the average consumer may not consciously choose a lower quality wine, much earlier in the process, importers are likely to choose lower-quality, less expensive wines as a result of a tariff. This is because once the importers are tasked with selling the wine to individual sellers across the country, it is difficult to sell wines with a higher price than normal. The individual sellers are aware of the difficulty of selling a high-quality wine at a higher price than normal, so the demand for expensive, high-quality wine decreases significantly when a tariff is put into place, almost entirely before the consumer is aware of the change.

As listed in Table 3, the estimated loss in value per liter of wine overall is 1.30 euros, demonstrating a small decrease in the quality of wine imports overall beginning with the October 2019 tariff. With an average value per liter in 2019 of 10.50 euros before the tariff, a decrease of 1.30 euros is a decrease of more than 10%. A more significant change is seen in the increase in value per liter of bulk wine over 10L, independent of wine variety. The average value per liter in 2019 before the October 2019 tariff began of 2.57 euros, an average increase of 1.82 euros is very important. That is a

71% increase in the value per liter of bulk wine as a result of the 2019 tariff and the utilization of bulk wine imports to evade the new tariff regulations. This suggests that bottled wine imports shifted toward lower-quality wines and bulk wine imports shifted to higher quality wine. This is consistent with Barzel's hypothesis.

Table 2: Evaluating Quantity of Wine Imports Before and After Tariff

Type of Import	X-Variable Coefficient	t Stat
Still Wine	-5,843	-0.76
Still, Bottled Wine	-2,824,308	-3.54
Still, Bulk >10L Wine	527,468	2.52
Wine, All Types	-2,442,797	-2.61
Bulk >10L Wine, All Types	527,565	2.52

Source: FranceAgriMer

Table 3: Evaluating Value per Liter of Wine Imports Before and After Tariff

Type of Import	X-Variable Coefficient	t Stat
Wine, All Types	-1.3009616	-2.5085618
Bulk >10L Wine, All Types	1.81758689	3.57519835

Source: FranceAgriMer

Chapter 5: The Covid-19 Impact

October 2019, when the original 25% tariff on still wine in containers of 2L or less was just a few months before the beginning of the Covid-19 pandemic. More than half of the period that I analyzed to see the impacts of the 25% retaliatory tariff, October 2019 to January 2021, occurred during government-imposed lockdowns related to Covid-19. With the pandemic impacting the U.S. only six months after the beginning of the tariff evaluated in my research, one must consider the possibility of skewed results created by the economic turmoil period that began in March 2020. The expectation during a period of economic turmoil is that people will purchase less or cheaper alcohol because they have less money freely available. While some consumer surveys have shown that the average consumer is leaning towards a less expensive, higher alcohol content bottle with the idea of a better bang for their buck, these same surveys have shown off-premises alcohol purchases, including that of wine, have increased during the pandemic.

According to a study published by Sonoma State University in June of 2020, off-premises wine sales of California wine had risen 27.6% during the Covid period (French 2020). According to this same study, "spending on wine in American households rose by 11%" (French 2020). This article indicated that the increase in off-premises wine sales had made up for on-premises sales and more. The loss from the closure of restaurants and bars across the country led to immense losses in on-premises sales, so it became

incredibly important for wineries to find ways to adapt. The largest change in how consumers began purchasing alcohol during the pandemic was a shift towards online sales. Online sales of alcohol, of any type, rose 339% within the first two months of the pandemic and continued to grow further as lockdowns and restaurant closures continued (Martin 2020).

Specifically in the wine industry, as opposed to general alcohol consumption numbers, the average consumer increased their wine consumption. According to research done by Wine Intelligence, in March 2020, the average number of wine drinking occasions per regular wine drinker rose to 9.7 times per month from the 9.3 times per month calculated one year prior (Arthur 2020). This same research demonstrated that US consumers generally leaned towards less expensive wine than normal, unless the wine drinker was particularly invested in wine quality. Consumers already purchasing on the higher end of the market were more likely to increase their wine budget further. While spending habits did change, the movement was marginal. Another side of the wine industry that changed as a result of the pandemic is the market for sparkling wine. Sparkling wine saw a 4.2% decrease in volume in the beginning months of the pandemic because of the general depression that surrounded that time (Thach 2021). Sparkling wine, such as Champagne or Prosecco, are seen as something for celebratory purposes and the early pandemic period was not considered a celebratory time. While sparkling wine recovered slightly during the summer months, the fall and winter of 2020 continued to decrease sales as Covid-19 continued to spread.

