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CROATIAN WINE PRODUCTIONAFTER THE JOINING EU: COMPARISON OF WINE PRODUCTION AND TRADE BETWEEN EU AND US

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Abstract. *This paper analyzes the Croatian wine sector through the records of wine production, exports and imports, and compare it with EU and US wine market. Data for this study covers the period of 29 years (from 1992 to 2021). They were collected from the following public sources: FAO, OIV, and PAAFARD. The main characteristics of the Croatian wine industry are small vineyards, a small share in European wine production, and a negative export-import balance. The production of wine in Croatia makes up only a small part of the total production in the EU. Croatian wine production is uncompetitive on the global stage and hardly recognized on the World's wine maps. After the transition and joining the EU, wine production and export out of Croatia showed a negative trend; the area under vineyards is decreasing, and the quantity of produced grapes was decreasing. As a smaller producer of wine, Croatia was not negatively impacted by the liberalization which the Common Market Organization reform in 2008 ruled; since the unfavorable structure on the farms and lack of competitiveness. Statistical analysis from the collected data shows that EU wine making is stagnating globally, and New World countries are increasing their production and consumption. A market for high-quality wine and with protected geographical origin could be a good niche for the successful placement of Croatian wines in EU and USA markets.*

Keywords*: Croatian wine production, export, import, global wine market*

INTRODUCTION

Republic of Croatia has a very long tradition of growing grapes and making wine that goes back to antiquity. Since the majority of state territory has a favorable geographic position for grape production, viticulture and viniculture have strategic importance for the economy of Croatia (ALPEZA et al., 2014). Croatian wine in general, has the technological potential to be exported to markets with common wine standards (EU wine market standard) (PRIBETIĆ & PERŠURIĆ, 2006). However, some difficulties still exist, like limited quantities, production costs, continuous loss of domestic market from cheap wine imports, and competition which generally offers wine at all price ranges (particularly from "Old World Producers" like France, Italy and Spain and „New World Producers" like Australia, Chile, and Argentina). According to ČOP et al., (2019) Croatian wine production falls behind wine-leading countries (France and Spain) regarding income and profit (Gross Farm income, Farm Net Value Added, and Farm Net Income).

After the economic transition and homeland war for independence during the nineties, Croatia become in 2013, a Member Country of the European Union. This membership allowed and opened a large EU and world market and gave a lot of opportunities and challenges for Croatian wine growers. Since then, Croatian wine legislation is based on the EU wine regulation. The Croatian Wine Act, including related ordinances, transposes the relevant EU regulations of the Common Market Order (CMO) of wine. Croatia's agricultural sector is governed by The Common Agricultural Policy (CAP) and employs the same tariffs and border measures as all other EU Member States.

Moreover, in the Croatian Act on Agriculture, the wine sector is specified as one of the strategic sectors in Croatia (BEDEK and NJAVRO 2016). Although Croatian winemakers formed in 2011 a National Winemakers Association with the main goal to promote Croatian wines and create a brand of Croatian wines in Europe and abroad. They still need to put more effort to penetrate international markets. As JAKŠIĆ et al. (2016) highlighted, this business model is highly dependable on targeted oenological expertise or support, market research, pricing, and institutional support. In this sense, market penetration and market development for Croatian wine producers will depend on product pricing and the results of past and further joint promotional strategies.

European Common Market Organization (CMO) was established in 1960 while planting rights were introduced in 1976 and it limits the area under wine in the EU. Planting rights have assured a model of production which has allowed EU farmers and their cooperatives to add value to their production and to keep this added value in the farming sector. However, in 2007 European Union started with the policy liberalization and reform of the CMO for wine which included the abolishment of the planting rights system by 2018. New wine reform was adopted in the EU in 2008, and was market-oriented, taking into account consumers' concerns, farm income, rural development, and the environment. Since the EU legal framework in the wine sector is regulated only by regulations, it contains four basic and few implementing regulations (Commission Regulation No. 55572008, No.436/2009, No 606/2009, No 607/2009, Council Regulation 1493/1999, 479/2008, 491/2009). However, opponents of the liberalization after intensive lobbying (COPA-COGECA, 2012), succeed in June 2013, to reverse the decision of liberalization after discussions between the Council, the European Parliament, and the European Commission.

