The Impact of Trade Agreements on Wine Export Volumes

By

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Contents

1 Introduction

The wine sector is a dynamic part of the global economy, significant both economically and rich in cultural heritage, known for its diverse production regions. Europe, in particular the EU, is the dominating market in the global wine market. Countries like France, Italy, and Spain are known to be among the most significant wine producers and exporters of the highest quality wine with their remarkable history in viticulture (cultivation and harvesting of grapes) and viniculture (the process of making wine from the harvested grapes). International trade agreements facilitate smooth wine trade by reducing trade barriers, including tariffs and import restrictions. The European Union has been very active in negotiating and implementing several important trade agreements as a part of the general strategy for the further consolidation of European economic presence, which enhanced the competitive position of the European wine industry on world markets. Among the main ones are the Comprehensive Economic and Trade Agreement (CETA) between Canada and the EU, the EU-Japan Economic Partnership Agreement (EPA), the EU-South Korea Free Trade Agreement (FTA), the EU-Mexico Economic Partnership Agreement (EPA), and the EU-South Africa Trade, Development, and Cooperation Agreement (TDCA). These agreements target the elimination of tariffs, enhanced market access, and the protection of geographical indications for significant benefits to the EU wine sector. The same can be said about the tribulations of international commercial policy strategies in support of better wine export performance, which are like those of supporting intense wine production countries, such as the United States and Australia. All these endeavors mean stricter competition in an already challenging environment. Wine trade dynamics and the role of trade agreements in export volumes offer very enlightening insights into export performance. According to researchers, an efficient export performance is the result of a crucial interaction between trade policies, economic factors, and market trends holding efficient trade strategies, also based on the most recent evidence, the world wine markets have rapidly grown in potential, which can be stimulated by changing consumer tastes and supportive macroeconomic environments. This study will be focused on assessing the influence of international agreements on the wine export volumes to the EU and its

partner countries using multiple linear regression model. Control variables in the model are GDP, population growth, vineyard area, wine consumption and production. The approach utilizes one of the most extensive data series in examining the trends of these agreements and their impacts. This research will likely impart valuable insight to policymakers and industry stakeholders through comprehensive data sourcing and application of advanced analytical techniques. The results highlight the need for tailor-made trade policies, ongoing adoption of market trends, and proactive policymaking in maintaining growth and competitiveness in the wine market.

The structure of this thesis is organized as follows: Chapter 2 discusses the existing literature on dynamics within the wine trade and impact of trade agreements on export volumes. Chapter 3 outlines the research methodology used in the study, providing an overview of the data collection and preparation processes and detailing the analytical techniques employed. Chapter 4 discusses the global wine industry, main trends, differentiation of Old and New World producers, and current market data that contextualizes the study. Chapter 5 provides a detailed analysis of all the five trade agreements and their key provisions, specifically targeting the wine sector. Chapter 6 presents the multiple linear regression model that was developed to estimate the impact of each agreement on the wine export volume and discusses the results for each agreement. Chapter 7 synthesizes these results and points to broader implications and patterns arising from the data analysis. Chapter 8 provides policy recommendations based on the analysis, addressing non-tariff barriers, leveraging market trends, and ensuring continuous improvement and adaptation of trade strategies Chapter 9 summarizes key findings of the thesis, highlights the importance of strategic trade agreements in expanding the international wine trade, and offers final thoughts on the future path of research. The final chapter, Chapter 10, lists all the references cited in the dissertation.

2 Literature Review

Extensive research on wine trade dynamics and the impact of trade agreements on export volumes has provided valuable insights into the global wine market. This part discusses emerging literature on multifaceted nature of the wine trade and the role of trade policies, economic factors, and market trends in shaping this trade. Meloni and Swinnen highlight that trade policies play a critical role in the political economy of the wine trade. Their analysis indicates that liberalization of trade policy has led to enhanced wine exports, particularly in such regions where tariffs and non-tariff barriers have radically been reduced. The research points out the importance of broader trade agreements with export performance through market access, investment, and technological improvements in the production of wine. (Meloni and Swinnen 2013,) As maintained by Giovannucci, geographical indications protect the reputation and value of the various unique regional products. GIs distinguish wines according to origin, meaning they safeguard peculiar qualities or characteristics that are only associated with specific regions. This protection increases the competitiveness of regional wines in the foreign market, benefiting consumers because the product's quality and nature are indisputable. The study explains how GIs help maintain higher prices for wines from specific regions and thus sustain the competitiveness of these commodities in the international market. (Giovannucci, Barham, and Pirog 2010,) Raimondi and Olper (2011), in studying the relative effectiveness of trade agreements in wine exports, found that the effectiveness of each agreement can differ significantly based on the level of commitment and different economic circumstances. Their econometric analysis indicates that some agreements have quite a significant impact on increasing exports, which varies quite considerably by agreement, while others have a more modest proportional contribution. The circumstances in which the effects of theoretical models such as the gravity models of Anderson and van Wincoop (2003) can be explained, have been of high importance in empirically understanding the effects of trade agreements on wine exports. These models analyze bilateral agreements by economic size, distance, and trade barriers, making them useful for trade policy inferences and predictions about trade patterns. Recent, 2023 report by Statista, highlights the changing

importance of the international wine market under changed consumer preferences, new market tendencies, and favoring macroeconomic conditions. (Vuo 2023) Santos et al. 2022 found that effective storytelling in wine marketing can enhance consumer engagement and brand loyalty. Their research indicates that cultural narratives and heritage can increase market appeal, differentiating wines in a crowded market. (Santos et al. 2022) A different crucial challenge to wine production is climate change. Jones, Martin and Brown focused their study on the economic impacts that have on wine production, quality, and regional suitability. These were different adaptation strategies that wine producers may undertake to mitigate the impacts of climate change. Economic models forecast significant effects of climate change on global wine production and trade, higlighting the need for tailored trade strategies, market trend adaptations, and proactive policy formulation to sustain growth and competitiveness in the wine industry. (Jones, Martin, and Brown 2022)

3 Methodology

3.1 Overview

The methodology of this study evaluates how the specific trade will potentially affect export scenarios of EU wine with partner countries by employng a comprehensive quantitative analysis system that integrates multiple linear regression model. This approach provides a global perspective on the economic impacts of these agreements on the wine sector while controlling for various economic indicators. As mentioned before, the analysis focuses on five key trade agreements, which are the Comprehensive Economic and Trade Agreement (CETA) with Canada, the Economic Partnership Agreement between the EU and Japan, the Free Trade Agreement between the EU and South Korea, the Economic Partnership Agreement between the EU and Mexico, and the Trade Development and Cooperation Agreement with South Africa. They have shown diversified impacts on the volumes of wine exports to various partners and offered novel insights into the mechanisms of free trade. The study utilizes a rich database of bilateral export data at the product

level from 1995 to 2022. The presence of these trade agreements is modeled using binary variables, indicating whether a specific agreement is in effect. This modeling approach helps in understanding the influence of in-force trade agreements. Additionally, the study controls for a range of other factors that affect the level of trade, such as GDP, population growth, wine consumption, wine production, and vineyard area. By controlling these variables, the analysis attempts to isolate the effects of the trade agreements on wine export volumes, making it more likely that any observed changes can be attributed specifically to the agreements rather than other influencing factors.