All of these stats tell a mixed story, but overall, “total wine dollar sales revenue fell 9.9% in 2020” (Thach 2021). This loss came from the closure of restaurants and

bars, while it was offset by off-premises sales increases with record sales. While some wine sales revenue loss for French wine may have been caused by the pandemic, the October 2019 tariff is also to blame. Had the pandemic been the sole cause of the downturn in French wine imports into the U.S. during the period I evaluated, all sectors of wine imports would have gone down, but that was not the case. As the regression results demonstrate, imports of bottled wine that was affected by the 25% tariff in 2019 fell while imports of bulk wine, both still and independent of variety, increased significantly.

The part of the data that suggests impacts from Covid-19 rather than the 25% tariff is the difference in the decrease of total still wine imports compared to the decrease of all wine imports. The estimated decrease of all wine imports is much larger than the estimated decrease in still wine imports. I believe this is due to the decrease in sparkling wine demand during the pandemic period. Sparkling wine, particularly that from the Champagne region, accounts for a large portion of French wine exports each year. While sparkling wine was not affected by the tariff, I believe this industry did suffer losses because of the pandemic. As I stated before, this would help to account for the difference between still wine import losses and all wine import losses, when still wine was the target of the October 2019 25% tariff.

Conclusion

What started as a subtle disagreement over airline manufacturing subsidies and tax breaks for Boeing and Airbus has now snowballed into a 17-year, ongoing trade dispute that has affected many unconnected industries. One largely affected sector is the wine industry. More specifically, this trade dispute has impacted French wine imports into the US. After over a year of discussions and attempts to end the trade dispute and remove the retaliatory tariffs, no agreement was made, the EU added retaliatory tariffs against the US, and the US increased their retaliatory tariffs against the EU. This is important in the French wine industry because France is one of the more targeted countries in this trade dispute, as they are accused of having subsidized Airbus more than most other EU countries.

The French wine market is one of the largest in the world and the US is their most valuable customer. A change in this relationship has the potential to dramatically impact thousands of people who work in the wine industry on both sides of the ocean, from vignerons in France to importers in the US. French winemakers rely heavily on the American market to earn the most money per bottle and therefore get the highest return for their hard work. This value is exactly why French wine is a target in this trade dispute. Not only is the market highly valuable, but there are many people impacted by it and therefore this industry has a strong voice in politics, especially in France. By targeting the wine industry, the US can potentially cause French citizens to encourage

their leaders to end the dispute, rather than relying solely on a bilateral agreement between the US and EU.

As was discussed throughout the paper, the results of the 25% retaliatory tariff places on French wine in October 2019 followed the theories of Barzel as was expected. There was a decrease in the quantity of wine imports overall, but there was an increase in bulk wine imports. This shift implies that producers evaluated the good, determined what specifically was being taxed, and found a way to separate the components of the good in order to avoid the tax. The taxed portion of the good in this case was wine in containers of 2 liters or less, which in most cases would be a bottle. In order to avoid the tariff, producers exported wine in bulk and bottled it upon arrival to the US, therefore eliminating the part of the good that was actively being taxed. The other part of the industry shifts that followed Barzel's theories is the shift towards lower quality wine. The value per liter for wine overall decreased in connection with the implementation of the tariff, implying that producers likely began exporting lower quality wine so that it would be a lower price and therefore be less impacted by the *ad valorem* tariff. The last large shift in the industry was the increase in value per liter of bulk wine imports. This is consistent with Barzel's theory because the bulk wine, as the substitute to avoid the tariff, became more valuable to the market.