Smaller wine producers in the EU like Croatia, Hungary, Slovakia, Slovenia, and Romania did not benefit from regulation changes to the Common Agricultural Policy (CAP) for wine in 2008. As JAKŠIĆ et al. (2016) explained, Croatia signed the Stabilization and Association Agreement (SAA) with the EU in 2001 that came into force in 2005. This Agreement includes the gradual abolition of customs duties in mutual trade, therefore, postponing total exposure of the Croatian economy to highly competitive products from the EU.

To preserve, promote and sustain wine production in Croatia, the Ministry of Agriculture (MoA) among others measured the initiated Operational Program (OP 2004) of Rising Perennial Plantations (MoA, 2004a). The program had a goal to encourage farmers (winemakers and fruit growers) to invest in nurseries, vineyards, and orchard rejuvenation and planting. The goals for the wine sector in particular were to raise productivity, quality, and competitiveness in general.

Since the wine industry is constantly challenged with the risks from the weather (climate change), market (price risk), institutions (changes in regulatory framework), changes in supply networks, consumer preferences, and financial markets (BEDEK and NJAVRO, 2015), the objective of the paper is to comprehend the current situation in the Croatian wine sector and to investigate if the wine sector in Croatian agriculture can compete on international markets, particularly EU and US.

MATERIAL AND METHODS

Data for this study covers the period of 29 years (from 1992 to 2021). They were collected from the following public sources:

- FAO (http://www.fao.org/faostat/),
- OIV (http://www.oiv.int/en/technical-standards-and-documents/statistical-analysis/statistical-data)
- PAAFRD (https://www.apprrr.hr/registri/)

A dataset for the Croatian, EU, USA and world production and trade of wine has been stored in MS Excel (.xlsx) file, and includes:

i) Grape production: area harvested (ha); yield (kg/ha); production quantity (tones);
ii) Wine production (tones);
iii) Wine export: export quantity (tones); export values (1000 US $);
iv) Wine import: import quantity (tones); import values (1000 US $).

Basic descriptive statistic (mean, median, standard deviation and coefficient of variation) was used to compare grape production, wine production, export and import for Croatia, EU, and USA. Correlation analysis was performed to test ratios for export quantity and export values, and import quantity and import values. Statistical analyses were carried out using SPSS for Windows 21,0. Graphics were done in MS Excel for Windows 2019.

RESULTS AND DISCUSSIONS

Croatian winemaking regions, grape, and wine production

Croatia has been divided into four major winemaking regions (Figure 1). Each region is characterized by different geographical, geological, agricultural, and economic traits. Grapevine areas in Croatia with 19.022 thousand ha (according to https://www.apprrr.hr/registri/) represent about 1,5% of its total agricultural area.

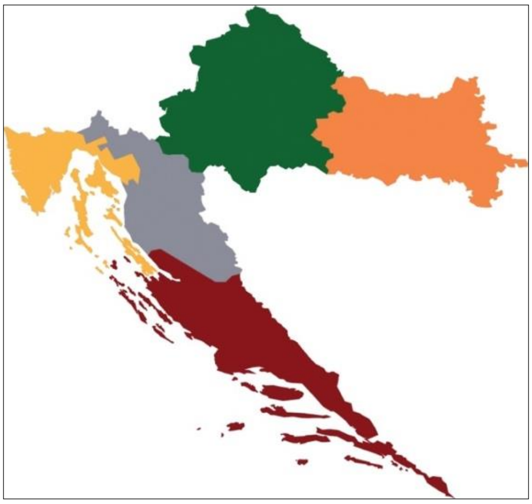

Figure 1. Croatia wine map (Source:https://www.total-croatia-wine.com/wine-regions/1186-four-croatian-wine-regions)