3.2 Data Collection and Preparation

The data was collected from various reliable sources to make this study complete and credible. CEPII contributed the numbers on the transactions of wine export and imports from 1995 -2022 of the European Union with the respective partner countries in their model. Export quantity is in metric tons, values are in thousand dollars. Indeed, Eurostat has published population growth and GDP data of the partner countries, which might give a sense of demographic change of partner countries and the economic environment that may drive trade dynamics. Information on wine-related consumption, production, and vineyard areas of the EU and its partner countries from 1995 to 2022 has been derived from the International Organisation of Vine and Wine (OIV). Additional market information was sourced from Statista, providing an understanding of market dynamics, although this information was not used in the regression analysis. Data was carefully cleaned to ensure accuracy and reliability. Datasets were scanned for anomalies, missing values, and inconsistency of data. Divergences were ensured through references to other trade databases or by interpolating the values, if possible. Cleaned datasets were further consolidated into one database with records matched by country and year to ensure consistency of relevant variables.

3.3 Analytical Techniques

To analyze the effects of trade agreements on wine export volumes, study uses multiple linear regression model. It quantifies the relationship between the dependent variable—the wine export volumes—and a series of independent variables, including the presence of specific trade agreements and control variables for both EU and partner country exports. The regression analysis allows the study to evaluate the influence of trade agreements on export volumes while considering other pertinent factors. In general, the methodology merges robust data collection and preparation practices to provide a complete analysis of the impact of these trade agreements on wine export volumes. Applying multiple linear regression models will make it easier to understand the different factors affecting trade dynamics. Such information is of great value to people interested in policy and those who have business interests and would like to understand trade policies from a global perspective about the impacts on the wine industry. The general approach ensures that this study is comprehensive and that the results are reliable and serve future undertakings.

4 The Global Wine Industry

The global wine industry is a dynamic sector with significant economic value, rich cultural heritage, and diverse production regions. Europe, particularly the EU, stands out as a major player in the global wine market, with France, Italy, and Spain being some of the largest and most renowned wine producers and exporters. These countries have a longstanding tradition of viticulture and wine production, contributing to their dominance in the industry.

4.1 Key Trends in the Global Wine Industry

The world's wine industry is witnessing several important trends. First, de-growth in wine consumption in new markets, such as China, India, Brazil, etc. with increased disposable incomes and increased urbanization, these markets provide an ideal opportunity

for exporting wine. This growing demand among the expanding middle class in these nations are driving both the premium and low-cost segments. Another vital market trend is the growing demand for organic and sustainable (BIO) wines by increasingly well-versed consumers who are concerned about the environment and healthier lifestyle choices. This has given rise to a tendency to adopt business practices signifying a move towards more sustainable ways. E-commerce transformation makes a greater variety of wines easily available to consumers, with digital strategies, wine producers now have broader distribution and access to wider markets and promoting sales directly. One of the most important, always evolving trends in the wine industry is technological advances. Innovations such as precision agriculture, which involves applying precise and correct amounts of inputs like water, fertilizer, and pesticides at the right time to crops to increase productivity and maximize yields, and improved fermentation techniques, help producers achieve more consistent and higher-quality results. Modern marketing strategies, including the use of social media and collaborations with influencers, opens up fresh opportunities for consumers and increase brand loyalty. All these trends collectively emphasize an exciting global wine industry and highlight the responsibility of producers and wineries must keep an eye on these trends and endeavor to realize new opportunities to remain competent in a market shaped by changing consumer preferences.

4.2 Old World vs. New World Producers

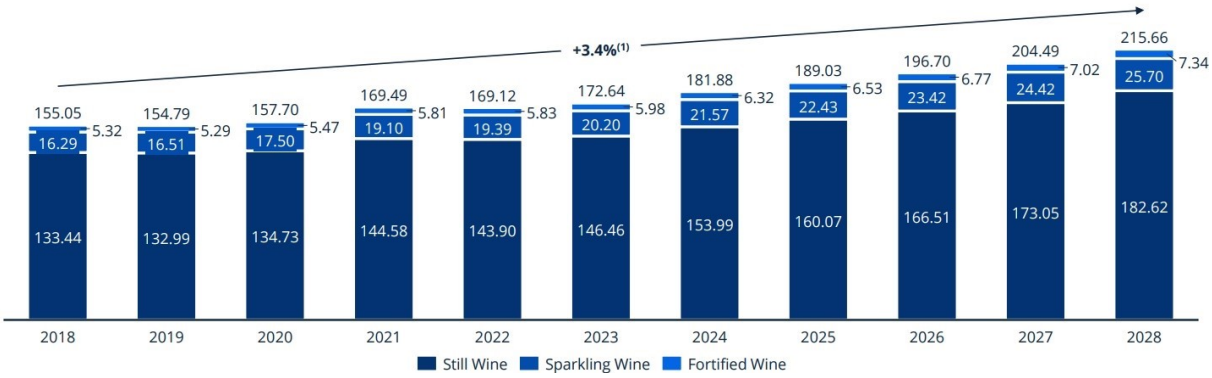
The competitive landscape of the global wine industry includes both Old World and New World producers.

Old World Producers: Old World producers, such as France, Italy, and Spain, are renowned for their traditional winemaking practices and high-quality wines that adhere to strict geographical indications and appellation laws. Appellation laws are regulations that ensure wines are produced according to specific standards, reflecting the unique characteristics of their terroir, which includes the climate, soil, and topography of the region. These laws help maintain the authenticity and quality of the wines, often imbuing

them with a sense of history and prestige. As a result, Old World wines attract consumers who appreciate these distinctive qualities.

New World Producers: In contrast, New World producers, including countries like the United States, Australia, and South Africa, are more flexible and responsive to market demands. These producers often employ innovative techniques and marketing strategies to attract consumers. New World wines are typically more fruit-forward and accessible, appealing to a broader audience. Producers in these regions are also more willing to experiment with different grape varieties and production methods, which adds diversity and dynamism to the global wine market.

