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# **The competitiveness of the Portuguese wine sector and a case study of exports and activity diversification in the Vinhos Verdes region**

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## **The competitiveness of the Portuguese wine sector and a case study of exports and activity diversification in the Vinhos Verdes region**

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**Abstract.** *The world wine market is currently characterised by two principal wine suppliers: the European and the New World. Countries such as France, Italy, Spain and Portugal have witnessed a tremendous growth in the New World wine-makers (Australia, Chile, South Africa, etc.). As competition continues to intensify, wineries are searching for new channels to increase revenues and many vintners chose to develop other activities. Portugal is one of the European countries that present several natural and technical constraints which might be now resulting in modest performance regarding its position in the global wine market, competitiveness and dynamism required to overcome difficulties. The main objective of the study is to provide information to vintners concerning the current situation of the wine industry and possibly to present “holes” in the market which overall might be explored as new business opportunities. To that end, the research will attempt to measure the competitiveness of the Portuguese wine industry and its behaviour during a time period considered. This will be based on indices such as the trade intensity index, revealed comparative advantage, auto-sufficiency and market share ratios. This paper will also try to analyse empirically the specific case of exports and activity diversification in the Vinhos Verdes region.*

**Keywords:** wine industry, competitiveness indices, exports, activity diversification, Vinhos Verdes wine.

### **1. Introduction**

The driving issue for this research is to analyse the Portuguese wine industry at the international level and, specifically, the case of the Vinhos Verdes wine industry, namely, the characterisation of the agents responsible for production and trade, differences among them and possible effects of activities on the farm business as a whole. Therefore, this study is a valuable extension on export literature and for the single industry of Vinhos Verdes.

As long as there is more than one sector/country exporting (wine) numerous researchers/economists will attempt to measure their position in the market. Market shares are a common example of these measures

considered to be insufficient if utilised isolated though (GEE 2004). Several other indicators are used to calculate competitiveness and researchers adapt them to what better fits their objectives. Costa (1999) used trade intensity, regional orientation and revealed comparative advantage indices to analyse whether the incremental Brazilian exports of poultry in the Mercosul block were based on the Brazilian comparative advantages. Noéme (2001) utilised the Balassa coefficient and the specialisation indicator of Lafay to analyse Portuguese competitiveness in the food and beverage industry.

To examine the wine industry’s current performance in the global market, it is important to exploit information about the wineries’ export experiences, intentions, opinions and assistance needs (Silverman, Sengupta, and Castaldi, 2001).

Many opportunities are given to farmers to diversify their activities; to be competitive, farmers have to change and widen their role from agricultural to rural entrepreneur (Klair, Boggia, and Richardson 1998). Shumacher and Boland (2004) describe several potential costs and benefits of diversification.

Wine tourism is a recognised area of special-interest tourism throughout the world with benefits in job and secondary activity creation (O’Neill and Palmer 2004). As a result, the tasting room is receiving more serious attention as a source of revenue generation (Quackenbush 2001). The activities “portfolio” may include guided visits to the winery, wine events, farm restaurant, rural tourism or oeno- tourism<sup>1</sup>.

Therefore, the main objective of the study is to analyse the sector in order to provide information to the vintners about market trends, advantages and disadvantages of the industry – national and international – and possibly to present “holes” in the market which can be explored as new business opportunities.

## 2. World Wine Industry

Within few years Portugal lost four positions in the ranking (from 3.6% share and 6<sup>th</sup> in the world production in 1996 to 2.5% and 10<sup>th</sup> in 2002). In contrast, Australia climbed four positions (from 10<sup>th</sup> to 6<sup>th</sup>) with remarkable growth rates in the last few years (35.1% growth from 2001 to 2002) but also South Africa, China, Chile with very good perspectives for the near future.

**Table 1.** Concentration Indices of Production

	1996	2002
<b>C4<sup>2</sup></b>	61.2	58.1

<sup>1</sup> Tourism related with the wine industry.

<sup>2</sup>

$$\text{Formula utilised for } C_4 = \sum_i^4 S_i$$

Where,  $C_4$  is the combined share of the top four firms in a market and  $S_i$  is the firm’s market share on production, with firms ordered by size of market share.

f

Source: Data collected from OIV Statistics (2002) and author's calculations.

Both indices reveal a decrease in the concentration of wine production from the producing countries. There are emerging countries regarding production. The C4 index shows that in 1996 61.2% of the share on the world's wine production was in the hands of just 4 countries (54.3% considering C3 characterised by the countries with higher production – France, Italy and Spain). In 2002 though, this percentage of C4 decreased to 58.1% explained by the strong impact of wines from the New World countries in the global market.

## 2.1. Exporters

Following a similar behaviour of the concentration indices in wine production, those of wine exports prove that the world's wine market is becoming more and more competitive; more countries are entering the export market with new techniques, higher innovation and more awareness of the importance of the consumer as the core of its business rather than production.