A problem with this approach to analyzing the impacts of the tariff beginning in October 2019, is that the Covid-19 pandemic began only six months later. The pandemic led to a significant decrease in on-premises alcohol sales, but this decrease was offset almost entirely by an increase in off-premises sales such as supermarkets, liquor stores, and online sales. While there was a slight decrease in overall wine consumption that may

account for some of the decrease in French wine imports during the period reviewed, it does not account for all of it. There are aspects of the fall in import volumes that do not correspond simply to a decrease in consumer demand but correspond to efforts to avoid a 25% tariff on French wine imports. A decrease in still, bottled wine, the classification targeted beginning in October 2019, alongside the significant increase in bulk wine imports tells a story of French winemakers attempting to avoid a new tariff rather than consumers choosing to purchase less wine. The trends regarding value per liter, for wine overall and bulk wine over 10L, both correspond to Barzel's theory for how an industry will react to a tax, further implying the correlation between the French wine import changes and the 25% tariff enacted in October 2019.

The limitations in this research are primarily focused around time. The first limitation is that this trade dispute is still ongoing and therefore the retaliatory tariff is still in place, and it is difficult to evaluate the exact results of the tariff on the market until more data is available and one can look at the market movement before and after the tariff. The other time limitation also centers around the active nature of this trade dispute, because the newest change in the tariff regulations occurred in January of this year, 2021. The available data ends with January 2021, so it is impossible to see the effects of the tariff expansions which will likely impact the wine industry even more than the original tariff from October 2019. This new tariff revision includes all French wine, regardless of abv or container size. The only French wine exempt from the 25% tariff at this time is sparkling wine which is considered to be a possible bargaining chip for the US, should the trade dispute continue. This tariff revision is especially important because all of the producer efforts to avoid the October 2019 tariff are now ineffective in avoiding

the 25% tariff, so there is likely to be a further decrease in French wine imports into the US and a further decrease in French wine quality as predicted by the Barzel theory.

This research is also limited by the scope which has been possible within my timeframe. Should this research be expanded, there are further aspects that could be analyzed, especially those related to the simultaneous impacts of the retaliatory tariff and Covid-19. With vaccinations on the rise and Covid-19 slowly losing its grip on the economy and society, it will become possible to view the impacts of the tariff outside of the Covid-19 period and evaluate what impact the pandemic added. The other way this research could be expanded in the future is through a more thorough look into the quality and variety choices of exporters and importers. This would allow me to further test the theory that wine quality has shifted downwards in connection to the tariff implementation but also evaluate if there has been a shift towards other varieties of wine from outside of France. Many US wines use the same grape varieties as French wines, so it is possible the tariff could cause American consumers to shift towards cheaper, local wines. This would likely be most impacted by the belief in terroir within the wine industry and whether the land and climate in which the grapes grow creates the wine rather than simply specific grape varieties. Terroir cannot be imported or recreated in a different region or country, so a preference for a specific terroir would have no substitute.

Overall, there are many limitations and openings for further research within this analysis, but the regression demonstrates a correlation between the October 2019 tariff on French wine and a decline in French wine quantity imports and a decline in the quality of French wine imports. These consequences of the tariff are far reaching from the producer in France, through the exporters in France, across the ocean to importers in the US, and

all the way down to the average consumer in a grocery store somewhere in the US. A large political dispute, such as that over the airline manufacturing subsidies and tax breaks, can have consequences that trickle down to all members of the involved countries, even without people noticing. While the average wine drinker may not notice a subtle change in quality or a slight increase in price, these changes are there and begin far before the consumer even considers purchasing that bottle of wine.

These subtle changes for the consumer are a consequence of significant economic distortions caused by political policies. This research demonstrated the far-reaching effects of political disputes and political decisions. Unrelated industries suffer largely as a result of political disputes when policies are created that alter the economy and change the way a market operates.

Bibliography

"Aerospace Subsidies Dispute." *Boeing.* 2017.

"Airbus-Boeing WTO dispute: What you need to know." *Deutsch Welle.* 13 October 2020

Alonso Ugaglia, Adeline, Jean-Marie Cardebat, and Linda Jiao. "The French Wine Industry." *The Palgrave Handbook of Wine Industry Economics,* 2019, pp. 17-46.