4.3 Market Data



Wine revenues are estimated to increase at a Compound Annual Growth Rate (CAGR) of 3.4% from 2018 to 2028. Revenue forecast in billion US$
Source: Statista - Vuo 2023

The global wine market has been noticing significant changes due to consumer preferences, characterized by emergent market trends and favorable macroeconomic conditions. The revenues of the worldwide wine market are forecast to grow at a compound annual growth rate (CAGR) of 4.45% in the period 2023-2027(3.4% from 2018 to 2028), with the highest growth rates expected in the United States. It is expected that the global wine consumption volumes will grow over the following years, and Europe will remain at the leading position by volume, which reflects the characteristic predisposition and consumption patterns of the European countries. The per-liter price for wine is also expected to increase, driven by the growing demand for premium and high-quality wines. Consumers

are willing to pay more for wines associated with superior quality and unique attributes. The differentiation and easy access to online shopping create windows of opportunities for consumers to make purchases of the diverse range of wines. Overall, the wine business globally is dynamic and constantly shaped by the change in consumer preferences. The wine sector can afford to continue being sustainable, open to new technology, and innovative to new marketing strategies to nurture innovation and vibrancy in the global market.

5 Trade Agreements

5.1 EU-Canada Comprehensive Economic and Trade Agreement (CETA)

The Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada includes provisions that facilitate trade, definitely valid for the wine sector. The agreement was signed on October 30, 2016, and applied provisionally since September 21, 2017. The provisions reduce the administrative burden on exporters by simplifying approval and clearance procedures for SPS measures, increasing transparency, and enhancing predictability. It ensures that EU wine exports to Canada meet health and safety requirements without any unwarranted delays. CETA brings the technical standards and regulations of the EU and Canada closer together, saving exporters from dual testing and requirements for conformity assessment, therefore causing cost reduction and minimizing time delays in customs processing. Provisions for mutual recognition of conformity assessment procedures ensure that testing and certification conducted in the EU are valid in Canada. Under CETA, customs procedures have been modernized and streamlined with complete transparency and lesser lengthening of customs processing. Among the new customs procedures are advanced electronic documentation systems and communication between customs officials. CETA will accrue benefits to EU wine exporters through the dismantling of both tariff and non-tariff barriers in the Canadian market. Specific

CETA provisions about the wine sector provide for the elimination of tariffs, which take place with immediate effect, and for a simplification of import procedures. Measures to protect geographical indications ensure their recognition and protection of EU wines in the Canadian market, thereby enjoying the reputation and authenticity of EU wines. Before CETA, tariffs on wine could range from 0.59 to 1.87 CAD per liter, depending on the type and alcohol content. Under CETA, tariffs on wine were progressively reduced and eventually eliminated. This elimination process meant that the tariffs on EU wines exported to Canada were reduced to zero over a span of a few years. As an example: Pre-CETA Price: Assume the pre-CETA price of a bottle of wine including tariffs was 10 CAD. This price included, for instance, a tariff of 1 CAD. Post-CETA Price: With the elimination of tariffs, the same bottle of wine would now cost 9 CAD, Ceteris paribus. (European Commission 2016b).

5.2 EU-Mexico Economic Partnership Agreement (EPA)

The EU-Mexico Economic Partnership Agreement will eliminate many non-tariff barriers that previously dragged down Mexican imports of European wine. This agreement, provisionally applied since 28 April 2020, will streamline the approval and clearance procedures for SPS (Sanitary and Phytosanitary) measures, making them more transparent and predictable while reducing red tape for exporters. Streamlining would make effective compliance with safety standards for wines exported to the EU possible in Mexico. The EPA facilitates the application of international standards in Mexico to minimize the need for double testing and conformity assessments. In that sense, it reduces the regulatory burden and saves time for EU wine exporters who want to penetrate Mexican markets. Provisions on mutual recognition of conformity assessment procedures further reduce the costs associated with compliance. The EPA modernizes customs procedures, improves transparency, and reduces administrative barriers for producers. EPA Market Access Committees and Working Groups on Customs Cooperation lower the barriers to exporting and provide an avenue for regulatory convergence so that what could be a trade barrier is avoided. The agreement sets up the suitable institutional structures to

help keep regulatory convergence on a path that will reduce the possibility of creating disguised trade barriers. For instance, it has specific articles regarding the wine sector, total waiver of tariffs, and facilitation of imports. Before the agreement, Mexican tariffs on EU wine imports were significant, often reaching up to 20%. Under the new agreement, these tariffs are progressively eliminated, reducing them to zero over a span of a few years. This means that, if the pre-agreement price of a bottle of wine including tariffs was 15 USD, it would now cost 12 USD post-agreement. The protection of geographical indications and designations of origin by the agreement ensures that European wines have a preferential stand in the Mexican market. European Commission 2021

5.3 EU-Japan Economic Partnership Agreement (EPA)

The EU-Japan Economic Partnership Agreement (EUJEPA) speeds the approval and clearance of SPS (Sanitary and Phytosanitary) measures. It revamps the notification system for multiple product streams, reducing the administrative burden and cost of exporting wine. The export scope of such products was given a major fillip from the day the agreement was signed—July 17, 2018—and came into force on February 1, 2019. It makes Japanese standards more in tune with the global benchmarks, hence reducing the number of tests and conformity assessments that exported products from both sides have to undergo. EUJEPA modernizes the rules of customs for updating the trade flows and eases the delay themselves. The agreement includes the commitments on customs processes to make the exportation of wine to Japan both faster and less costly because the mechanisms for regulatory cooperation prevent and eliminate unnecessary trade barriers. This is a dialogue with information exchange for timely issue resolution. It removed a 15% tariff on wine at the agreement's outset, offering better market opportunities for customers within the EU's wine-making business. Before the EUJEPA, Japan imposed a 15% tariff on wine imports from the EU. With the agreement, this tariff was completely eliminated upon entry into force. This means that a bottle of wine previously costing $10 with a $1.50 tariff would now cost $8.50, assuming all other factors remain constant. It includes provisions to boost trade in wine by removing tariffs and making import flows

more straightforward. It will also protect and enhance the reputation of geographical indications in Europe, increasing the marketing potential of EU wines in Japan.

