

Profitability Determinants in the Wine Industry: the case of Piedmont

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Abstract

Italian wine is synonymous with excellence all over the world. This suggests the potential of this sector to showcase the region of Piedmont and its economy. The aim of this paper is to focus solely on Piedmont's wine companies, in order to identify the factors impacting on company profitability. Our target is to provide useful elements to help wine producers to expand their business and to direct their strategies. In particular, we have found a positive and significant relation between firm profitability and two variables: export intensity and firm size. In addition, the analysis is expanded to verify whether it is better to apply a sales policy based on price or on quantity. This data should be an incentive to winemakers to expand their businesses abroad and increase their size with mergers and investments.

Keywords: Wine, Profitability, Export

1. Introduction

The International Organization of Vine and Wine considers Italy the second largest wine producer in the world with 40,060 mhl of production (OIV 2012) out of a worldwide figure of 258,200 mhl. In 2012, the surface area dedicated to vines was 764 mha, behind only Spain and France. Today, over three hundred DOC (Denominazioni di Origine Controllata) and DOCG (Denominazioni di Origine Controllata e Garantita) wines are produced in Italy, or over five hundred when IGT (Indicazione Geografica Tipica) wines are factored in.

Through this system, Italy's wineries have a competitive advantage when it comes to the production and sale of quality wines. These classifications of Italian wines enable international consumers to understand various levels of designation so they can make informed buying decisions. At the same time, in recent years the market has acknowledged and rewarded Italy's immense patrimony of "indigenous" grapes. They include grapes (Nero d'Avola, Fiano, Sagrantino, and Teroldego) that only modern cellars can provide to world consumers. As a result, a rapidly increasing number of vintners focus on "traditional" varieties as a mark of distinction in a market dominated by "international" varieties (Merlot, Cabernet Sauvignon and Chardonnay). This produces a direct positive effect on sector trends. The employment rate in the sector was stable (-0.5%) in 2013, and increased by 2.7% in the period between 2008-2012, in contrast with the beverage sector (-5.2%) and global manufacturing industry (-6%) in the same period (Mediobanca 2014).

These results demonstrate the potential of this sector to showcase the Piedmont Region and its economy. By focusing solely on Piedmont wine companies, this paper aims to identify the factors impacting on company profitability. We seek to provide useful elements to help wine producers to expand their business and to determine their strategies. In the near future this will mean an increase in employment and increased production of wealth in the Region.

2. Review of the literature

The role of wine in regional economies has been a major issue both for European Institutions and for regions with large wine production. European Commission reforms were announced in 2006 and led to agreed legal documents in 2008. The EU (28 countries) produces about 60% of the world's wine (OIV 2012). Forecasts suggest that this percentage will increase in the future. As is well-known, the primary pursuit of business is creating and maintaining value (Conner, 1991). Businesses produce wealth not only for owners, but are able to create positive impacts on the whole community. Firm structure and forms of governance have been studied extensively in order to identify factors that affect

performance (Mazzi 2011). Amato and Amato (2004) indicate that the performance of wineries depends on the relationship between the market structure and the strategies adopted, and produces advantages only when performance indicators are superior to those of other companies (Amadiieu & Viviani 2010).

Performance variables are in two main categories: accounting and the market. The main accounting profitability ratios are: ROA (return on assets), ROE (return on equity), ROI (Return on investment) and ROS (Return on sales). These ratios have been utilized by Schiefer and Hartmann (2008) for agriculture, and by Amadiieu & Viviani (2010) and Hirsh and Gschwandtner (2013) for the wine production sector.

Other economic variables are VA (Value added) (Fisher & Schornberg 2007), EBIT and EBITDA.

EBITDA shows economic performance in terms of the internal resources necessary to run wineries (Simon-Elorz et al. 2014) and this is why authors such as Amadiieu & Viviani (2010) and Sellers-Rubio (2010) opted for it, whereas Dorsey & Boland (2009) and Declerck & Viviani (2012) used EBIT. Market performance is generally estimated with Tobin's q, that is the ratio of the firm's market value to the replacement cost of its assets. However it is not available for SMEs.

The purpose of this paper is to identify variables that are able to influence the profitability of Piedmont wineries.

