Wine Farms between Specialisation and Diversification – Empirical Insights from Switzerland and Romania

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Abstract

While economists often emphasise the advantages of specialisation, power asymmetries between farmers and processors and risk mitigation are arguments for diversification in the primary sector. Swiss and Romanian wine farms are used to test the hypothesis that pressing grapes and processing them into wine will be financially advantageous for wine farms, while other diversification strategies are less promising. Survey results verify this hypothesis for Switzerland. For Romania, a winery on the farm and a positive attitude towards wine tourism are advantageous. Some amenities on the farm such as events or playgrounds allow higher prices to be charged, but this does not result in a better financial situation. Another success factor for both countries is the combination with arable farming. The conclusion is that targeted and well-adapted diversification strategies on wine farms can be recommended.

Key Words

wine tourism; grape pressing; comparative economics

1 Introduction

Ever since COASE (1937), the issue of rational limits of the firm between strong specialisation on a single activity and broad diversification, defined through the integration of many different fields of activities has been strongly debated in the strategic management literature. While both PORTER'S (1980) concept of competitive strategies and the capabilities approach (TEECE et al., 1997) clearly describe the necessity to establish a firm's competitive advantage, on such a general level it remains open what specialization and diversification can contribute to establish this advantage. In this debate, two contradicting narratives characterise the literature:

The constituting story among economists focuses on the merits of specialisation. The concept that overall benefits are increased if all actors specialise in fields involving their core competence has not only been demonstrated theoretically. TEECE (1980), TSE (2001) and HO et al. (2005) have also shown empirically for the company level how specialisation benefits profitability. The competing school which suggests diversification as a convenient business strategy usually takes risk management as its starting point (AMIT and LIVNAT, 1988; CARRERA et al., 2003; JAFFEE, 2006). If one sector is in trouble, it is good also to be invested in another one. For the farming sector, it is often reported that diversification frequently involves investment in value-added sectors (DE WOLF et al., 2007; HANSSON et al., 2010). Usually, there are significant power asymmetries between the actors in primary production and those in the latter parts of the chain (HUNTER, 2013; LEHMANN et al., 2016). This also makes farm diversification a tool for emancipation from industry and retailing. A meta study by BAUSCH and PILS (2009; 157) concludes that "there is no such thing as a universally valid nature of the diversification strategy – performance linkage".

As outlined in more detail in Section 2, the wine industry is a good example to study the effects of different dimensions of diversification. An empirical analysis in the wine sector about the pros and cons of farm diversification may be a convenient case in point for testing the merits of different strategies related to the choice of specialization versus diversification. The methodology for this will be outlined in Section 3. Section 4 presents the results and Section 5 offers conclusions.

2 Three Dimensions of Diversification in Wine Farming

As all farms, wine farms can diversify by entering different agricultural product lines like vegetable or sheep production. There is no reason, however, to

focus on wine farms when evaluating this kind of diversification. Grape production is logically (more or less) linked to three other dimensions of diversification which are to be described below.

All historic records of winemaking (eg. VINE, 1981; AIERKEN, 2016) depict the process of winemaking over many centuries as a rather diversified process in which grapes are processed and wine is, at least partially, marketed to consumers. This changed only around one hundred years ago, both through industrialization and the foundation of cooperatives engaged in wine production (COOK, 1995).

Today's specialised wine farms are good at producing grapes which they then sell to specialised companies or cooperatives which press the grapes. From that starting point, the most basic diversification strategy is that the vine producer presses the grapes herself and processes them into wine. Strictly speaking, these two steps may even be divided between different actors, but it is a reasonable simplification to describe the pressing and raising of the wine by the grape producer as a single joint dimension of diversification. This link is also considered as vertical integration in the literature. We know since WILLIAMSON (1996) that vertical integration saves transaction costs, while in most cases creating disadvantages in terms of production costs.

Vertical integration, however, was the 'natural' choice in winemaking over centuries. Historically, it therefore seems more appropriate to think of the division between grape production and wine production as a specialisation step that occurred in the process of an emerging division of labour in society. SÄLZER (2013) reports that German wine cooperatives began only relatively recently to press their members' grapes jointly. As mentioned, 30 per cent of Swiss grape producers are members of cooperatives that do the grape pressing. Although they are legally owners of the cooperative, it is still appropriate to, under these conditions, consider the winemaking as occurring outside the own enterprise.