According to HERJAVEC (2019), eastern continental part (orange) of the country is characterized by mild, continental climate, with rainfall equally distributed throughout the year. Grapes in this region have been grown on sloped hills with an altitude between 100 and 250 meters. In the Croatian Highlands (green) in the northwestern part of the country, vineyards are mostly located on the lower parts of the southward-facing slopes of hills and mountains at an altitude of 100 to 400 meters. Continental climate is here influenced by cold air from the Alps to the North and hot air from the Mediterranean to the South. On the north-western part of the Croatian Adriatic Coastline is located Istria and Kvarner Bay region (yellow). This region experiences a mild sub-Mediterranean climate with mild and rainy autumns and winters and arid summers. The fourth region Dalmatia (brown) with very diverse soils and a mild-Mediterranean climate, characterized by hotter summers and mild winters.

Data from the Croatian wine sector are shown in Table 1. Presented data indicated that small viticulture and wine production on family farms with less than 1 ha of vineyards, dominate in all winemaking regions of Croatia. Family farms have the highest share in vineyard areas, but they lack economy of size, management and marketing knowledge, bargaining power against powerful retail chains, and access to the capital (BEDEK and NJAVRO, 2015).

Table 1

Grape and wine production in Croatia Source: https://www.apprrr.hr/registri/ (Podatci iz Vinogradarskog registra za 2021. godinu; data from wine register for 2021)

	Winemaking regions				Total
	Istria and Kvarner Bay	Dalmatia	Eastern continental part	Croatian Highlands	
Vineyard area (ha)	3159,5	6138,7	6022,2	3701,8	19.022,09
Number of vineyard's:					
≤ 1 ha	2726	11039	2469	18791	35025
1-10 ha	406	1103	690	372	2571
10 - 50 ha	38	31	36	16	121
50 – 100 ha	1	4	6	1	12
≥ 100 ha	1	2	9	1	13
Producers					
Family farms	2925	8328	1630	3496	16379
Wine industry	113	178	61	60	412
Wine production (t)	145556,7	14378,9	32330,1	11992,3	73257,8

According to the data from the Paying Agency for Agriculture, Fisheries and Rural Development (PAAFRD – "Vezani documenti – Podatci iz Vinogradskog registra za 2021. godinu (data from wine register for 2021)": https://www.apprrr.hr/registri/) there is 19.022,09 ha of vineyards. However, the average vineyard area is below 1 ha, but 146 (25,6 %) winemakers have a vineyard area above 10 ha, and among them, only 13 (4,9 %) produce grapes on more than 100 ha.

Quality (64%) and top quality (10%) wines have a larger share in the Croatian market

(Figure 2). They are wines with the geographical indication (GI) which represents an intellectual property right that identifies particular goods originating in a certain territory or a region where a given quality, reputation, or characteristics is favorable to its geographical origin (ADDOR et al., 2003). Moreover, ČAČIĆ et al., (2011) investigated the preference for wine with GI and found a high correlation between wines with GI and higher socioeconomic status and higher culture of wine consumption.