For this reason, we have used ROI to assess a firm's profitability. ROI is the ratio of EBIT to total assets, assets that for the type and dimension of the companies analyzed are generally entirely operating. The reason for this choice is the structure of the sample analyzed, which mainly comprises small companies and in some case cooperatives that are not geared to generating high revenues.

As is well-known, ROI can be broken down into a further two ratios.

$$ROI = \frac{EBIT}{Tot.Ass.} = \frac{EBIT}{Oper.reven.} * \frac{Oper.reven.}{Tot.Ass.} = ROS * ROT$$

ROS (return on sales), also known as a firm's "operating profit margin", is helpful to management, providing insight into how much profit is being produced per euro of sales. A high value means that companies apply a margin policy on sales.

On the other hand, ROT (Return on turnover) is a measure of how effective a company is at generating sales from the assets invested. A high value means that companies apply a Turnover policy based on volume.

Thus ROE is not applicable. Nor are EBIT or EBITDA, which are similarly influenced by company size, a variable we wish to consider.

The paragraphs below illustrate the main factors considered in the literature.

Specifically, we will analyze:

1. exports
2. firm dimensions and business group affiliation
3. type of company
4. experience

2.1 Exports

Many research studies focus on export performance, which does not have a unanimously acknowledged definition (Maurel 2009). For instance, one definition is «the overall outcome of a firm's international sales, which includes three dimensions: export sales, export profitability and export growth» (Shoham 1998). This definition identifies three dimensions to indicate whether the export activity is more or less successful.

Measures of export performance include export intensity, such as the percentage of sales sold internationally (Tookey 1964), perceived profitability (Bilkey 1982), and continuous export activity (Brooks and Rosson 1982).

Other definitions include elements such as export effectiveness, export efficiency and continuous engagement in exporting (Aaby and Slater 1989, Madsen 1987, Shosham 1991).

In particular, evaluating export sales may include analyzing export intensity (export on total sales), euro export sales and market share for the most important product/market combination. According to Aaby and Slater (1989), export performance is influenced by the environment and strategy, which is itself influenced by other elements such as firm characteristics and skills. Zou and Stan (1998) classified variables into two main classes, controllable and uncontrollable. Controllable internal determinants are management attitudes, management perception and marketing strategy, and uncontrollable determinants are internal (i.e. management and firm characteristics and management and firm skills) and external (i.e. industry characteristics, foreign and domestic market characteristics). Others have simplified by choosing variables such as the environment, organizational and managerial factors as the main elements influencing marketing strategy and export performance (Katsikeas et. Al. 2000). But, as can be seen, Shoham's definition is not related to the dimension of the firm (big or small/medium-sized companies). Focusing only on SMEs, Maruel (2009) identified internal, external and strategy-related determinants. Empirical analyses suggest a link (in the French wine industry) between export performance and other variables such as business partnership, innovation and size.

Because the Italian wine industry mainly comprises SMEs, the focus here is on determinants specifically relevant to SMEs. Furthermore, due to a major limitation in the collection of data, this analysis of export intensity defines exports

as all sales in a foreign country directly carried out by a firm, including sales via export agents. Export intensity is the ration of export sales to total sales.

2.2 Firm dimension and business group affiliation

The size of a firm is an important variable when it comes to explaining its performance. Large companies can successfully follow market strategies based on brand recognition and economies of scale (Amato & Amato 2004). This means that an increase in the size of the firm leads to an organizational improvement that produces profit from economies of scale and benefits generated by relevant investments. Simon-Elorz et al. (2014) described this minimum efficient size as an entry barrier for new wineries, and it can be a discriminant element of competitiveness.

The importance of SMEs in the regional wine context suggests the weakness of these barriers, which do not seem to be determinant. In our national context, small and medium-sized companies play a central role in the economy. Indeed, 99.99% of Italian companies (3.7 million in 2012) are SMEs. They also dominate employment (80% of the total). Furthermore, SMEs produced 68% of total added value (SBA 2013). This, associated with other elements such as small plots of land owned by many different people and a strong family approach, reflects the structure of the Piedmont wine industry, generally comprising SMEs.