This first dimension of diversification is one that can be justified by power asymmetries. The prevalence of such asymmetries between agricultural producers on one side and the industry on the other has been described extensively by CAIAZZA and VOLPE (2012). Thus, pressing grapes as a farmer may improve your competitive position and lessen your dependency on the industry or on cooperatives (COELHO and CASTELLO GIRON, 2017). A second aspect is provided by WILLIAMSON'S (1996) hint to transaction costs that can be saved. As production costs of pressing grapes are limited, they are unlikely to outweigh transaction cost savings. And a third aspect is brand building. It has rarely been possible for grape sellers to build a brand around their grapes. However, wine farmers are often able to establish their wine as a brand of its own (BOSHOFF, 2012). These three aspects should suffice to establish a first hypothesis:

H1: *Wine farmers pressing their grapes themselves will be financially more successful than farmers selling their grapes.*

A second dimension of diversification is direct wine marketing, defined as the direct delivery of wine to consumers. After grapes have been pressed, the wine can either be sold to wholesalers (including cooperatives), or bottled by the farmer and sold to private households. It is known since long (ROWE, 1989) that marketing of wines requires additional skills such as database organization. In recent decades, web-based abilities also have become essential (DWORAK and BURDICK, 2003; STRICKER et al., 2007).

As soon as wine farmers not only produce wine, but also bottle it and sell it directly to customers, they extend their degree of vertical integration. The literature generally takes a positive approach to this adding value by bottling and selling the wine (BRUNORI and ROSSI, 2000; TRAVERSAC et al., 2013). However, it makes clear that occurring costs exceed information costs by far, including investments in tasting rooms (ALONSO et al., 2008) or even visitor centres (OLSEN and THACH, 2008) as soon as the wine is marketed to the consumer, indicating the need for major investments in order to generate an attractive atmosphere for customers. In addition to all this, direct marketing by farms entails rather high transaction costs also on the customers' side (LÜTH et al., 2005).

As power asymmetries also exist between retailers and farmers (HANF et al., 2013), this strategy also potentially improves the terms of trade on which wine farmers can operate. Indeed, it has been shown that wines sold directly by the farmer generate higher prices than wines sold by other channels (SCHWEIGER and MANN, 2008). D'AMICO et al. (2014) also consider a stronger and personal relationship between producers and customers as a major advantage of direct marketing. The argument of transaction cost saving in the chain through vertical integration still applies. Due to the considerably increased costs associated with direct marketing, however, we formulate a careful second hypothesis:

H2: *Wine farmers marketing their wine directly to customers will have a smaller benefit from this than farmers pressing their grapes.*

The third dimension of diversification is involvement in the service industry with respect to tourism. There seems to be a general perception that adding tourist activities on wine farms may generate positive synergies for the business (DODD and BEVERLAND, 2001; LOCKSHIN and SPAWTON, 2001; BOJNEC, 2006), although empirical evidence on this is scarce. While cases of wine tourism are documented both for Romania (OLARU, 2012; HUDELSON, 2014; NEDELCU, 2014) and Switzerland (GRANDJEAN and PERRUCHOUD-MASSY, 2013), the empirical support for a profit increase through a link between winemaking and tourism has yet mostly been anecdotal.

Before accepting the existence of such a link, one should remember two important characteristics of the tourism industry: one is that it is polypolistic, so that there are usually no major power asymmetries to fear if wine producers and tourism enterprises collaborate in a region. The second characteristic of the tourism sector is the low value intensity. Chronically low wages in the tourism sector (LEE, 1998) and low skills of the typical employee (SINCLAIR and STABLER, 1997; LEJARRAGA and WALKENHORST, 2013) indicate that the sector adds relatively little value (ROBERTS and HALL, 2001).

In addition to the characteristics of the tourism sector, the link of touristic and wine production activities appears somewhat arbitrary and does not count as a step of vertical integration, as tourism is not part of the wine production chain. PALICH et al. (2000) emphasize that related diversification strategies tend to be more successful than unrelated ones. Thus, there is not too much reason to assume that integrating tourism activities on the wine farm would generate valuable synergies. Indeed, taking into account the old economic principle that specialisation, in this case, is beneficial, we formulate an even more careful hypothesis:

H3: *Wine farmers engaging in tourism activities will have a smaller benefit – if any – if compared to direct marketing.*

Table 1 summarizes the three hypotheses with its most important arguments, being the degree of vertical integration accomplished through the diversification strategy and the expected level of transaction costs connected with the strategy, motivating the different expectations in terms of performance.