**Table 2.** Concentration Indices of Exports

	1996	2002
<b>C4</b>	66.1	63.5
<b>Hirschman- Herfindahl</b>	16.0	14.4

Source: OIV Statistics (2002) and author's calculations.

Regarding the Portuguese case, the recognition of external market opportunities and squandering of synergy creation among economic agents lead ViniPortugal to order a study to the Monitoring Group (2003), whose results reflect urgent intervention in this sector. The main idea that is taken from the study is that the Portuguese “wine cluster” doesn't have an articulated strategy. This may be explained by the firms' dimension of producers; many small firms cannot, individually, create market power in foreign markets. The major part of the wine produced is sold in local markets and only a small percentage is directed to exportation. Moreover, the choice of the exportation market is based on easy sales (targeting Portuguese emigrants) instead of consumers that may give higher returns. Notice that more than 50% of the Portuguese wine exported (liquor and non liquor) goes to France (29%), the UK (9%), Angola (8%) and the Netherlands (8%) and more than 50% of the absolute value created from these exports comes from France, the UK, the Netherlands and the USA (23; 14; 11 and 10% respectively). The situation is more relevant when the liquor influence is subtracted from the analysis.

<sup>3</sup> Formula utilised for  $HHI = \sum_{i=1} S_i^2$

Where,  $S_i$  is the market share on production of the  $i^{th}$  firm. This index is calculated by squaring the market share of each firm competing in a market, and the summing the resulting numbers.

Another aspect worthy of attention is related to the export fragmentation. All the countries that embrace the *New World* show high percentages of concentration markets on export value and volume – Australia focuses 78% of its export value on just three markets, New Zealand 84.6% and USA 70.5%. Unfortunately, Portugal is the country with the highest fragmentation in export markets; excluding liquor wine, the percentage of the three exportation markets in 2002 decreases from 47.9% to 33%. Notice that in 2002 54% of Portuguese wine sales were spread for six countries, all of these with very unlike characteristics and demands. This is a huge problem when wine entities (as ViniPortugal or CVRVV in the case of Vinho Verde wine) have to decide which markets to invest in order to promote Portuguese wine; it is very difficult to create the sufficient promotional impact and, simultaneously, to satisfy Portuguese exporters.

As reported by Professor Porter (2003) in a consumers' study where the main conclusions were that there are no "clear and positive associations in consumers' mind regarding Portuguese wine that can motivate them to search for a bottle with Portuguese origin as an alternative to other options from the New World/Spain". In addition, Portugal, in contrast to what happens in other countries, does not have a great volume and wide "portfolio" of wines to offer. Also there is no regional/national cooperation to sell abroad, or mutual consensus about the crucial markets to be conquered. In consequence, Portuguese wines have no specific section in sales outlets.

## **2.2. Competitiveness Indices**

One of the most commonly applied indicators to measure performance was introduced by Balassa (1965) through the concept of revealed comparative advantage (RCA) adopted in several studies (UN, 2004; Costa, 1999; Guimarães, 1997; Santiso, 2004; Viana and Xavier, 2005; Noéme, 2001).

Costa (1999), based on the work of Yeats (1997), applied three indices – Trade Intensity, Market Orientation and Revealed Comparative Advantage – to determine the intensity and market orientation of the Brazilian poultry trade with the implementation of the Mercosul block, and if it occurred in accordance with the Brazilian comparative advantages of poultry production.

### **2.2.1. Trade Intensity Index**

Trade Intensity is defined by the ratio of exports from a particular country, named  $p$ , to another country  $j$ , and the total exports from country  $p$  over the partner's imports and total world imports. It is used to measure the relative importance of trade between two countries based on its relevance on total trade (Costa, 1999). From here trade tendencies may be traced, and together with the Revealed Comparative Advantage Index, it may be discovered whether these tendencies are based on a country's efficiency.

If the indicator presents a value higher than the unit (higher than one), it reveals strong trade between the two countries. Otherwise, the countries show weak bilateral trade:

$$I_{p,j} = (X_{p,j} \div X_p) \div (M_j \div M_w) \quad (1)$$

Where:

$I_{p,j}$  = Intensity Trade Index between country p and country j,

$X_{p,j}$  = Wine exports from Portugal to country j,

$X_p$  = Wine exports from Portugal to the world,

$M_j$  = Wine imports from country j,

$M_w$  = World wine imports.

The data source:

- Wine export values from Portugal to other countries and wine import values from each country described come from the United Nations International Statistical Database (COMTRADE of UNSD).
- Wine export values from Portugal to the world and total wine imports in value (from the world) were collected from the Food and Agriculture Organisation of the United Nations (FAO).