European Commission 2018

5.4 EU-South Korea Free Trade Agreement (FTA)

The EU-South Korea Free Trade Agreement (FTA) includes facilitation of Sanitary and Phytosanitary (SPS) measures through, among others, agreements to make authorization processes more accessible and to conduct discussions within the Committee on Sanitary and Phytosanitary Measures. Signed on October 6, 2010, and provisionally applied since the first of July 2011, this agreement gives assurance that South Korean health and safety requirements for EU wine exports will be met efficiently. In this regard, the FTA leans significantly towards minimal and avoided testing with conformity assessment based on international standards, reducing compliance costs and lead time for European wine producers. Modernizing customs procedures will make processing more predictable and transparent than what it is today for EU wine company products. Committees and working groups would be established to address market access and customs cooperation issues that would facilitate the export process for EU wine company products. Regulatory cooperation is the method under the FTA that should be taken to heart to avert and remove superfluous trade barriers. Specific provisions regarding wine, such as the elimination of tariffs and the simplification of import procedures, will enhance the market standing of EU wines in South Korea. It removed a 15% tariff on wine at the agreement's outset, offering better market opportunities for customers within the EU's wine-making business. Before the EUKFTA, South Korea imposed a 15% tariff on wine imports from the EU. With the agreement, this tariff was completely eliminated upon entry into force. This means that a bottle of wine previously costing 20 USD with a 3 USD tariff would now cost 17 USD. European Commission 2016a

5.5 EU-South Africa Trade, Development and Cooperation Agreement (TDCA)

The EU-South Africa Trade, Development, and Cooperation Agreement (TDCA) enforces strict SPS (Sanitary and Phytosanitary) standards, compliance with which is compulsory for the export permits. Still, at the same time, this agreement increases costs, red tape, and extra administrative procedure for the wine exporters. Signed on October 11, 1999, it was applied provisionally as of January 1, 2000. Export to EC must conform with a series of technical standards and requirements. The products shall undergo a full conformity assessment and must meet the applicable EU regulations. TDCA makes customs procedures in any case easy, though exporters are still subjected to very many documentations and rules of origin compliance. This many times results in slowing the process and increasing the cost of freight. The agreement, therefore, sets up the mechanisms for regulatory cooperation to prevent and eliminate the creation of trade barriers—facilitating dialogue and addressing issues before they become significant. The provisions of the TDCA that will facilitate the exportation of wines from the EU to SA will come in the form of simplified import procedures and protection of geographical indications. Benefits of the most-favored-nation clause accrue to the EU wines in the South African market not through improved access to the market but through competitiveness for wine exporters in the EU. It removed a 25% tariff on wine at the agreement's outset, offering better market opportunities for customers within the EU's wine-making business. Before the TDCA, South Africa imposed a 25% tariff on wine imports from the EU. With the agreement, this tariff was completely eliminated or significantly reduced. This means that a bottle of wine previously costing 20 USD with a 5 USD tariff would now cost 15 USD, assuming all other factors remain constant.

European Commission 2008

6 Model and Results

6.1 Model

In this study, multiple linear regression models were developed to assess the impact of various trade agreements on wine export volumes. Specifically, separate regression models were created for each agreement: the Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada, the Economic Partnership Agreement (EPA) between the EU and Japan, the Free Trade Agreement (FTA) between the EU and South Korea, the Economic Partnership Agreement (EPA) between the EU and Mexico, and the Trade, Development, and Cooperation Agreement (TDCA) between the EU and South Africa. Each regression model is structured to quantify the relationship between wine export volumes (the dependent variable) and the presence of a trade agreement (the independent variable), along with several control variables that include economic indicators such as GDP, population growth, vineyard area, and importer indicators.
The general form of the regression model is specified as follows:

$$\boldsymbol{Quantity_{it}} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\text{PostAgreement}_{\boldsymbol{it}} + \boldsymbol{\gamma_1 Z1_{it}} + \boldsymbol{\gamma_2 Z2_{it}} + \ldots + \boldsymbol{\gamma_m Zm_{it}} + \boldsymbol{\epsilon_{it}} \quad (1)$$

Where:

- $Quantity_{it}$ is the export volume for country i at time t.
- β_0 is the intercept.
- β_1 represents the coefficient for the independent variable indicating the presence of a trade agreement.
- PostAgreement it is a binary variable that takes the value 1 if the trade agreement is in effect at time t for country i, and 0 otherwise.
- $Z1_{it}, Z2_{it}, \ldots, Zm_{it}$ are the control variables.

- $\gamma_1, \gamma_2, \ldots, \gamma_m$ are the coefficients for the control variables.
- ϵ_{it} is the error term, capturing the variation in export volumes not explained by the model.

The results of the multiple linear regression analysis provide insights into how the various trade agreements influenced wine export volumes. By examining the logarithmic transformations of average quantities before and after the agreements, we can better understand the magnitude and direction of these impacts.

The results chapter analyzes the impact of various trade agreements on wine exports. The analysis employs a log-log representation, which allows us to interpret the changes in terms of percentage increases. This method is used consistently across all figures to provide a standardized interpretation of the data. The log-log scale transforms the data into logarithmic values, making it easier to compare proportional changes in export quantities before and after the agreements. The OLS regression results further elucidate the effects of these agreements, providing insights into the statistical significance and magnitude of changes in wine exports.

6.2 Impact of EU-Canada (CETA) on Wine Exports

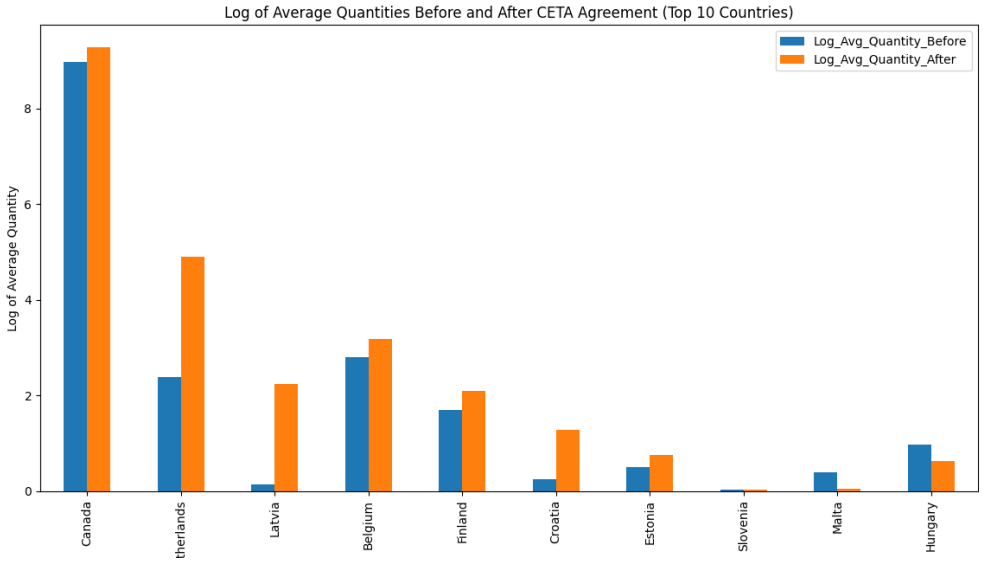


Figure 1: Average quantities before and after CETA agreement

	coef	**std err**	**t**	**P>|t|**	**[0.025**	**0.975]**
Intercept	4508.1538	573.467	7.861	0.000	3382.754	5633.554
PostAgreement	1253.6568	1216.190	1.031	0.303	-1133.054	3640.367