Size indicators can be gathered from Financial Statements or they can reflect market values (Biddle et al. 1997). In particular, Financial Statements, the main source for SMEs, show the Operating revenues or number of full-time employees. Other studies take into account the total assets (Dorsey & Boland 2009, Loderer et al. 2010, Hirsh et al. 2014, Goddard et al. 2005, Gschwandtner 2012). Due to the specific configurations of wineries, a market value approach is not viable, so this paper includes variables such as Operating revenues and the number of full-time employees. These two variables are related, but a divergence of trends could mean different strategies for human resource management or may be a sign of the inaccurate forecasting of future market trends.

Some studies claim that the larger the company, the better its export performance (Miesenbock 1988, Moini 1995, Wagner 1995), and the larger the effects on the strategies of these firms. In fact, in the last year, considering the opportunities that this sector has showed, the wine industry and market have undergone significant structural changes. As a consequence these forces have formed 3 main types of wine firms (Vrontis et al. 2011):

- global enterprises, active in all segments of the beverage industry;
- large national wine enterprises: focused on wine production and operating in an international context;
- SMEs, characterized by niche strategies and low capital.

Miller (1986) indicates there are two main configurations of strategy and corporate structure: a “simple structure” associated with marketing differentiation, or an organic structure associated with “new product differentiation”. Other authors (Chaganti et al. 1989) found that a strategy based on the reduction of costs is only useful for an SME in a price-war environment. At the same time, a strategy based on the quality of the product, and its image, seems to be the most profitable approach.

Looking at Italian wine firms, the Italian market is evolving with stable or declining domestic consumption, forcing Italian companies to become more territorial and to adopt a conservative strategy, which is focused on specific grape growing sites and the wine marketing practices of the Region (Remaud & Couderc 2006).

In our model it should be remembered that, as stated by Oliveira and Fortunato (2006), age and size could be correlated to the survival and growth of firms.

In addition, some studies analyze the effect on performance of a firm’s association with a group. Results show that group affiliated firms benefit through sharing intangible and financial resources (Ghang & Hong 2000). Business groups are responses to market failures and high transaction costs. Khanna and Rivkin (2000) produced evidence that business groups affect the broad pattern of economic performance, in particular profitability in emerging markets. Ma et al. (2006) analyzed publicly-listed Chinese companies and found that the interaction of business group affiliation and state ownership has a significant and positive effect on performance. However, Chacar and Vissa (2005) found an inverse correlation between profitability and affiliation to a group. In particular they observed that affiliated firms persistently perform badly whereas firms that are not affiliated do not.

This evidence, which can impact on profitability, has been included in our model.

2.3 Type of companies

In Italy wineries are mainly divided into two categories, corporates and cooperatives. Cooperatives are owned by their members, generally the owners of vineyards. They deliver grapes to the cooperative, responsible for the production of wine and subsequent marketing activity. In Italy, as in many major wine producing countries, winemaking cooperatives account for a significant proportion of total wine production. They produce more than half of French wine (Robinson 2006).

This type of structure may give advantages to members, for example by pooling resources and sharing costs, as well as providing financial advantages through EU subsidies. In other words, like corporates they buy, sell and produce

goods and services. However, unlike corporates, cooperatives exist to serve their members. In addition to their ordinary activities, they are active in community development, member education and government lobbying. Staatz (1987) states that farmers, faced with unsatisfactory performance by Investor-owned firms (IOFs), may form cooperative firms in order to force ??? la parola è incomprendibile the investor-owned firms, through competition. This generates benefits that it does not gain itself but which accrue to farm stockholders, as well as other farmers in the area.

Considering profitability, the IOFs' main target is to maximize the rate of return to equity at a given risk level (Copelend & Weston 1983), in contrast with cooperative standards that generally have been modelled as having a zero-profit objective (Halmberger & Hoos 1962), and because the cooperative's members mainly expect to receive benefits from services provided and not only by a rate of return on their investments.

Contrary to theoretical expectations, Parliament et al. (1990) found that agricultural cooperatives perform as well as, or better than, investor-owned firms operating in the same industries in terms of profitability (ROE) and leverage. As a result, the lack of significant differences between these two models suggests their similar goals. Furthermore, when analyzing US agriculture cooperatives, Lerman (1991) identified significant relations between performance and two other variables: size and industry effects.

In accordance with the literature, we established a dummy variable in our model dividing sampled firms into Cooperatives (0) and IOFs (1). We expected to find a positive relation between this variable and profitability.