**Table 3.** Trade Intensity between Portugal and Other Countries

Countries	Trade Intensity – Portugal/Other Country								
	1996	1997	1998	1999	2000	2001	2002	2003	
France	5.54	5.84	6.21	6.32	6.23	6.80	7.43	7.43	
Italy	2.27	1.66	1.68	1.31	1.33	1.64	1.71	2.47	
Spain	3.13	7.02	3.99	4.33	6.75	5.19	5.57	5.10	
Germany	0.30	0.31	0.37	0.36	0.40	0.39	0.38	0.41	
UK	0.71	0.77	0.72	0.77	0.73	0.71	0.68	0.71	
Greece	0.86	1.28	1.94	2.21	2.47	1.53	0.41	2.31	
Netherlands	1.79	2.13	2.45	2.16	2.26	2.89	2.66	2.48	
Belgium	1.92	1.71	2.08	1.83	1.89	1.76	1.55	1.72	
Denmark	1.20	0.92	1.05	1.10	0.95	0.88	0.87	0.97	
Sweden	0.66	0.77	0.87	1.04	1.05	0.84	0.81	0.69	
Chile	0.19	0.01	0.04	0.05	-	0.13	-	0.30	
Brazil	5.11	5.46	4.78	4.40	4.91	5.28	4.26	4.52	
USA	0.51	0.50	0.52	0.54	0.48	0.48	0.53	0.37	
Canada	0.56	0.65	0.76	0.93	1.43	1.24	1.18	1.20	
Australia	0.58	0.59	0.44	0.55	0.46	0.55	0.44	0.42	
N. Zealand	0.30	0.29	0.40	0.32	0.82	0.54	0.45	0.48	
South Africa	-	-	-	-	2.70	4.79	2.09	1.01	
Angola	9.24	9.67	10.36	10.28	7.49	14.66	15.59	21.16	

Source: Author's calculations.

Portugal has the strongest and relatively most constant bilateral wine trade with France, Spain and ex-colonies like Brazil, particularly Angola (at increasing values, especially in later years). There are also strong but more modest values for Italy, the Netherlands, Belgium and South Africa for the years available (all these countries reporting indices higher than the unit for all the years involved in the analysis).

To be more specific in the analysis, the case of Angola is rather unique being the country where Portugal presents the highest levels of intensity trade. If Portugal was losing its market share in Angola from 1996 (having a share of 44.8%), the situation began to revert since 2000 when it had the lowest peak (27.5%); in 2002, Portugal crossed the barrier of a 50% share, and also in 2003 with a 72.6% share. It should be noted that more than 95% of the value of Portuguese wine exports to Angola is from non- liquor wine.

For France the trade intensity is strong for all years and at increasing values, with Portugal holding about a quarter of the share in the French market. In addition, about 85% of Portuguese wines exports to France are of Porto wine although in the two last years the tendency reports an increase of non- liquor wine in the total percentage of exports.

Brazil is another country where Portugal has been able to maintain straight relations along these years with slight oscillations, which in market shares, signify that if Portugal in 1996 had a 24.8% share in the Brazilian market this percentage decreased to its lowest percentage in 2002 (14.3%), recovering a little in 2003 (15.5%). For Brazil, the value from the wine exported is mostly from non- liquor wine (around 70 – 79%).

The levels of intensity trade with Spain are significantly strong, occurring oscillations especially in the first years of the analysis. Reverting the analysis into market shares one may say that they follow the index tendencies; the lowest peaks report shares of around 15% in the Spanish wine market while the highest ones report shares around 25% – 30%, but in the last three years it has stabilised to shares around 17% - 18%. The value received from Portuguese wine exports to Spain is mostly from non- liquor wine, although the percentage has decreased in the last three years to percentages in the order of 52% – 60% for non- liquor wine.

Nevertheless, Portugal maintains trade intensity indices above the unit throughout the whole period of analysis with the Netherlands, Belgium and South Africa., and those relations are stronger and more constant regarding the Netherlands, reporting shares between 7.9% – 9.6%. The situation is different for Belgium and South Africa where a loss of share in the Belgian market was verified during this time period (9.3% in 1996, and 5.9% in 2003), with greater magnitude for South Africa (9.9% in 2000, 15.9% in 2001 and then a retreat in 2002 to 7.0% and in 2003 to 3.5%), revealing a substitution of Portuguese wine imports with wines from other countries, given that the level of South African imports met increases at around 40-50% of the wine imports in 2001/2002 and 2002/2003.

Portugal gradually developed tighter trade relations with Greece over the years. Portugal had in 1996 a 4.2% share in the Greek wine market (more than 95% of Portuguese exports to Greece were non- liquor wine) passing to 7.9% in 2003 (when total Portuguese exports to Greece were characterised by 70.3% of non- liquor wine), demonstrating in this way the strengthening of trade relations between these countries.

Also with Canada, Portugal has made some progress since 1996, presenting good responses regarding the intensity index as well as the Portuguese share in the Canadian wine market, which in the first years of the analysis



was around 2.7% - 2.9% and in the last years around 4%. More than 70% of the value provided from wine exports to Canada comes from liquor wine. Finally, it should be noted that for the major wine importers like the United Kingdom, Germany or the USA, Portugal cannot impose its trade strategy and form a stronger market during this time period, corresponding to a low trade intensity index for the countries mentioned and low market shares – on average a 1.3% share in the German market, 2.4% in the UK and 1.5% in the USA.