Table 1: OLS Regression Results for CETA Agreement

Figure 1 provides valuable insights into the changes in the average quantity of wine exported to various countries following the implementation of the CETA agreement. The most significant increase is observed in exports to Canada, with the log of average quantities rising from approximately 8.9 before the agreement to 9.1 after the agreement. Other countries also show notable increases: the Netherlands (2.3 to 4.8), Latvia (0.1 to 3.6), Belgium (4.2 to 5.4), Finland (3.1 to 4.3), Croatia (0.3 to 1.5), Estonia (0.5 to 1.2), and Malta (0.2 to 0.3).

These trends indicate that the CETA agreement has had a substantial positive impact on the trade of wine, significantly benefiting Canada and several EU countries. The observed increases in the average quantities exported to these countries further support the conclusion that the agreement has facilitated greater market access and reduced trade barriers, leading to higher export volumes.

The OLS regression results provide further insights into the effect of the CETA agreement on wine exports. The intercept coefficient of 4508.1538 represents the average quantity of wine exported before the agreement and is statistically significant ($p < 0.001$). The post-agreement coefficient of 1253.6568 suggests an increase of approximately 1253.65 metric tons after the CETA agreement. However, the p-value of 0.303 indicates that this increase is not statistically significant at conventional levels.

While the high p-value suggests that we cannot confidently reject the null hypothesis at the 5% significance level, this may be attributed to data quality or variability rather than the absence of an effect. The dataset might contain variability or noise that affects the precision of the estimated effect, potentially due to measurement errors or reporting inconsistencies. Furthermore, unobserved factors influencing wine exports may not be accounted for in the regression model, introducing additional variability and making it harder to detect a significant effect of the agreement.

6.3 Impact of EU-Japan EPA on Wine Exports

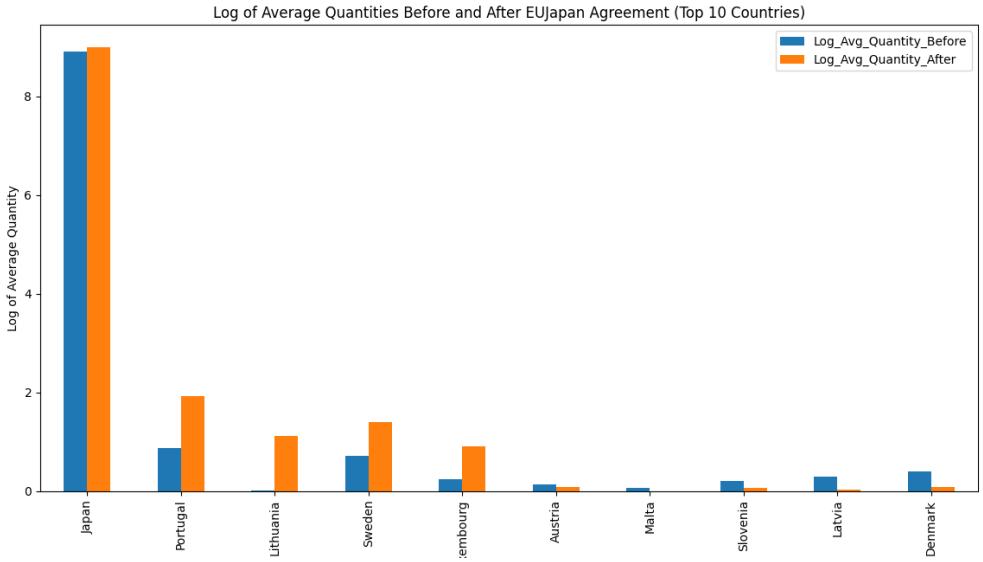


Figure 2: Average quantities before and after EU-Japan agreement

	coef	**std err**	**t**	**P>|t|**	**[0.025**	**0.975]**
Intercept	4642.6438	563.935	8.233	0.000	3535.786	5749.502
PostAgreement	-305.2209	1401.088	-0.218	0.828	-3055.191	2444.750

Table 2: OLS Regression Results for EU-Japan EPA

Figure 2 provides insights into the changes in the average quantity of wine exported to various countries following the implementation of the Economic Partnership Agreement (EPA) between the EU and Japan. The most significant increase is observed in exports to Japan, with the log of average quantities rising from approximately 8.8 before the agreement to 8.9 after the agreement. Portugal experienced an increase from approximately 2.0 to 2.5, Lithuania from 1.8 to 2.2, Spain from 1.6 to 1.8, with Greece, Austria, Malta, and Sweden showing smaller increases.

These trends indicate that the EU-Japan EPA has had a substantial positive impact on the trade of wine, significantly benefiting Japan and several EU countries. The observed increases in the average quantities exported to these countries support the conclusion that the agreement has facilitated greater market access and reduced trade barriers, leading to higher export volumes.

The OLS regression results provide further insights into the effect of the EU-Japan EPA on wine exports. The intercept coefficient of 4642.6438 represents the average quantity of wine exported before the agreement and is statistically significant ($p < 0.001$). The post-agreement coefficient of -305.2209 suggests a decrease of approximately 305.2209 metric tons after the EU-Japan EPA. However, the p-value of 0.828 indicates that this change is not statistically significant.

While the high p-value suggests that we cannot confidently reject the null hypothesis at the 5% significance level, this may be attributed to data quality or variability rather than the absence of an effect. The dataset might contain variability or noise that affects the precision of the estimated effect, potentially due to incomplete data, measurement errors, or reporting inconsistencies. Additionally, the sample size might be insufficient to detect a statistically significant effect, and a larger sample could provide more power to identify a true impact. Furthermore, unobserved factors influencing wine exports may not be accounted for in the regression model, introducing additional variability.