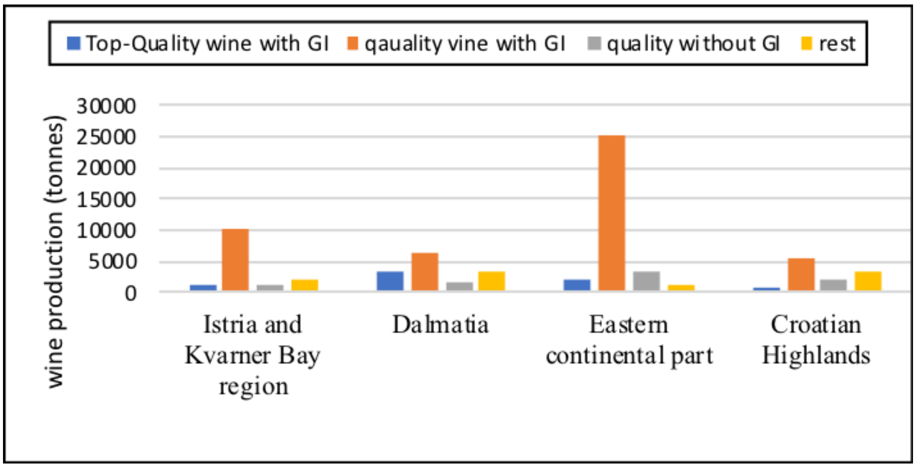

Figure 2. Category of wine production per winemaking region in Croatia

However, modern work technologies, and produced wine sold in bottles are characteristic of the wine industry (≥ 50 ha) or very large family farms (mostly 10 – 50 ha). They, as explained by OPLANIĆ et al., (2010) could achieve several times higher incomes, and have much better productivity and cost-effectiveness.

Comparison of the Wine sector in Croatia with the EU and US Wine Market

Global wine market has witnessed significant changes during the last 15 – 20 years and has boosted competition between Old and New World wine producers (BERNETTI et al., 2006). Large and growing wine production and consumption countries increased their market share. They, the so-called "New World vine producers, Argentina, Chile, Australia, New Zealand, USA, and South Africa changed the international market structure (OIV Statistical Report on World Vitiviniculture, http://www.oiv.int/public/medias/6782/oiv-2019-statistical-report-on-world-vitiviniculture.pdf).

The main characteristics of the wine sector in Croatia, the EU, and US are presented in Table 2. Average grape yield in Croatian vineyards is lower compared to the yield obtained in the EU or US (Figure 3).

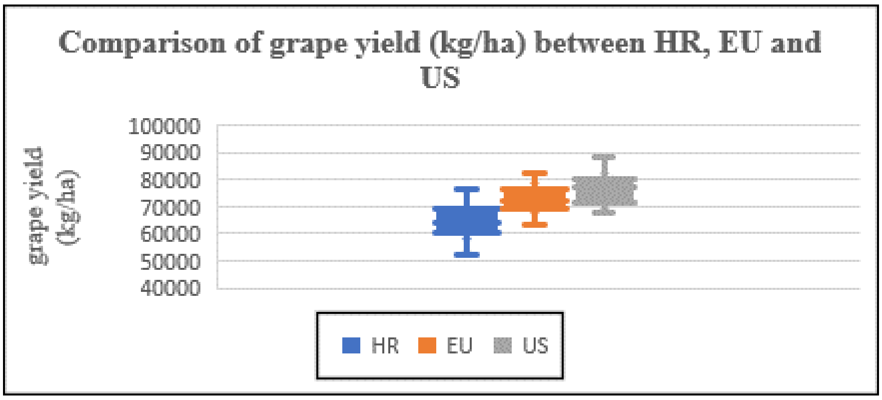

Figure 3. Grape yield (data from 1992 to 2021) in Croatia and comparison with yield in EU and US

Table 2.