Anderson, Kym, Signe Nelgen, and Vincente Pinilla. "Global Wine Markets, 1860 to 2016: a statistical compendium." *University of Adelaide Press,* 2017.

Anderson, Kym and Vincente Pinilla. "Wine globalization: a new comparative history." *Cambridge University Press,* 2018.

Anderson, Kym. "Making the most of wine tax reform." *Wine Economics Research Centre,* Wine Policy Brief no. 2, 2010.

Anderson, Kym. "Why tax wine consumption?" *Wine Economics Research Centre,* Wine Policy Brief no. 13, 2015.

Arthur, Rachel. "8 ways Covid-19 is changing US wine drinking habits." *Beveragedaily.com.* 4 Aug 2020.

Bagwell, Kyle, and Robert W. Staiger. "An Economic Theory of GATT." *The American Economic Review,* vol. 89, no. 1, 1999, pp. 215-248.

Bailey, Joanna. "Airbus Hit As New US Tariffs Come Into Force." *Simple Flying.* 12 Jan 2021.

Barzel, Yoram. "An Alternative Approach to the Analysis of Taxation." *Journal of Political Economy,* 1976, vol. 84, issue 6, pp. 1177-97.

Blenkinsop, Philip, Tim Hepher, and Andrea Shalal. "Exclusive: U.S. offers tariff truce if Airbus repays billions in aid – sources." *Reuters.* 15 Oct 2020.

Brunsden, Jim. "EU hits US goods with tariffs in Airbus-Boeing dispute." *Financial Times.* 9 Nov 2020.

Business France and COOP de France. "Wine Industry: Key Info in 10 Points." *Business France.* Sept 2016.

Buyck, Cathy. "U.S. Ups Import Duty Rate on New Airbus Aircraft." *AINonline.* 17 Feb 2020.

Candau, Fabien, et al. "How Income and Crowding Effects Influence the World Market for French Wines." *World Economy,* vol. 40, no. 5, May 2017, pp. 963–977. EBSCOhost, doi:10.1111/twec.12446.

Carroll, Stephen. "New year, new tariffs: French wine & cognac hit by new US trade tax." *France 24.* 15 Jan 2021.

Chancy, Isabella M. "Promoting Wine by Country." *International Journal of Wine Marketing,* vol. 14, no. 1, 2002, pp. 34-40.

De La Hamaide, Sybille. "French wine and spirits exports hit record in 2019, tougher year looms." *Reuters.* 12 Feb 2020.

Di Vita, Giuseppe, Francesco Caracciolo, Filippo Brun, and Mario D'Amico. "Picking out wine: Consumer motivation behind different quality wines choice." *Wine Economics and Policy*, vol. 8, no. 1, 2019, pp. 16-27.

Ditter, Jean-Guillaume, and Joëlle Brouard. "The Competitiveness of French Protected Designation of Origin Wines: A Theoretical Analysis of the Role of Proximity."

Journal of Wine Research, vol. 25, no. 1, Mar. 2014, pp. 5–18. EBSCOhost, doi:10.1080/09571264.2014.871120.

Donnan, Shawn, Charlotte Ryan, and Jonathan Stearns. "U.S. Widens Tariffs on EU Imports in Airbus, Boeing Fight." *Bloomberg.* 31 Dec 2020.

Dopp, Terrence, and Margaret Talev. "President Trump Hints at His Next Trade War Target: French Wine." *Time*. 10 June 2019.

Editor. "Nielsen Covid-19 Beverage Alcohol Insights." *Advisor: Wine Industry Network.* 16 Nov 2020.

Editorial Board. "Opinion: The U.S.-E.U. trade war is mutually destructive. The two sides should finally negotiate." *The Washington Post.* 11 Nov 2020.

"Entre le Brexit, la Covid et les taxes Trump, le marché du vin français est malmené." *La Revue du vin de France.* 27 Oct 2020.