Table 1. Summarizing diversification measures of wine farms

Hypothesis	Diversification measure	Integration aspect	Transaction costs	Expected benefit
1	Grape pressing	strong	low	strong
2	Marketing	strong	high	medium
3	Tourism	weak	high	weak

Source: own considerations

3 Method

Wine production systems differ widely between countries. In countries such as New Zealand and Spain, where wine producers mainly target international markets, marketing strategies aimed at regional customers will not be too promising beforehand for most wine farms. For the empirical test of the hypothesis, we therefore chose two countries in which wine production is a significant and traditional income source in the agricultural system, but in which exports play a minor role. This implies that diversification is a potentially attractive option, as specialization would not lead to gains from trade.

Apart from that, we chose countries as different with respect to their agricultural system as possible. This allowed to check how universally the hypotheses apply. Switzerland and Romania are extremely different, Switzerland being one of the world's richest countries and preserving a small-scale family-based farming system with farms averaging 19 hectares, while Romania is one of the transformation countries that is home to a bifurcated farming system with a number of large-scale commercial farms as well as subsistence smallholders. In Switzerland, 30 per cent of the wine is marketed through cooperatives which do not play an important role in Romania. These differences in agribusiness structures allow a distinction to be drawn between general findings and causal relations which are system-specific. At the same time, the two countries share a wine industry focusing on national consumers. Switzerland exports only around 1 per cent of its wine, because prices are not competitive by international standards, and Romania has lost significant global market shares in recent years, reducing its export share to only 2 per cent.

In the first few months of 2017, an identical survey was carried out in both countries, albeit by different means. In Switzerland, 1,000 randomly selected farmers (database from the federal administration) with grapes were sent paper questionnaires, 443 of which were returned. In Romania, 209 questionnaires were filled in by students and lecturers carrying out face-to-face interviews with farmers with grapes in wine regions visited by classes from the University. Writ-

Table 2. Descriptive statistics

Variable	Meaning	Scale	Mean Romania	Mean Switzerland
Dependent variables				
Prindex	Price index of sold grapes/ wine	From 0 to 100	19.5 (26.5)	39.1 (27.5)
Fin	"How do you consider your financial situation?"	From 1-very good to 5-very bad	2.41 (0.873)	2.67 (0.812)
Independent variables				
Grapes	Only sale of grapes on farm	1-Yes; 0-No	0.332 (0.489)	0.630 (0.490)
Direct	Share of wine sold directly to consumers	Percentage	67.4 (30.9)	48.4 (42.3)
Appartm	Overnight facility on farm	1-Yes; 0-No	0.10 (0.29)	0.03 (0.20)
Event	Public events on farm	1-Yes; 0-No	0.39 (0.48)	0.28 (0.47)
Winery	Winery on farm	1-Yes; 0-No	0.73 (0.45)	0.06 (0.33)
Playground	Playground on farm	1-Yes; 0-No	0.10 (0.30)	0.01 (0.13)
Winesell	Share of turnover by wine sales	Percentage	49.4 (34.5)	61.4 (39.5)
Wineland	Farm area covered by grapes	hectares	112 (394)	3.78 (1.44)
Arable	Farm area covered by arable land[1]	hectares	12.1 (41.9)	8.11 (5.32)
full	Full-time farm	1-Yes; 0-No	0.54 (0.50)	0.58 (0.49)
Yield	Agreement to "A high yield per acreage is crucial for my farm"	1-Totally disagree to 7- totally agree	6.08 (1.07)	4.22 (1.94)
Protour	Agreement to "Touristic activities on a farm strengthen wine sales"	1-Totally disagree to 7-totally agree	4.58 (1.69)	4.84 (1.55)
male	Gender of farm manager	0-female; 1-male	0.83 (0.34)	0.89 (0.33)
edu	Level of education	0-no degree to 3-university degree	2.18 (0.805)	1.85 (0.863)
age	Age of farm manager	Years	48 (10.8)	54 (11.5)

Standard deviation in parentheses; [1] excluding perennial crops
Source: own calculations

ten surveys in Romania have a low degree of acceptance, particularly among farmers. It has to be accounted for the fact, however, that a selection bias occurred through primarily approaching wine farms in Romania that were well visible in the village.