Main characteristics of Wine sector in Croatia, EU and US

		Mean	Median	Standard Deviation	Coefficient of variation
Croatia	Area harvest (ha)	36.645,7	31.610,0	12.431,9	33,92
	Yield (kg/ha)	64.104,0	64.200,0	6.510,5	10,16
	Production quantity (t)	240.300,0	188.149,5	101.161,1	42,09
	Wine production (t)	137.486,8	178.492,0	74979,6	54,5
	Import quantity (t)	13.376,8	13.498,0	8.185,9	61,2
	Import value (USD)	15.011,8	15.227,5	11.292,6	75,2
	Export quantity (t)	7.853,9	5.504,5	7.047,9	89,7
	Export value (USD)	12.672,7	12.451,0	3.677,9	29,1
EU	Area harvest (ha)	3.660.867,2	3.735.642,0	364.082,1	0,99
	Yield (kg/ha)	72.751,0	72.089,5	5.113,2	7,0
	Production quantity (t)	26.520.937,4	26.036.496,0	2.122.129,6	8,0
	Wine production (t)	17.322.506,9	17.275.519,0	1.641.775,1	9,5
	Import quantity (t)	972.883,9	1.240.115,0	457.515,7	47,0
	Import value (USD)	2.281.757,2	2.945.992,5	1.137.488,2	49,9
	Export quantity (t)	1.557.262,3	1.414.360,5	509.263,8	32,7
	Export value (USD)	6.741.852,0	5.730.507,5	3.538.890,2	52,5
US	Area harvest (ha)	372.235,5	379.131,5	35.245,1	9,5
	Yield (kg/ha)	76.990,0	77.293,1	5.509,2	7,2
	Production quantity (t)	6.311.462,3	6.610.749,0	746.824,1	11.8
	Wine production (t)	2.418.091,3	2.466.000,0	456.444,4	18,9
	Import quantity (t)	698.761,8	677.198,0	326.244,0	46,7
	Import value (USD)	3.527.786,2	3.761.172,5	1.688.134,3	47,9
	Export quantity (t)	311.318,3	345.638,5	110.733,8	35,6
	Export value (USD)	807.499,9	682.289,5	480.780,4	59,5

The area under vineyards has a decreasing trend, as well as the quantity of produced grapes. ČOP et al. (2019) mentioned that its share of Croatia in the EU total is only 0,8% in vineyards and 0,4% in wine production. Contrary to production, import is significant and constantly growing (Table 3, Figure 4), mainly from Macedonia, Bosna and Herzegovina, Kosovo, and Slovenia (MISIR, 2014). Wine export goes mainly to the Czech Republic, Bosnia and Herzegovina, and Germany (MISIR, 2014), and over the investigated period does not show any trend (Figure 5).

EU and US have a higher average grape yield per ha, and more stable production (coefficient of variation 8,0 and 11,2 for EU and US respectively). However, wine production in the EU has a decreasing trend, while US wine production increased (Figure 5). EU still exports more wine than imports, while import quantity in the US has doubled compared to export (Table 2)

Table 3.

Results of Pearson correlation between quantity (ha) and value (USD) for export and import of wine for Croatia, EU, and US

Country:	export	import
Croatia	0,348 NS	0,813 **
EU	0,974 **	0,977 **
US	0,833 **	0,980 **

NS = not significant; * α<0,05; ** α<0,01

Globalization of the wine market has been affected by competition (CAMPBELL and GUIBERT, 2006), new products and trends, as well as changes in consumer behavior. Wine consumption is mainly concentrated in Europe. Out of global wine production, 68.9 per cent is sold mainly in France, Italy and Spain as the three largest markets. In North America, where 10.6 per cent of global production is sold, USA constitutes the largest non-European market for wine (2,000 tons per annum), slightly ahead of Argentina (BERNETTI et al., 2006).

CONCLUSIONS

From the presented results, several conclusions can be made: The main characteristics of the Croatian wine industry are small vineyards, a small share in European wine production, and a negative export-import balance. The production of wine in Croatia makes up only a small part of the total production in the EU. Croatian wine production is uncompetitive on the global stage and hardly recognized on the World's wine maps. After the transition and joining the EU, wine production and export out of Croatia showed a negative trend; the area under vineyards is decreasing, and the quantity of produced grapes was decreasing. As a smaller producer of wine, Croatia was not negatively impacted by the liberalization which the Common Market Organization reform in 2008 ruled; since the unfavorable structure on the farms and lack of competitiveness. A market for high-quality wine and with protected geographical origin could be a good niche for the successful placement of Croatian wines in EU and USA markets.