"Euro Dollar Exchange Rate (EUR USD) – Historical Chart." *Macrotrends.*

European Commission. "Boeing WTO case: The EU puts in place countermeasures against U.S. exports." *European Commission.* 9 Nov 2020.

European Commission. "EU-US Agreement on Large Civil Aircraft 1992: key facts and figures." *European Commission.* Brussels, Belgium. 6 Oct 2004.

"Flare-up in EU-US air trade row." *BBC News.* 31 May 2005.

FranceAgriMer. 2021.

"French wine exporters hit by new 25% tariff from USA." *The Local: France's news in English.* 12 Jan 2021.

"French winemakers' lobby convince Marcon to forget about a 'Dry January'". *MercoPress: South Atlantic News Agency.* 22 Nov 2019.

French, Phoebe. "US Off-Premise Wine Sales Up 27.6% During Covid-19." *The Drinks Business.* 21 July 2020.

Gawande, Kishore, Pravin Krishna, and Michael J. Robbins. "Foreign Lobbies and U.S. Trade Policy." *The Review of Economics and Statistics,* vol. 88, no. 3, 2006, pp. 563-571.

Halstead, Lulie. "US Covid-19 Impact Report Issue #1 Related as Open Source." *Wine Intelligence.* July 2020.

Heien, Dale, and Eric N. Sims. "The Impact of the Canada-United States Free Trade Agreement on U.S. Wine Exports." *American Journal of Agricultural Economics,* vol. 82, no. 1, 2000, pp. 173-182.

Hussain, M., S. Cholette, and R.M. Castaldi. "An analysis of globalization forces in the wine industry: Implications and recommendations for wineries." *Journal of Global Marketing,* vol. 21, no. 1, 2008, pp. 33-47.

Islam, Faisal. "We're proud of what we've done, says Trump's trade chief." *BBC News.* 17 Dec 2020.

Jiao, Linda. "Macroeconomic determinants of wine prices." *International Journal of Wine Business Research,* vol. 29, no. 3, 2017, pp. 234-250.

Johnson, Renée. "The U.S. Wine Industry and Selected Trade Issues with the European Union." *Congressional Research Service.* July 25, 2016.

"Labour market information." *European Commission.* Dec 2019.

"Les coprésidents de l'ANEV demandent un fonds de compensation de la surtaxe américaine sur les vins et un moratoire sur les sanctions commerciales de l'UE et des USA." *Les Élus de la Vigne et du Vin.* 20 Jan 2021.

Maggi, Giovanni, and Andrés Rodríguez-Clare. "A Political-Economy Theory of Trade Agreements." *The American Economic Review,* vol. 97, no. 4, 2007, pp. 1374-1406.

Mann, Brian. "Hangover from Alcohol Boom Could Last Long After Pandemic Ends." *NPR.* 11 Sept 2020.

Mariani, Angela, Eugenio Pomarici, and Vasco Boatto. "The international wine trade Recent trends and critical issues." *Wine Economics and Policy,* vol. 1, no. 1, 2012, pp. 24-20.

Mariani, Angela, Francesco Napoletano, Riccardo Vecchio, and Eugenio Pomarici. "European Wine Exports: The Key Role of Trade Policy." *EuroChoices*, vol. 13, no. 3, 2014, pp. 46-53.

Marks, Denton. "Wine and economics: transacting the elixir of life." *Edward Elgar Publishing*, 2015.

Martin, Kat. "Impact of Covid-19 on Retail Alcohol Sales." *Winsight Grocery Business.* 22 Jun 2020.

McMillan, Rob. "What is the Industry Reporting for 2020 Results? The SVB Survey Has Early Returns [Still Open]." *Silicon Valley Bank.* 21 Oct 2020.

Meloni, Giulia, and Johan Swinnen. "The Political Economy of Regulations and Trade: Wine Trade 1860–1970." *World Economy*, vol. 41, no. 6, June 2018, pp. 1567–1595. EBSCOhost, doi:10.1111/twec.12655.

Moens, Barbara, and Jakob Hanke Vela. "EU keeps its shield up in the US trade war." *Politico.* 10 Nov 2020.