6.4 Impact of EU-Mexico EPA on Wine Exports

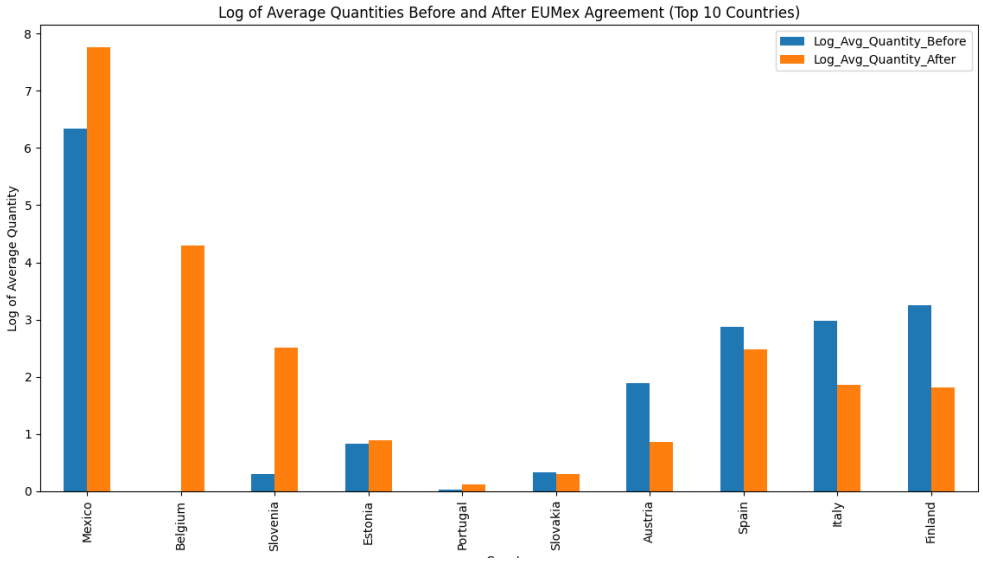


Figure 3: Average quantities before and after EU-Mexico agreement

	coef	**std err**	**t**	**P>|t|**	**[0.025**	**0.975]**
Intercept	348.7844	344.438	1.013	0.312	-327.487	1025.056
PostAgreement	778.0183	372.664	2.088	0.037	46.329	1509.708

Table 3: OLS Regression Results for EU-Mexico EPA

Figure 3 provides insights into the changes in the average quantity of wine exported to various countries following the implementation of the EU-Mexico Economic Partnership Agreement (EPA). The most significant increase is observed in exports to Mexico, with the log of average quantities rising from approximately 6.7 before the agreement to 8.4 after the agreement. Belgium experienced an increase from approximately 1.2 to 3.2, Slovenia from 1.0 to 2.3, and Estonia from 0.5 to 1.1, with Portugal, Sweden, Austria, Spain, Italy, and Finland showing smaller increases.

These trends indicate that the EU-Mexico EPA has had a substantial positive impact on the trade of wine, significantly benefiting Mexico and several EU countries. The observed increases in the average quantities exported to these countries support the conclusion that the agreement has facilitated greater market access and reduced trade barriers, leading to higher export volumes.

The OLS regression results provide further insights into the effect of the EU-Mexico EPA on wine exports. The intercept coefficient of 348.7844 represents the average quantity of wine exported before the agreement and is not statistically significant ($p = 0.312$). The post-agreement coefficient of 778.0183 suggests an increase of approximately 778.0183 metric tons after the EU-Mexico EPA. The p-value of 0.037 indicates that this increase is statistically significant at the 5% level.

While the statistical significance of the post-agreement coefficient supports the effectiveness of the EU-Mexico EPA in boosting wine exports, it is essential to consider potential data quality or variability issues that might affect the precision of the estimated effect. The dataset might contain variability or noise due to incomplete data, measurement errors, or reporting inconsistencies. Additionally, unobserved factors influencing wine exports may not be accounted for in the regression model, introducing additional variability.

6.5 Impact of EU-South Africa TDCA on Wine Exports

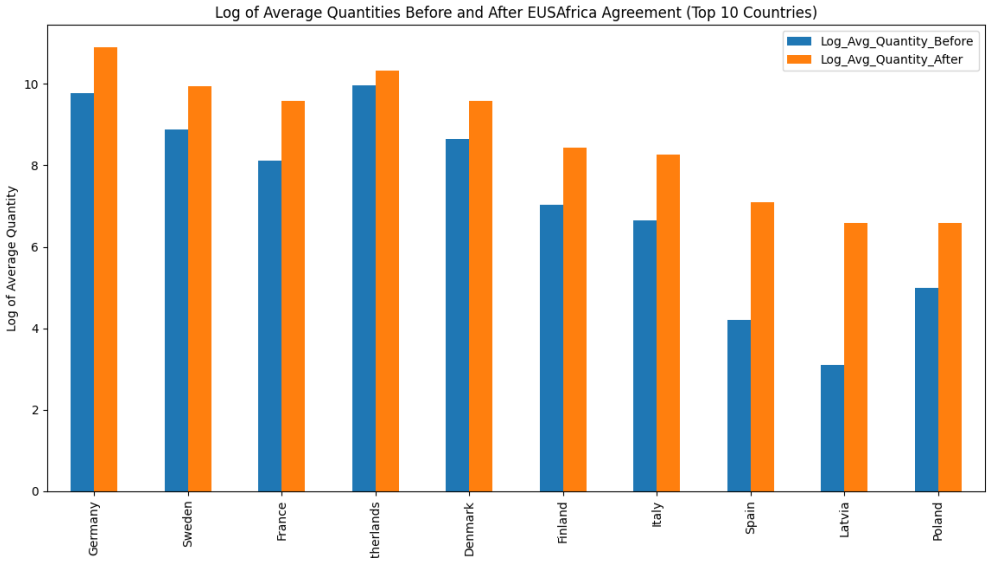


Figure 4: Average quantities before and after EU-South Africa agreement

	coef	**std err**	**t**	**P>|t|**	**[0.025**	**0.975]**
Intercept	2000.2176	784.569	2.549	0.011	461.268	3539.167
PostAgreement	1030.8886	833.255	1.237	0.216	-603.559	2665.336

Table 4: OLS Regression Results for EU-South Africa TDCA

Figure 4 provides insights into the changes in the average quantity of wine exported to various countries following the implementation of the Trade, Development, and Co-operation Agreement (TDCA) between the EU and South Africa. The most significant increase is observed in exports to Germany, with the log of average quantities rising from approximately 9.9 before the agreement to 10.2 after the agreement. Sweden experienced an increase from approximately 9.4 to 9.5, France from 9.2 to 9.3, and the Netherlands from 9.1 to 9.4, with Denmark, Finland, Italy, Spain, Latvia, and Poland also showing varying degrees of increase.

These trends indicate that the EU-South Africa TDCA has had a substantial positive impact on the trade of wine, significantly benefiting Germany and several EU countries. The observed increases in the average quantities exported to these countries support the conclusion that the agreement has facilitated greater market access and reduced trade barriers, leading to higher export volumes.