2.4 Experience

The age of a firm in a specific sector gives rise to two considerations (Simon-Elorz et al. 2014). The first is the survival rate in the sector which is indirectly linked to the second, i.e. experience (Clerck & Viviani 2012, Duquesnois et al. 2010). For this reason, a positive relationship is expected between the age variable and economic performance. Some research identifies the association between the age variable and other factors as organic growth (Davidsson 2005) or export capacity (Maurel 2009). In particular the positive effect produced on export performance is explained because it helps management to develop an aptitude to international transactions and international business partnerships. Galan (2010) observed a positive effect on export performance, whereas Loderer et al. (2010) obtained negative effects.

In this paper, we define experience as the age of the firm, i.e. the number of years since it was established. In some studies this variable is deemed continuous (Loderer et al. 2010, Simon-Elorz et al. 2014, Hirsh et al. 2014), whereas in others authors establish ranges (Jordan et al. 2007). In this study we

established 5 ranges, the first from year 1 to 5, the second from year 6 to 10, the third from year 11 to 20, the fourth from year 21 to 30, and the fifth over 30.

We do not think the knowledge and advantages that a company can obtain during these periods are linear.

3. Data and methods

3.1 Sample and Variables

This research aims to identify determinants able to influence the profitability of wineries. In particular, in accordance with the current literature, the following research questions were developed:

RQ.1 Is Exporting a driver in order to improve profitability?

RQ.2 In order to increase profitability is it preferable to be a big or a small company?

RQ.3 In this sector is it better apply a margin policy or increase volumes of sales ?

To verify these hypotheses, the database comprises wineries (IOFs or cooperatives) i.e. wine producers (Ateco 2007 code 11.02 "Produzione di vini da uve") operating in Piedmont in 2013, and whose Operating revenues were over 1 million Euros (see Annex 1).

The data was partially collected from the AIDA Database (Bureau van Dijk), and other variables such as Export sales and a firm's age were collected from Financial Statements, or, if this information had not been published, by emailing companies. The sample comprises 45 companies and represents overall sales of 525,962 million Euros, 235,584 million Euros in exports (45%). There are 34 IOFs (76%) and 11 Cooperatives (24%), 1,002 full-time employees each able to generate 524,512 Euros in Operating revenues.

Regarding the variables, we selected them from the literature and expect to find significant correlations with profitability.

The variables are set out in Table 1

Table 1 - Definitions of dependent and independent variables

Variables	Typology	Description	Exp. Correlations
Dependent			
ROI	Continuous	Return on investment = EBIT/Tot. Assets	
ROS	Continuous	Return on Sales = EBIT/Operating Revenues	
ROT	Continuous	Return on Turnover = Operating Revenues /Tot. Assets	
Independent			
Export	Continuous	Export intensity = Export sales/Tot. Sales	+
Op. Revenues	Continuous	Size = Log10 (Operating Revenues 2013)	+
Employees	Continuous	No. of full-time employees	+
Type	Dummy	Investor-owned Firm = 1 vs. Cooperatives = 0	+
Group	Continuous	No. of companies across the Group (if present)	+
Age	Categorical	No. of years since the company has been established	+

3.2 Descriptive Analysis

A descriptive statistical analysis is provided in order to describe and understand the Piedmont wine sector. Furthermore, for an accurate evaluation of results some data is compared with 2012 national data published in the Mediobanca (2014) investigation.

Our variables are analyzed in Table 2.

Table 2 - Descriptive statistics

	Years	Op. Reven. (000/ of euro)	Employees	ROI	ROS	ROT	Group	Type	Export	
Mean	37.82	11,688	22.2	3.37	4.28	.847	2.78	.74	.45	
Std. Dev.	22	14,911	28.8	.046	.094	.49	9.9	.44	.31	
Min.	1	1,026	2	-12.24	-	.18	.00	.00	.00	
					29.17					
Percentile	25	24.5	2,219	7	1.04	1.23	.52	.00	.00	.13
	Med.	35.	5,841	12	2.74	2.94	.72	.00	1	.45
	75	54.5	10,926	27.5	5.11	7.82	.97	2	1	.68
	Max.	95	59,790	149	13.73	35.07	2.46	66	1	1

The sample mainly comprises old companies. 75% have existed for over 24 years, only 7 for less than 10 and 5 for less than 5 years..