Nepveux, Michael. "EU to Impose Tariffs on $4 Billion in U.S. Goods." *American Farm Bureau Federation.* 12 Nov 2020.

"Objectifs et missions." *Les Élus de la Vigne et du Vin,* 2021.

Office of Technology Evaluation. "2018 Commodity Trade with France." *U.S. Census Bureau, USA Trade Portal.* 27 Mar 2019.

Office of the United States Trade Representative. "Notice of Revision of Section 301 Action: Enforcement of U.S. WTO Rights in Large Civil Aircraft Dispute." *Office of the United States Trade Representative (USTR).* 6 Jan 2021.

Pomranz, Mike. "French Wine Spared from Latest Round of Tariffs." *Food & Wine.* 14 July 2020.

Reuters Staff. "Timeline: Highlights of the 16-year Airbus, Boeing trade war." *Reuters.* 13 Oct 2020.

Ritchie, Hannah, and Max Roser. "Alcohol Consumption." *Our World in Data,* 2019.

Sabanoglu, Tugba. "Total value of U.S. trade in goods with France 2020, by month." *Statista,* 2021.

"Section 301 Investigation – EU Large Civil Aircraft. Final Product List." *Office of the United States Trade Representative,* 2019.

Tennant, Jennifer. "Political Economy and Contemporary Capitalism: Radical Perspectives on Economic Theory and Policy." *Science & Society,* vol. 68, no. 4, 2004, pp. 499-501.

Thach, Liz. "Overview of 2020 US Wine Market Stats." *White Paper Report.* Feb 2021.

"The WTO dispute: Airbus advocates fair and balanced trade." *Airbus S.A.S.* 2021.

United States International Trade Commission. "Harmonized Tariff Schedule of the United States (2021) Preliminary Revision 3." Chapter 22. 2021.

"US imports of French wine plummet as tariffs hit." *The Local: France's news in English.* 7 Feb 2020.

"US imports of French wine plummet as tariffs hit." *The Local: France's news in English.* 7 Feb 2020.

Van Aaken, Anne, and Jürgen Kurtz. "Beyond Rational Choice: International Trade Law and The Behavioral Political Economy of Protectionism." *Journal of International Economic Law*, vol. 22, no. 4, 2019, pp. 601-628.

Wall, Howard J. "The Non-Equivalence of Specific and "Ad Valorem" Tariffs with Quality-Differentiated Goods." *Journal of Economic Integration,* vol. 9, no. 1, 1994, pp. 80-93.

"What is Champagne wine? Effervescence." *Comité Champagne,* 2021.

Wittig, Stephan. "The Airbus-Boeing Dispute: Implications of the WTO Boeing Decision." *Intereconomics: Review of European Economic Policy*, vol. 45, no. 4, 2010, pp. 262-263.

World Trade Organization. "DS316: European Communities and Certain member States – Measures Affecting Trade in Large Civil Aircraft." *World Trade Organization.* 25 Aug 2020.

World Trade Organization. "DS353: United States – Measures Affecting Trade in Large Civil Aircraft – Second Complaint." *World Trade Organization.* 16 Oct 2020.

World Trade Organization. "DS487: United States – Conditional Tax Incentives for Large Civil Aircraft." *World Trade Organization.* 26 Sep 2017.

"WSWA Releases Statement on USTR Decision to Maintain Current Tariff Levels on EU Wine and Spirits." *Wine & Spirits Wholesalers of America.* 12 Aug 2020.

"WTO rules against Airbus in subsidies row with Boeing." *Deutsche Welle.* 15 May 2018.

Zimmerman, Liza. "Wine Trends During the Covid-19 Pandemic." *Forbes.* 26 Oct 2020.

Zissimos, Ben. "Optimum tariffs and retaliation: How country numbers matter." *Journal of International Economics,* vol. 78, no. 2, 2009, pp. 276-289.

Zumbrun, Josh. "America Taxed Your Favorite Bordeaux? Try One With More Alcohol." *The Washington Post.* 19 Nov 2020.