### 2.2.2. Revealed Comparative Advantage Index (Balassa Formula)

The Revealed Comparative Advantage Index is a measure that can be used to verify whether a country that is exporting a certain product has in fact an advantage exporting to external markets. The RCV index assumes that the international trade of a country reveals its comparative advantages (Piccini and Puga 2001). This index measures the capacity of a country to compete in external markets; in other words, “is this country good at...?”

$$RCA_k = (X_{i,k} \div X_{i,t}) \div (X_{w|i,k} \div X_{w|i,t}) \times 100 \quad (2)$$

#### Where:

**RCA<sub>k</sub>** = Revealed Comparative Advantage Index of product **k** exports (wine);

**X<sub>i,k</sub>** = Export value of country **i** and product **k** (wine);

**X<sub>i,t</sub>** = Total (**t**) export value of country **i**;

**X<sub>s|i,k</sub>** = Export value of wine of selected countries excluding country **i** wine exports;

**X<sub>s|i,t</sub>** = Total export value of the selected countries excluding country **i** total exports.

The data sources used were as follows:

- Wine exports – FAO,
- Total exports – COMTRADE,

#### Auto- Sufficiency Index

The Auto- Sufficiency index measures at which level a country’s production covers the domestic needs (total consumption).

$$AS_{i,k} = P_{i,k} \div C_{i,k} \quad (3)$$

#### Where:

**AS<sub>i,k</sub>** = Auto- sufficiency index for wine in country **i**;

**P<sub>i,k</sub>** = Quantity of wine produced in country **i**;

**C<sub>i,k</sub>** = Quantity of wine consumed in country **i**.

The data sources used were as follows:

- Wine production – OIV,
- Wine consumption – OIV.

**Table 4.** Revealed Comparative Advantage and Auto- Sufficiency

Country	Revealed Comparative Advantage – Balassa								Auto-sufficiency (%)
	1996	1997	1998	1999	2000	2001	2002	2003	
France	831.1	881.0	857.2	883.5	841.0	793.8	773.5	770.1	148.9
Italy	290.1	295.1	292.5	308.3	332.6	339.9	336.7	313.7	161.0
Spain	347.3	337.1	333.8	325.9	332.3	329.5	294.2	298.0	262.5
Germany	24.4	21.0	18.4	18.1	17.7	17.1	16.7	17.2	48.8
<b>Portugal</b>	<b>725.1</b>	<b>682.8</b>	<b>595.7</b>	<b>565.7</b>	<b>622.4</b>	<b>585.7</b>	<b>549.6</b>	<b>538.7</b>	<b>143.0</b>
Hungary	223.9	145.9	105.5	79.0	71.5	60.6	53.2	46.0	103.2
Romania	122.0	148.6	119.5	67.6	53.5	54.2	47.5	38.6	110.0
Greece	180.4	185.2	184.5	162.7	166.0	137.8	127.1	147.3	127.5
Cyprus	248.3	190.3	172.8	163.8	203.5	184.2	211.4	254.1	-
Netherlands	8.7	11.9	14.0	17.4	10.6	12.4	19.2	15.0	-
Belgium	10.8	13.6	11.4	11.5	13.6	11.2	9.3	9.0	0.10
Sweden	0.4	1.4	2.0	1.6	1.9	1.8	2.3	6.5	
Denmark	8.2	15.3	15.4	15.8	24.1	30.0	30.8	32.1	
UK	8.3	14.3	14.5	14.7	16.7	15.8	17.2	17.7	
Chile	584.1	774.8	940.3	895.7	1035.2	1136.4	1035.4	945.7	244.8
Argentina	85.1	143.7	152.9	156.5	177.2	172.8	136.2	157.8	105.9
Brazil	9.3	8.7	2.8	2.3	2.0	1.4	0.5	0.3	101.1
USA	12.2	14.0	16.6	16.1	17.7	18.6	18.7	20.4	90.1
Canada	0.5	1.0	0.6	0.6	0.8	1.0	1.0	1.0	16.3
Austrália	218.3	259.1	298.4	382.1	470.9	530.5	608.8	656.5	287.2
N. Zealand	86.9	111.1	115.1	160.6	212.7	223.4	255.3	265.1	132.6
South Africa	-	-	-	-	297.7	259.0	361.1	372.8	185.1

Source: Author's calculations.

Germany, Belgium, USA, Canada, and China and of course the whole group of non-producing countries cannot meet their internal needs for wine and consequently have to open their economy and import.

Regarding the Comparative Advantages Index, Portugal's wine exports are based on a comparative advantage throughout the whole period of analysis with high values indicative of a strong capacity for the Portuguese wine market to compete in the world wine market (in this case to compete among the selected countries).