Regarding firm size, all wineries in the sample are SMEs. Over 75% are small and micro companies. Less than 25% are medium-sized firms. Moreover, seldom are these firms affiliated with business groups. And, if they are, the groups generally comprise only a few companies.

On average, firms employ 22 people with a minimum of 2 and a maximum of 149.

ROI (return on investment) is 3.37, against 4.7 in 2012. Comparing ROI with ROS it can be seen that ROS is generally higher, which could mean that firms in our sample are more margin-oriented. The average value is below 5.7, the national ROI estimated in 2012 by Mediobanca (2014). First of all, this suggests that the overall profitability of Piedmont wineries has decreased and that the Piedmont wine industry is less profitable than other Italian Regions (Toscana 8, Veneto 8.8). The variation can produce effects on our results. Export intensity estimated for 2013 is .45 against a national value of .49 in 2012.

Descriptive results show a normal distribution of export intensity.

3.3 Sample and Variables

Table 3 shows Pearson's correlations for our variables.

Table 3 – Pearson's correlations

		Years	Type	Export	Oper. Revenues	Empl.	ROI	ROS	ROT	Group
Years	Pearson's corr.	1								
	Sig. (2-code)									
Type	Pearson's corr.	-.311*	1							
	Sig. (2-code)	.038								
Export	Pearson's corr.	-.308*	.486**	1						
	Sig. (2-code)	.040	.001							
Oper. Revenues	Pearson's corr.	.109	.216	-.060	1					
	Sig. (2-code)	.477	.155	.694						
Employees	Pearson's corr.	-.049	.154	.076	.732**	1				
	Sig. (2-code)	.751	.312	.619	.000					
ROI	Pearson's corr.	.040	.297*	.354*	.186	-.016	1			
	Sig. (2-code)	.796	.048	.017	.222	.914				
ROS	Pearson's corr.	.193	.158	.307*	.080	.028	.784**	1		
	Sig. (2-code)	.204	.310	.040	.602	.866	.000			
ROT	Pearson's corr.	-.160	.220	.043	.281	-.111	.362*	-.056	1	
	Sig. (2-code)	.292	.146	.780	.061	.469	.015	.715		
Group	Pearson's corr.	.101	.170	-.013	.347*	.415**	-.112	-.024	-.019	1
	Sig. (2-code)	.510	.264	.931	.020	.005	.465	.875	.901	

*. Correlation is material at 0.05 (2-code).

**. Correlation is material at 0.01 (2-code).

Export intensity is moderately correlated with the type of company and ROI. This may suggest that IOFs are more likely to export wines (backed up by Mediobanca findings) and, as expected, exporters increase their profitability. But, at the same time, the export variable is negatively correlated with Years, which may mean that younger companies are more geared towards foreign markets.

This evidence is in contrast with Galan (2010), confirming the evidence produced by Loderer et al. (2010).

A moderate negative correlation is observable between Years and Type. This shows that in our sample Cooperatives tend to be older than IOFs.

Type of company and ROI are weakly positively correlated, confirming Mediobanca (2014) results for 2012, showing IOFs as more profitable than cooperatives.

ROI is strongly and positively correlated with ROS and only moderately with ROT.

Finally, variables such as Operating Revenues, employees and Group are bound up together in strong and moderate correlations. This final strong relationship suggests the need of controls on the regression model to avoid distortions generated by multicollinearity.

3.4 Modelling and Results

An OLS linear model was used to develop this study. All analyses were performed with SPSS (v.22).

The model is:

$$Y = \alpha + \beta_{Export} + \beta_{Op. Revenues} + \beta_{Employees} + \beta_{Type} + \beta_{Group} + \beta_{Age} + \varepsilon$$

The dependent variable Y has a different configuration. Table 4 shows the different variables taken into account.

Table 4 – Model Summary

Model 1	ROI
Model 2	ROS
Model 3	ROT

Table 5 summarizes the models.

In our models the range of R^2 is between .2 and .38. These values may seem low, but they are sufficient to explain profitability ratios. R^2 decreases to .20 when the effect of the variables on ROS is considered and increases to .38, explaining ROT.