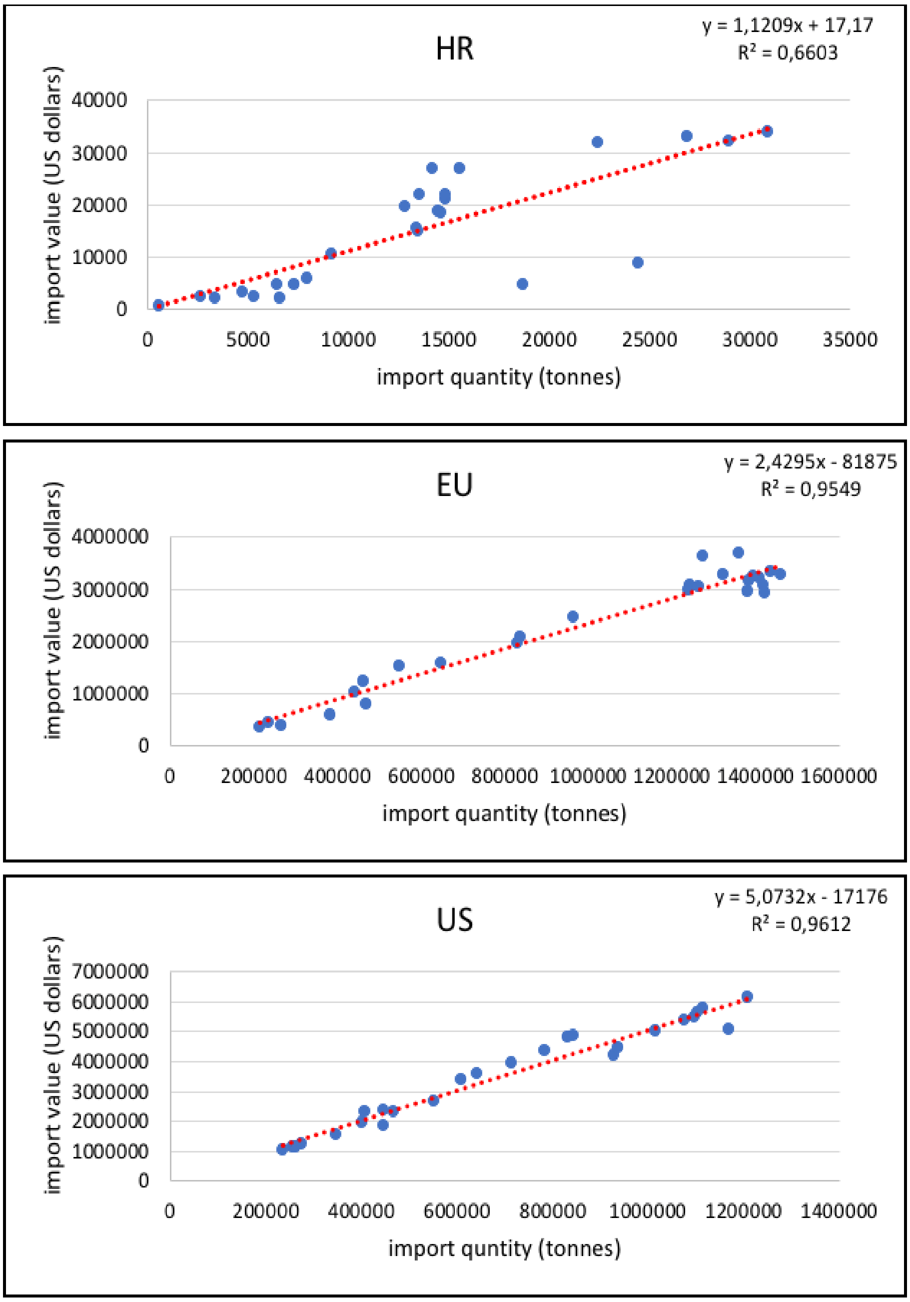

Figure 4. Relationship between wine import quantity (tonnes) and import values (USD) for Croatia, EU and US