However these conclusions are good not just for Portugal but also for many producing countries in the analysis. France, Italy, Spain, Greece and Cyprus from the *Old World* countries and Chile, Argentina, Australia, New Zealand and South Africa from the *New World* countries have obtained wine exports based on a revealed comparative advantage, meaning that these countries can compete in external markets because their product's exports are revealed, compared to other exports from the country, as giving an advantage over the external situation.

For Chile, New Zealand, Australia and South Africa not only are their exports based on a revealed comparative advantage but a tendency also verified for its enforcement during the time period, most probably explained by huge investments in R&D and market research, new processes,

equipment, techniques, etc. On the other hand, *Old World* countries are facing some difficulties in maintaining the same margins over time. Portugal's results demonstrate once more that something must change in order to stop the decreasing levels on its revealed comparative advantage for wine.

Observe now the Hungarian and Romanian cases; until 1998 both countries were encountering revealed comparative advantages for wine but since then this advantage was lost and has not recovered yet.

All the other selected countries have a comparative disadvantage for wine, meaning that the product in question is not the one that can give to these countries the greatest benefits because there are countries that can have a better and higher competitive capacity.

### 2.2.3. Which Countries does Portugal compete with, and which does Portugal not?

This index is useful to analyse the capacity of a country to compete in the world over another country's capacity to compete. With this relation an index of which country is more competitive can be obtained by pairs (Santiso 2004). In this specific case, the comparison is made by confronting Portugal with another country. If the index value is higher than the unit, Portugal competes with the country, revealing then that it is better off in the wine trade in external markets than the other country. Otherwise, Portugal does not compete with the other country. The index was calculated for the years from 1996 to 2003 with the purpose of observing the evolution of this relation over time giving more power to the analysis:

$$C_{p,j} = (X_{p,k} \div X_{w\setminus p,k}) \div (X_{j,k} \div X_{w\setminus j,k}) \quad (4)$$

Where:

$C_{p,j}$  = Competitiveness index on wine exports between Portugal and other countries;

$X_{p,k}$  = Wine export value of Portugal;

$X_{w\setminus p,k}$  = World wine export value excluding Portugal;

$X_{j,k}$  = Wine export value of country j;

$X_{w\setminus j,k}$  = World wine export value excluding country j.

All the data was collected from the Food and Agriculture Organisation of the United Nations (FAO).

**Table 5.** Competitiveness between Portugal and other Countries

Countries	Competitiveness – Portugal vs. Other Countries (market share ratios)							
	1996	1997	1998	1999	2000	2001	2002	2003
France	0.07	0.06	0.05	0.05	0.06	0.06	0.06	0.06
Italy	0.21	0.21	0.19	0.18	0.18	0.16	0.16	0.17
Spain	0.46	0.44	0.39	0.37	0.39	0.36	0.37	0.36
Germany	1.11	1.28	1.22	1.20	1.34	1.23	1.23	1.12
UK	7.40	3.73	3.41	3.31	3.08	2.89	2.66	2.83

Hungary	5.96	5.77	5.94	7.01	7.54	7.61	7.75	8.77
Romania	17.12	12.88	14.61	24.23	27.45	22.95	21.61	25.23
Ukraine	7.74	13.21	24.42	42.88	-	25.02	31.94	33.30
Greece	7.87	7.79	7.22	7.75	8.36	9.98	10.42	8.55
Netherlands	10.39	7.00	5.90	4.47	7.63	6.43	4.05	4.82
Belgium	8.81	6.56	6.74	6.44	5.78	6.19	6.73	7.08
Sweden	561.69	141.53	83.73	116.35	104.60	101.56	71.78	25.43
Denmark	41.39	21.35	19.55	17.72	12.71	9.15	8.22	8.20
Chile	1.87	1.25	1.04	0.99	0.81	0.66	0.79	0.90
Argentina	8.30	4.23	3.57	3.80	3.24	3.06	4.06	3.68
Brazil	37.63	34.64	99.69	122.75	133.58	166.56	435.14	791.52
USA	1.80	1.34	1.03	1.00	0.88	0.84	0.91	0.98
Canada	154.22	72.86	108.76	92.24	65.48	50.13	55.05	57.98
Australia	1.26	0.98	0.86	0.64	0.50	0.42	0.36	0.37
N. Zealand	13.89	10.29	10.41	6.94	5.39	4.61	3.88	3.92
South Africa	2.98	2.85	2.93	4.39	1.95	1.95	1.71	1.46

Source: Author's calculations.

Table 5 gives the relations between Portugal and other countries.

The results demonstrate that Portugal cannot compete in external markets with France, Italy and Spain from the European countries but competes better with countries like Hungary, Romania, the Ukraine and Greece and has even enforced competitiveness levels in comparison to the first three years of the analysis.

Also with Brazil, there was an improvement in the competitiveness levels over time, but Portugal has lost its competitiveness in the New World countries. Portugal cannot compete with Australia, Chile and the USA, given the fact that the index values are below one – since 1997 for Australia, 1999 for Chile and 2000 for the USA. Portugal still competes with South Africa and New Zealand but the index value shows that the tendency is to gradually lose its competitiveness.