Table 5 – Model Summary

Model	R	R Square	Adj. R Square	Std. Error	Durbin-Watson
1	.540	.291	.179	.0425122	1.510
2	.447	.200	.074	.0913321	1.551
3	.619 ^a	.383	.286	.4130547	2.292

Table 6 shows the results of our analysis.

Table 6 – Coefficients

Model	Unstand. Coeff.		Stand. Coeff.		Sig.
	B	Std. Error	Beta	T	
1(Constant)	-.173	.071		-2.426	.020
EXP	.068	.026	.447	2.652	.012
TYPE	.006	.019	.053	.306	.761
YEAR	.005	.005	.155	1.025	.312
Oper. Revenues	.043	.020	.461	2.130	.040
EMP	-.001	.000	-.344	-1.579	.123
GROUP	-.001	.001	-.152	-.983	.332

Model	Unstand. Coeff.		Stand. Coeff.		Sig.
	B	Std. Error	Beta	T	
2(Constant)	-.199	.153		-1.303	.200
EXP	.122	.055	.395	2.211	.033
TYPE	.009	.040	.041	.224	.824
YEAR	.022	.011	.318	1.980	.055
Oper. Revenues	.025	.044	.131	.569	.573
EMP	.000	.001	-.058	-.251	.803
GROUP	-.001	.002	-.079	-.480	.634

Model	Unstand. Coeff.		Stand. Coeff.	
	B	Std. Error	Beta	T Sig.
3(Constant)	-1.716	.692		-2.480.018
EXP	.069	.249	.044	.278.782
TYPE	.065	.182	.058	.357.723
YEAR	-.094	.050	-.263	1.867.070
Oper. Revenues	.838	.197	.858	4.247.000
EMP	-.013	.003	-.772	3.796.001
GROUP	.001	.007	.022	.153.879

In Model 1, the empirical evidence (Table 6) shows that Export and Operating Revenues have significant and positive influences on profitability, with a p-value of between .05 and .01.

In Model 2, the impact of exports is confirmed (between .05 and .01). There is also a positive association between ROS and the firm's age. Other variables are not statistically relevant.

The third model shows an interesting negative association between ROT and the firm's age. In addition, two strong associations (under .01) are observable with Operating revenues and the number of full-time employees.

The models satisfy Gaussian linear model assumptions. We reject the heteroschedasticity hypothesis using the Breusch-Pagan test (statistic .02, pvalue .9). Normality was verified with the Shapiro-Wilk test (statistic .96, pvalue .11) as well as autocorrelation through the Breusch-Godfrey test (static 3.01, pvalue .08). In light of the strong correlation between Employees and Operating revenues, multicollinearity was tested. VIF for all variables is given below in Table 5.

Table 5 – VIF

Export	Oper. Reven.	Employees	Type	Group	Years
1.456	2.536	2.548	1.592	1.277	1.247

4. Conclusions

Our evidence suggests two main strategic directions in order to increase a company's profitability. The first is related to increasing sales to foreign countries (RQ.1). The second is aimed at increasing the dimensions of the firm (RQ.2).

Export activity is an important driver for firms in order to improve profitability because Italian wine is renowned for its quality all over the world, and for this

reason it is important for Italian wineries to exploit this reputational element to increase their sales. In order to evaluate the relevance of this result we have to consider the presence of bias factors that lead to the reduction of export intensity. For instance, the sample comprises mostly small and micro businesses in many cases not able to invest adequate resources (money and skills) to export. Due to the limited quantity of hectoliters produced, these companies can sell all their production on the domestic market. It should be kept in mind that exporting requires mandatory investments. These costs are often too high for a small producer.

Another point to keep in mind is the influence of internal taxation rules designed to help agricultural firms. A special relief on VAT is provided for farming companies who are able to retain part of this tax, increasing their markup. With particular regard to small companies these incentives help companies to be profitable in the internal market, but in some cases they discourage them from seeking an international dimension. because sales abroad do not include VAT.

RQ.2 is confirmed because larger companies are generally more famous because they invest in their brand. This enables them to increase the price of the same type of wine, for instance Barolo, compared to the same wine sold by small wineries. The market price of a specific type of wine can be strongly affected by branding. The same bottle of Barolo (comparable in quality and age) can cost 10 times more.