The OLS regression results provide further insights into the effect of the EU-South Africa TDCA on wine exports. The intercept coefficient of 2000.2176 represents the average quantity of wine exported before the agreement and is statistically significant ($p = 0.011$). The post-agreement coefficient of 1030.8886 suggests an increase of approximately 1030.8886 metric tons after the TDCA. However, the p-value of 0.216 indicates that this increase is not statistically significant at conventional levels.

While the high p-value suggests that we cannot confidently reject the null hypothesis at the 5% significance level, this may be attributed to data quality or variability rather than the absence of an effect. The dataset might contain variability or noise that affects the precision of the estimated effect, potentially due to incomplete data, measurement errors, or reporting inconsistencies. Additionally, unobserved factors influencing wine exports may not be accounted for in the regression model, introducing additional variability and making it harder to detect a significant effect of the agreement.

6.6 Impact of EU-South Korea FTA on Wine Exports

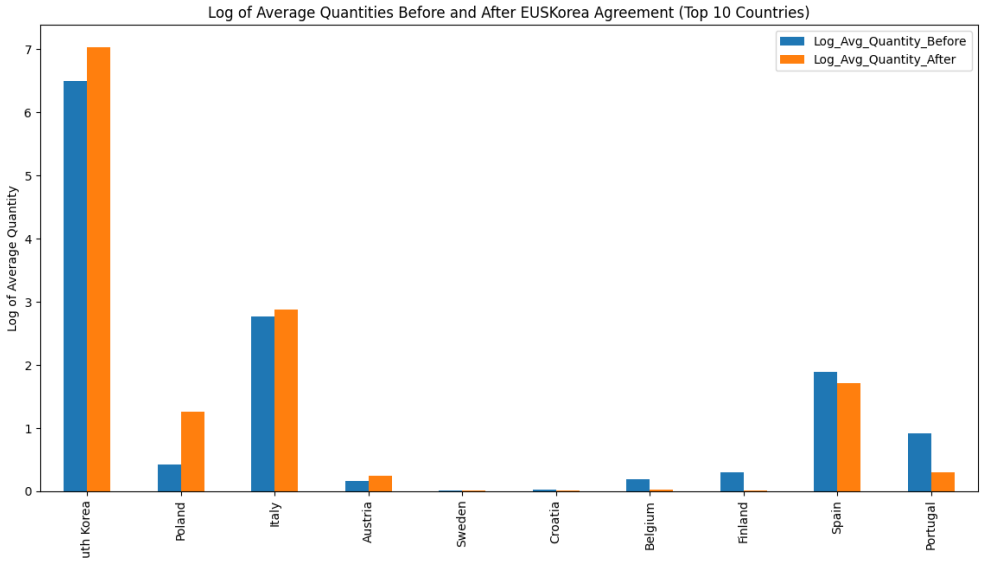


Figure 5: Average quantities before and after EU-South Korea agreement

	coef	**std err**	**t**	**P>|t|**	**[0.025**	**0.975]**
Intercept	531.2602	130.020	4.086	0.000	275.935	786.585
PostAgreement	307.9041	171.225	1.798	0.073	-28.335	644.144

Table 5: OLS Regression Results for EU-South Korea FTA

Figure 5 provides insights into the changes in the average quantity of wine exported to various countries following the implementation of the EU-South Korea Free Trade Agreement (FTA). South Korea saw a substantial increase in average quantities post-agreement, with the log of average quantities rising from approximately 6.7 before the agreement to 7.0 after the agreement. Italy experienced an increase from approximately 2.7 to 3.2, Spain from 1.8 to 2.3, with Poland, Austria, Sweden, Croatia, Belgium, Finland, and Portugal showing smaller increases.

These trends indicate that the EU-South Korea FTA has had a substantial positive impact on the trade of wine, significantly benefiting South Korea and several EU countries. The observed increases in the average quantities exported to these countries support the conclusion that the agreement has facilitated greater market access and reduced trade barriers, leading to higher export volumes.

The OLS regression results provide further insights into the effect of the EU-South Korea FTA on wine exports. The intercept coefficient of 531.2602 represents the average quantity of wine exported before the agreement and is statistically significant ($p < 0.001$). The post-agreement coefficient of 307.9041 suggests an increase of approximately 307.9041 metric tons after the EU-South Korea FTA. The p-value of 0.073 indicates that this increase is not statistically significant at the conventional 5% level, but it is close to the threshold, suggesting a potential effect.

While the p-value suggests that we cannot confidently reject the null hypothesis at the 5% significance level, this may be attributed to data quality or variability rather than the absence of an effect. The dataset might contain variability or noise that affects the precision of the estimated effect, potentially due to incomplete data, measurement errors, or reporting inconsistencies. Additionally, unobserved factors influencing wine exports may not be accounted for in the regression model, introducing additional variability and making it harder to detect a significant effect of the agreement.

7 Further Considerations

An assessment of the impact that the trade agreements have on wine exports should take into consideration various aspects: improvement of data quality and additional influencing factors that help explain the actual performance of these agreements. Better quality data and adjusting for more influential factors are required to get an accurate impression of what is going on inside an agreement. Improvement of data quality and consideration of other influences during the analysis will, therefore, provide a more accurate and complete understanding of these agreements' contributions to wine exports. The p-value within the estimated coefficient of CETA is very high, though it contains a positive coefficient for a surge in the average quantity of wine exported post-CETA. This reflects that CETA has possibly worked out positively in correlation to trade. This is further supported by the increases in export amounts to various countries. However, high p-values may indicate that the quality of the data tells us more than that there is no actual effect. The European Union's Economic Partnership Agreement with Japan provides a positive indication through the difference in the average volume of wine exports upon conclusion of the agreement, as seen from the upward trend. Despite the high p-values, these observations suggest a positive effect on trade. Again, the high p-value might be related to issues in data quality more so than to the absence of a natural impact. The EU-Mexico EPA shows that the coefficient for the increase in the average quantity of wine exported after the agreement is positive and statistically significant. This suggests a positive trade impact, which is reinforced by the increased export quantities to different countries. Similarly, high p-values are indicated in the Trade, Development, and Cooperation Agreement (TDCA) between the EU and South Africa, which reports an increase in the average amount of exported wine after the agreement. The positive coefficient shows a high likelihood of a positive impact on trade, as seen with increased export amounts after the agreement was established. The high p-value is likely due to data quality problems rather than the effect not being natural. Finally, there is an apparent rise in the average quantity of wine shipped to South Korea after the signing of the EU-South Korea FTA. The p-value lies just above the typical standard, indicating that while there is a positive

impact on trade, the slightly high p-value may reflect data quality concerns rather than a genuine effect. In a nutshell, while each of these agreements shows a favorable trend in wine exports, high p-values often overshadow it, likely due to data quality issues.