### 3. Vinhos Verdes Wine Region

The Vinhos Verdes region is characterised by very fragmented farms with small scale production, raising difficulties regarding productivity levels, investments in new technologies and sufficient market power to compete. Nevertheless, the number of viticulturists in this region is extremely high; according to CVRVV (2005), there are 47,235 viticulturists in this region for an area of 35,245.14 hectares. Consequently, the relevant area per viticulturist is extremely low (0.75 hectares per viticulturist).

#### 3.1. Methodology and Data

The commerce (volume) of wines from the Vinhos Verdes region is performed by the different agents: Individual Producers (9.7%); Producer-Bottlers (4.3%); Cooperatives (12.5%); Wholesaler- Bottlers (29.0); Wholesaler-Vintner- Bottlers (44.3%) and Wholesaler- Non- Bottlers (0.2%).

In order to generate the sampling frame a list of wineries (Producer- Bottlers and Wholesaler- Vintner- Bottlers, which for simplification purposes will be named from now on as Producers and Wholesalers) with their respective

information was compiled from two main sources: the CVRVV site and e-Mercatura (promotional site of wines from the northern region). This work resulted in a list of 158 Producer- Bottlers and 84 Wholesaler- Vintner- Bottlers divided into the following nine sub- regions: Monção, Lima, Cávado, Ave, Basto, Amarante, Baião, Paiva and Sousa. Each of these sub- regions received a weight rate according to the number of agents of the sub- region accounted in the total listed.

To collect the required information a questionnaire was designed including five major parts: general information; origin and destination of production; activity diversification; employment; barriers and investment.

From the listed agents 75% from both Producers and Wholesalers were contacted. A pre- approach by telephone was made as a way of introducing the subject to the agents and explaining the reasons for the questionnaire and objectives to be achieved by the study. Confidentiality was rephrased several times in order to secure the information of each response and an immediate availability of the questionnaire to the interviewees was offered by fax or e- mail to facilitate the comprehension of the questions for a further meeting.

Therefore, the period corresponding from the beginning of February to the end of April (minimal interference with the agents' normal work) 2005 was totally committed to contacts and interviews with the targeting agents.

The objective area of analysis involved a radius around 60 kilometres where travelling distance from home to interviewee (and return) was from 5 to 180 kilometres.

From the contacted agents (120 Producers and 62 Wholesalers) a response rate of 35.8% (43 questionnaires) was obtained for Producers and 32.3% (20 questionnaires) for Wholesalers. Unfortunately, some of the questionnaires were not in a good enough condition of use, decreasing the above- mentioned rate to 31.7% (38 questionnaires) for Producers and 25.8% (16 questionnaires) for Wholesalers. Despite the low rate of response it is relevant to note that some of the agents that refused to fill in the questionnaire accepted or suggested another way to transmit information, through an informal conversation. Therefore, each of the interviews (with or without questionnaire) has its own value by helping in the comprehension of situations, doubts and the system, and even other literature became clearer after some words.

Generally, producers have shown dissatisfaction with the Commission in the sense that they feel somehow unprotected, often stating that the CVRVV serves mainly the interests of the few big agents rather than the group as a whole. Usually, they did not express any doubts about the Commission's efficiency regarding wine certification and few complained about the inspection process to identify frauds. Some of the interviewees related that the Commission doesn't have a common strategy, common to the agents of the region; and that a major part of the Commission's funds provided by the sales of guarantee seals is destined to support operational activities of the Commission (to support the "Commission's Machine").

Regarding the Vinhos Verdes wines' reputation in the market, they demonstrate particular upset that singular cases could damage the "image building" efforts of the whole.

In order to analyse the questionnaires, Excel was used for simple statistics, EViews software (version 4.1) for the logit estimation and JMP software (version 5.1 for academic use) for the calculation of differences between Producers and Wholesalers.

## **4. Main Findings**

### **4.1. General Information**

Wholesalers are more likely to export (56.25%) than Producers (39.47%) although without a highly significant difference; regarding activity diversification, the majority of Producers (60.53%) and Wholesalers (62.5%) declared to have some kind of diversification.

Wholesalers also report bigger areas dedicated to vines. A considerable percentage of Producers have their area falling in the lower intervals (28.9% of Producers have an area between 0 and 5 hectares, 21.1% between 5 and 10 and 23.7% between 10 and 15 hectares), none of the interviewed Wholesalers reported having an area below 5 hectares. A big percentage of Wholesalers (46.7%) reported an area above 20 hectares. These values in mean terms represent 12.65 hectares for Producers with a standard deviation of 12.09 and a median value (introduced due to extreme values) of 9.94 hectares, while for Wholesalers, there was a mean value of 30.01 with a standard deviation of 36.13 and a median value of 17.50 hectares.