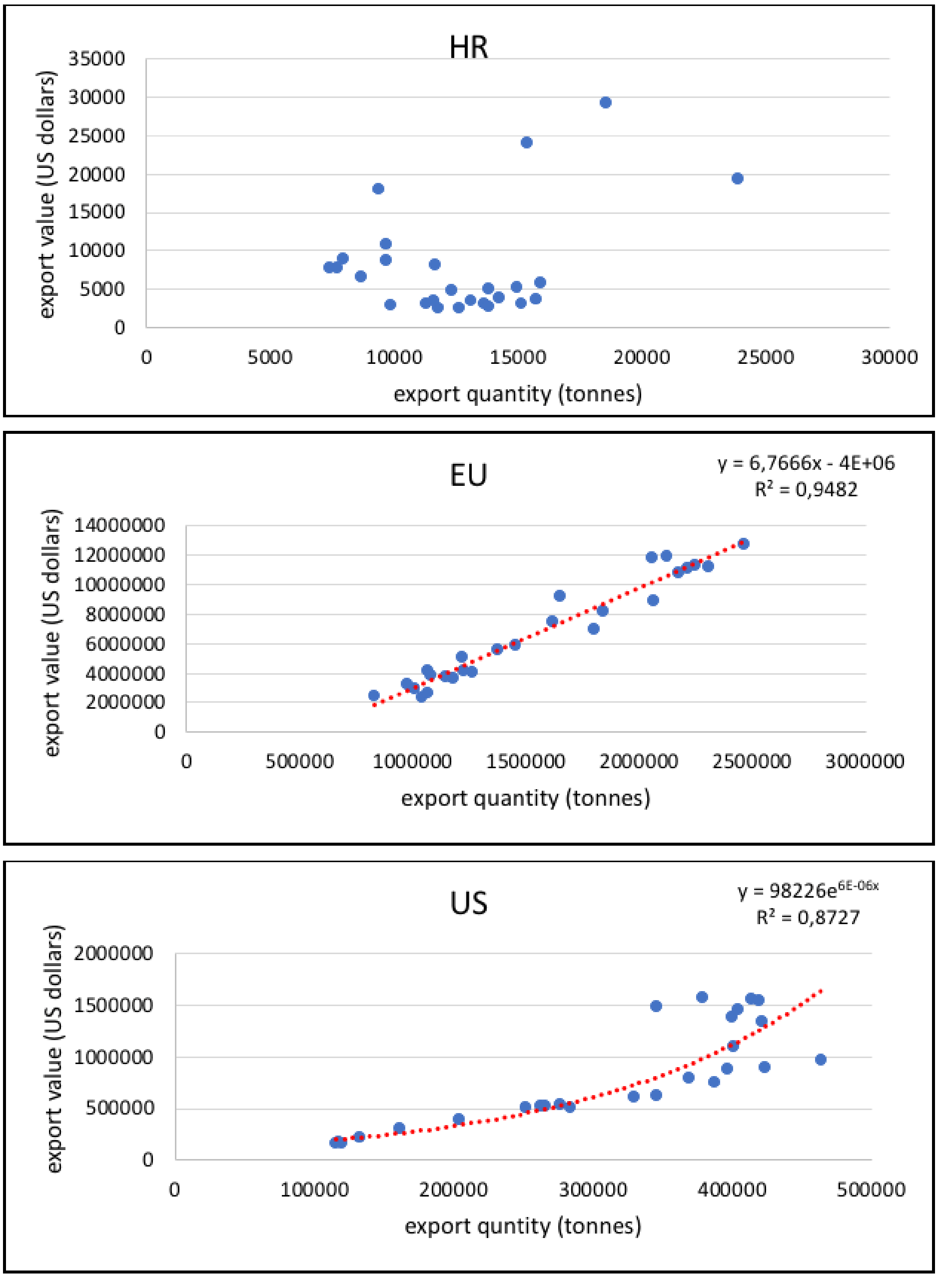

Figure 5. Relationship between wine export quantity (tonnes) and export values (USD) Croatia, EU and US

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