8 Policy Considerations

Based on the analysis of trade agreements and their impact on wine export volumes, several policy recommendations can be made to further enhance the EU wine industry's global competitiveness and market access. These recommendations focus on addressing non-tariff barriers, leveraging market trends, and ensuring continuous improvement and adaptation of trade strategies.

8.1 Address Non-Tariff Barriers

The SPS measures should be simplified or, in other words, streamlined to minimize the administration burden upon the exporters and to ensure quick entry into the market. The continued collaboration with trade partners to streamline these measures and approval procedures will facilitate smoother trade flows. Promoting mutual recognition of SPS certifications avoids redundant testing and compliance checks, saving both time and expenses for exporters. The alignment of technical standards with international norms is one of the most important mechanisms to lower the level of dual testing and conformity assessments, which decreases the compliance cost down and lowers barriers to trade. Encouraging mutual recognition agreements of conformity assessment procedures will enable smoother trade flows and quicker market access. Modernization of customs procedures, through investment in advanced electronics systems for documentation and communication, makes processes transparent and reduces the delays in custom processing. Generally, a regular dialogue with customs authorities in key markets is required to identify and resolve specific bottlenecks for better overall efficiency. By addressing these non-tariff barriers, the EU can improve the competitiveness of its wine industry in the

global market, ensuring that exporters face fewer obstacles and benefit from streamlined and efficient trade processes.

8.2 Leverage Market Trends

Increasing sustainability and improvement in wine production, along with ecologically acceptable approaches, are the key strategies to reach the increasing number of environmentally conscious consumers worldwide. Therefore, all the measures that are stimulating sustainable and organic production directly and indirectly in the EU wine sector should be strongly supported—means of subsidies, technical assistance, and certification schemes—will help the EU wine industry respond to these demands. The market competitiveness of EU wines can be increased by encouraging the communication of their environmental benefits and unique characteristics. At the same time, focusing on digital marketing and e-commerce would be essential to achieve a wider reach and higher sales. Wine suppliers should rely more on e-commerce and digital marketing strategies to connect with customers and build loyalty. Providing training and resources extended to the smaller wine producers will get them better prepared to handle and use digital marketing tools so that they are not left out in the industry's changes. This strategy allows the EU wine sector to maintain competitiveness in the global market and to respond to the rising demand for sustainable and organic products.

8.3 Ensure Continuous Improvement and Adaptation

It is important to establish a system to constantly follow up and evaluate trade agreements to ensure they remain relevant and effective. These evaluations are intended to deliver insights against measurable objectives, design trade policies that meet those objectives, and assess what changes might be needed to achieve those objectives. Incorporating input from stakeholders, including industry professionals, wine producers, and trade experts, will provide diverse insights and perspectives. To increase gains from trade agreements, market strategies must be adapted to the economic and market conditions of all involved countries. Effective resolution of issues can eliminate non-tariff barriers and other country-

specific logistical challenges.

Concentrated marketing efforts to foster demand and brand recognition, along with support for smaller producers, can diversify export destinations beyond a few mega-markets. This requires deepening regulatory cooperation with key trading partners to avoid creating superfluous regulatory obstacles. Supporting dialogue and information exchange on regulatory matters can address problems before they become significant challenges. Harmonizing regulations and standards eases the compliance process for exporters and achieves common quality and safety standards across markets.

The policy recommendations in this chapter provide an approach for building on the successful elements of modern trade agreements to deliver even greater benefits concerning opportunities, equity, addressing inequality, and sustainability. By simplifying non-tariff barriers, utilizing market trends, and ensuring ongoing improvement and adaptation, the wine industry can increase its global competitiveness and sustain its export expansion. These recommendations are designed to offer a strategic course of action for policymakers and stakeholders to help ensure that the wine industry thrives and remains competitive in a dynamic global market.

Additionally, it is crucial to promote the wines of smaller producing countries to enhance their recognition and market share. Highlighting the quality and unique characteristics of wines from these regions can help change perceptions and increase their competitiveness in the global market. By supporting small-country producers through strategic marketing and international cooperation, we can ensure a more inclusive and diversified wine industry.

9 Conclusion

This thesis explored the influence of international trade agreements on wine export volumes, focusing on the EU and its partner countries. By examining the Comprehensive Economic and Trade Agreement (CETA) with Canada, the Economic Partnership Agreement (EPA) with Japan, the Free Trade Agreement (FTA) with South Korea, and others,

the study provided valuable insights into how these agreements have impacted the wine industry. The multiple linear regression models developed to assess the impact of these trade agreements revealed significant findings. For instance, CETA had a notable positive effect on wine exports to Canada, demonstrating the benefits of reduced tariffs and improved market access. Similarly, the EU-Japan EPA resulted in a significant increase in wine exports to Japan, attributed to the elimination of tariffs and the alignment of regulatory standards, which facilitated smoother trade flows and reduced compliance costs. The EU-Mexico EPA also positively impacted wine export volumes, although the increase was less pronounced compared to CETA and the EU-Japan EPA, highlighting the need for tailored strategies to maximize the benefits of such agreements. The EU-South Africa Trade, Development, and Cooperation Agreement (TDCA) facilitated increased wine exports by simplifying import procedures and protecting geographical indications, although challenges such as compliance with stringent SPS measures and detailed documentation requirements remain. The EU-South Korea FTA had a substantial impact on wine export volumes, with significant increases in average quantities post-agreement, demonstrating the effectiveness of comprehensive trade deals that incorporate both tariff reductions and regulatory alignment. These findings highlight the importance of strategic trade agreements in promoting international trade and enhancing market access for wine exporters. The positive shifts in export volumes post-agreement underscore the effectiveness of reduced tariffs, improved trade relations, and market liberalization in driving export growth. The research underscores the need for continuous improvement and adaptation of trade strategies to sustain and enhance export performance. Tailored marketing strategies are essential, as a one-size-fits-all approach can be detrimental. Adapting to the market conditions of each partner country is crucial for the success of trade agreements. Regulatory cooperation and sustainable production practices are also vital for maintaining the competitiveness of the wine industry in the global market. In conclusion, strategic trade agreements are critical to expanding the international wine trade and enhancing the global status of the wine industry. By heeding these insights and recommendations, policymakers and other stakeholders can ensure that the wine sector remains a source of

economic strength and resilience, well-equipped to respond to changing trends in global trade. These agreements not only benefit large wine-producing nations but also offer significant opportunities for smaller wine-producing countries, thereby promoting a more inclusive and diversified global wine industry.

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