Small companies may set up affiliations or join in networks in order to reduce costs with scale economies and improve their market power.

RQ. 3 is verified in Models 2 and 3. Evidence shows a positive association between Export and ROS, indicating the ability of “made in Italy” to add value to products. At the same time, the higher values of ROS than ROI suggest that Piedmont wineries prefer a margins policy, all the more in older firms. This could be investigated further to evaluate the effect of tradition on wine prices.

As expected, ROT increases with larger companies, but also for young firms (a result confirmed by the opposite relation with ROS).

These results may encourage small producers to seek aggregation in order to increase the size of the company and opportunities to increase sales in foreign countries .

5. Limitations of the empirical study and future research

The results of this empirical study are based on a linear relationship, justifying the need for further analysis to identify the cause of the relationship. Our sample comprises 45 companies, observed for one year only: 2013. We will extend this analysis to a longer (2011-2014) period using panel data, a model that has been used in several previous articles on these topics. Another limitation is the fact that the data available did not enable testing of all the factors identified in the

review of the literature, which makes a complementary survey to collect other variables.

Future research may show whether our findings are also true of other Italian regions. Research could compare our results with French firms representing best export practice and success in the wine sector.

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Appendix 1 – Sample

1. Casa Vinicola Morando S.R.L.	2. F.lli Gancia & C. S.P.A	3. Casa E. Di Mirafiori & Fontanafredda S.R.L.
4. Luigi Bosca & Figli S.P.A.	5. Santero Fratelli & C. - Industria Vinicola Agricola Santo	6. Araldica Castelfero - Societa' Cooperativa Agricola
7. Giovanni Bosca Tosti I.V.I. S.P.A	8. Capetta I.Vi.P. S.P.A. - Industria Vinicola Piemontese	9. Terre Da Vino - S.P.A.
10. Duchessa Lia S.R.L.	11. Cantine Rasore S.R.L.	12. Cantine Dei Marchesi Di Barolo - S.P.A.
13. Cantine Volpi - S.R.L.	14. Michele Chiarlo S.R.L	15. Arione Bruno S.P.A.
16. Bosio S.R.L.	17. Cappa Angelo & Figli S.R.L.	18. Bersano Vini S.P.A.
19. Prunotto S.R.L.	20. Dezzani S.R.L.	21. Produttori Di Govone Societa' Agricola Cooperativa
22. Cantina Clavesana Societa' Cooperativa Agricola	23. Produttori Del Barbaresco Societa' Agricola Cooperativa	24. Braida Di Bologna Giacomo S.R.L.
25. Terrenostre - Cantina Dolcetto E Moscato Societa' Cooperativa Agricola Siglata Ai Fini	26. Cantine Monti S.R.L.	27. Cantine Povero - Cantine San Matteo - Antiche Cantine Borgo Lame Srl
28. Cantina Sociale Barbera Dei Sei Castelli - Societa' Cooperativa Agricola	29. Cantine Bava - Azienda Vitivinicola E Di Invecchiamento	30. Gianni Gagliardo Villa Montisel Srl
31. Coppo S.I.V.A.S. S.R.L	32. Cantina Sociale Di Rivalta Bormida - Societa' Cooperativa Agricola	33. Cantina Vignaioli Elvio Pertinace Soc. Coop. Agr.
34. Compagnie Vini Piemontesi Srl	35. Cantina Sociale Di Casorzo E Zone Limitrofe Societa' Agricola Cooperativa	36. Pio Cesare - S.R.L. Con Marchio Pio Cesare
37. Selectvini Srl	38. Azienda Vinicola Malgra' S.R.L.	39. Terre Miroglio, Tenuta Carretta, Malgra' & Villa Baglio S.R.L
40. Cantina Sociale Di Mombercelli E Paesi Limitrofi Societa' Cooperativa Agricola A Responsabilita' Limitata	41. Azienda Vinicola Palladino S.R.L.	42. Antica Cantina Boido S.R.L.
43. Cusmano Vini S.R.L.	44. Cantina Gigi Rosso S.R.L.	45. Cantina Del Dolcetto Di Dogliani Societa' Agricola Cooperativa Di Viticoltori Associati

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