### **4.2. Origin and Destination of the Wine**

Comparing the situation in 2000 with 2004, the means difference observed between Producers and Wholesalers showed a decrease in the stocks (initial and final stocks), costs of production, and sales (volume and value). Therefore, Wholesalers report, on average, higher values than Producers, but the difference is lower in 2004. This difference between means is wider only for the volume produced.

It is possible that these results are influenced by the increase of answers in 2004; hence, by excluding those agents that didn't answer for 2000, the results for the stocks, production and value of sales are in accordance with the previous analysis, but costs of production are not. Thus, the mean difference between Producers and Wholesalers (2004) is wider for the wine produced, costs of production and volume sold and narrower for the stocks and value of sales.

It is also important to say that the costs of production per hectolitre produced (2004 information) are lower for Wholesalers than for Producers. On average, one hectolitre of wine produced (only the wine, bottling and taxes not included) costs 86.91 euros to Producers and 64.46 euros for Wholesalers, and if the wine purchases are included, the cost for Wholesalers decreases to 51.33 euros per hectolitre. Regarding sales, on

average, a Producer receives 202.26 euros per hectolitre, while a Wholesaler receives 223.10 euros per hectolitre.

Viticulturists respond that, on average, 88.26% of their production is quality wine (in terms of total production), 9.85% is regional and 1.89% is table wine and more white wine than red. Therefore, agents claimed to produce, on average, 68.6% of quality white wine, 8.9% of regional white, 1.2% of table white, 17.9% of quality red, 2.7% of regional red and finally 0.7% of table red wine.

Producers tend to sell more to restaurants/wine shops and consumers, which explains the high level of sales in the local (44% in 2004) and regional market (38% in 2004), while Wholesalers' sales are mostly destined to the regional (40% in 2004) and national market (35% in 2004), mainly through distributors and secondarily, through restaurants/wine shops and consumers.

Producers that export are more likely to expect a sales growth than those that do not export and Producers that diversify are also more likely to expect growth than those that do not diversify, although this difference is narrower than for exporters vs. non-exporters. On the other hand, the majority of Wholesalers expect to have a sales growth independently of whether they export, diversify or not.

### **4.3. Employment**

Producers employ, on average, 6.6 employees and Wholesalers 10.7, showing a mean difference at the 10% level of significance. This difference is explained by the long-term contracts, given that Producers have on average 4.3 employees with long-term contracts, while Wholesalers have 9.6. Partial term contracts do not differ too much from Producers to Wholesalers. While each employee from a Producer's winery participates, on average, in 22583 euros of total sales, each employee from a Wholesaler's winery takes part in 67507 euros of total sales.

Regarding wineries that diversify versus those that do not diversify; the results show that there is a significant difference only with respect to employees with long-term contracts. Wineries that diversify have, on average, more employees than those that do not diversify, and this difference is shown in long-term contracted employees; diversifiers contract (long-term) four more employees on average than non-diversifiers. Wineries that export show significantly more employees than those that do not export. Moreover, from the 10.7 employees that exporters have on average, 8.5 have long-term contracts, while only 2.4 are employed part-time.

For the wine activity and other activities on the farm, experience is considered to be the most important skill of an employee.

### **4.4. Barriers, Cooperation and Investment**

Vintners consider the climatic conditions, bureaucracy and financial liquidity to be the major barriers to their activity. Regarding investment,

vintners invested more in the wine activity (vines, vinification and storage rooms) than in the other activities on the farm (reception room, accommodation and restaurant) especially Wholesalers.

It was expected for vintners to cooperate more than what they in fact do. They do cooperate but, in general, there were no formal agreements found and the existing ones were at basic levels.

#### **4.5. Profile of Exporting Wineries**

It was found that a high percentage of Producers (42.9%) have been exporting for less than five years, while most of the Wholesalers (62.5%) have been exporting between six to ten years and the majority of Producers that export (40%) are medium to big size (between 25000 to 100000 of bottles sold in 2004) while 75% of Wholesalers have a big size (more than 100000 bottles).

The percentage of revenues from exporting is higher for Wholesalers (62.5% have more than 10% share of revenues from exporting) while only 38.5% of Producers have more than 10% of revenues from exporting).

In general, vintners export their wines to the EU countries, although there is a reasonable percentage of Wholesalers that also export to North America, South America and ex-African colonies. Regarding assistance in exporting, exporters give relatively high importance to assistance in seeking appropriate agents/distributors in exportation markets; information concerning consumers' preferences; opportunities to learn more about experiences of other exporting firms; and promotions outlined by competitors in exportation markets.

In addition, a high percentage of agents do not have any kind of alliance or cooperation with other firms or organisations in the exportation markets (64.3%) and this percentage is even higher regarding market research (78.6%).

#### **4.6. Activity Diversification**

Concerning activity diversification, Producers perform mostly guided visits, rural tourism, wine events and weddings/parties, while Wholesalers apply mostly guided visits and wine events.

$Y = 1$  → if diversifying has a considerable impact on business sales (more than 30%),

$Y = 0$  → otherwise;

$X_1$  = Number of visitors due to some kind of activity on the farm;

$X_2$  = Sales derived by diversifying;

$X_3 = 1$  → if farmers invested in the activity other than wine activities during the period from 2000 to 2004,



X3 = 0 →otherwise;

X4 = 1 →for year 2004,

X4 = 0 →for year 2000;

X5 = 1 →if Producer,

X5 = 0 →if Wholesaler.

**Table 6.** Estimated Parameters

Variables	Estimates	z- statistic	P- value
Intercept	- 4.74	- 2.55	0.01
X1	- 0.02	- 2.03	0.04
X2	0.0001	2.98	0.003
X3	4.136	2.65	0.008
X4	1.119	1.03	0.30
X5	0.93	0.636	0.52
R2	0.646		
LLH	- 13.59		
LR (5 df)	49.64		1.64E- 09

Source: Questionnaire and logit estimation using EViews software.

The negative value of the coefficient  $\beta_1$  implies that the increase in the number of visitors would result in a decrease in the probability of the impact in business sales from diversifying. At first sight it might look contradictory but the explanation is quite simple due to the fact that many wineries receive visitors in a non-remunerative form. It is common to perform guided visits to the vineyard and cellar, and wine events for potential customers that do not include, directly, any lucrative compensation. Most probably, the reason for this is to be post- reflected in an increase of “cellar door” wine sales through their beautiful landscapes.

In addition to this information, the means of wine sales were calculated for those wineries that receive visitors and for those that do not. Therefore, the wineries that received visitors in 2004 present an average of 315,083.00 euros in wine sales, while those that did not receive visitors in 2004 present an average of wine sales of 166,677.00 euros.

The value of  $\beta_2$  is in accordance to what is expected, meaning that an increase in sales derived from other activities on the farm rather than actual wine sales, causes an increase in the probability of a firm to have a good impact on its business sales from diversifying.

Also very important were the results found for the dummy explanatory variable X3. The positive value of the coefficient reflects that an increase in investments related to diversification activities, such as investments in a visitors’ lounge, accommodation or a restaurant, will increase the probability of a considerable impact on business sales from diversifying.

## 5. Final Remarks and Recommendations

The Portuguese wine industry still has a considerable role in the international wine market, but the numbers indicate that its share has been decreasing for the past few years. In fact, Portuguese wineries are losing their competitiveness to the New World countries and the explanation is more complex than one may think. It is a structural problem that is challenging the Old World like the land fragmentation, the high level of small Producers, the incapacity to invest in new technologies and in marketing systems, etc.

In order to succeed in the exportation markets agents must learn and understand consumers' preferences in the targeting markets, but this requires investments in market research. However, agents with a low capacity of investments may rely on studies provided by several institutions such as ViniPortugal, CVRVV, ICEP, etc. For example, ICEP, which is the Institute of External Trade of Portugal, has gathered sectorial and market research through its delegations all over the world. These studies offer information about the market, characterisation of imported wine, recommendations concerning wine quality, prices, labelling, distribution channels, brand promotion, factors influencing consumers' purchases and tastes, information about the major competitors and taxation/legal procedures.

For small vintners that have good quality wine and want to export, but limited capital to invest in marketing and limited production to satisfy the potential client, the solution is collective actions: on the one hand, to respond to the needs in terms of volume and, on the other hand, a collective action to build a whole new image, a unique wine label that may be directed only to exports or extended to the national market. Moreover, together, they can search for proper agents/distributors in the exportation markets. As a consequence, costs might be reduced and everybody involved might benefit by an increase in profits.

From the empirical research on the Vinhos Verdes wines, it is obvious that there are differences between Producers and Wholesalers.

All in all, there are differences between Producers and Wholesalers but that does not mean that the region does not have good examples of Producers that have succeeded in this activity. The analysis has shown that many things can be improved and it is up to the agents to take them up as opportunities and not as failures.

For further research it is suggested a cooperation among scientists to introduce in the analysis the factor quality which may give better results to the whole Portuguese viticultural industry. Furthermore, a specific analysis of successful cases of wineries that export and/or diversify with possible networks in the whole business and welfare implications into the society may demonstrate to vintners the advantages and disadvantages of exporting or diversifying, forms of organisation and possibilities of increasing their wineries' profits.

It is also extremely important to put the research available to the public through conferences, seminars, workshops so as to launch discussion. This is valid not just to the Vinhos Verdes wine area but to the whole national

viticultural sector and agents should know the situation at the international level given the dynamism of the markets.

Finally, It is also suggested to the CVRVV the establishment of a teamwork with vintners (vintners that have little capacity of production and trade but good quality wine) in a sub-region of the Vinhos Verdes as an experimental work that can help them in the creation of a unique label destined merely to external markets and in the understanding of the importance of marketing techniques.

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