Table 2 displays the variables used in the analysis. To measure the economic performance of the farms, two different dependent variables were used. One was last year's price for the wine-related products they sold, placed on an index between 0 and 100. For farmers selling wine, the price per bottle (0.75 l) was put into four categories, and farmers were asked to give the shares of wine sales within the different price categories. The different categories were weighted so that they resulted in a number between 0 (all wine sold in the lowest price category) and 100 (all wine sold in the highest price category)[1]. Similarly, for the farmers only selling grapes, grape prices were normalised on a scale between 0 and 100. This was done independently for Romanian and Swiss farmers, due to the large price

[1] I=100*S1+67*S2+33*S3+0*S4 with SX being the share of wine sold in price category X.

differences (average grape prices, for example, were 0.36 €/kg in Romania and 3.24 €/kg in Switzerland).

While prices for wine and grapes were meaningful with respect to turnover, the variable used to obtain some measure of profitability was self-stated financial satisfaction, being rather similar for both countries. The price level could be explained by the method of ordinary least squares, while financial satisfaction was measured on an ordinal scale and was therefore explained by ordered logit analysis.

Hypothesis 1, referring to the profitability of self-pressing, was tested by the dummy variable "Grapes" which showed considerable differences between Switzerland where a solid majority only sold grapes, and Romania where two thirds sold wine. Therefore, a positive "grape" variable denoted the maximum possible degree of specialisation where farmers focused on crop production with no processing involved.

In order to test Hypothesis 2, farmers were asked which percentage of the wine was sold directly. Here again, Romanian farmers were more active than their Swiss counterparts. Different to "grapes", "Direct" was recorded as a relative variable, in order to allow for the possibility that (and to test the effect if) farmers entered direct marketing activities gradually.

For the test of Hypothesis 3, several variables had to be employed, as touristic activities on wine farms may include activities as diverse as events, lodging and catering. With "Protour", the general attitude to touristic engagements on wine farms was also included. This provided a rather holistic picture how open and active the farmer was in linking production and touristic activities.

Several control variables were included in order to avoid background variables. These included size of the farm both in terms of arable land and wine land. These two variables are also interesting from an academic point of view. Particularly for Switzerland, farm size is known to influence profitability considerably (JAN et al., 2014), whereas the existence of economies of scale is contested for viticulture in general (DELORD et al., 2015).

Size differences between Romania and Switzerland were as considerable as expected. The survey also took the degree of specialisation in wine into account, which was larger for Swiss than for Romanian farms. In wine production, there is a trade-off between high yields and high quality (MATTHEWS and NUZZO, 2007). In order to estimate the respondents' position in this aspect, they were asked about their priority for high yields (not for their actual yields). The descriptive statistics show that Romanian wine farmers more happily embrace high yields than their Swiss colleagues, an understandable distinction on the grounds of the ambitious Swiss quality strategy in the agricultural sector (DIETLER, 2012). Because it is known that age (MANN et al., 2013), gender (ESCALANTE et al., 2009) and education (JAMISON and LAU, 1982) may have an impact on profitability, these were also used as control variables. Finally, full-time and part-time farms follow rather different patterns in many aspects, so that this difference was also to be accounted for. The definition of part-time farms (more than 50 per cent household income from sources outside the farm) was identical for both countries.

4 Results

The correlation between the dependent variables were usually low. Only in exceptional cases (eg. a high correlation between "winery" and "Swiss"), it could be considered that covariance prevented the significance of results.

Table 3 depicts the variables used to explain the prices farmers receive for their grapes and wines, for the total sample and for each country individually. As the underlying index had to be constructed for wine and grape prices separately, the significance of the "grapes" variable has no explanatory power for the price, but rather controls for disequilibria in construct-

Table 3. Explaining wine prices

	Total	Switzerland	Romania
n	444	274	170
Grapes	10.8***	20.9***	-2.43
Direct	-0.312***	-0.158***	-0.219***
Appartm	0.218	-4.33	2.91
Winery	3.78	3.66	-1.00
Event	6.28**	-0.681	18.6***
Playground	15.4***	26.9**	8.26*
Protour	0.321	0.148	-0.176
Winesell	0.103***	0.0913**	0.217***
Wineland	0.00871**	0.00712	0.00259
full	-3.17	-5.38*	-2.09
Yield	-1.56**	-1.70**	-2.33*
male	5.48*	2.49	2.57
edu	2.90**	2.37	6.11***
age	0.00675	-0.0224*	0.0188***
Swiss	7.21**		
R^2	0.38	0.31	0.69

* p<0.1; ** p<0.05; ***p<0.01
Source: own calculations

ing the index. The significance for Switzerland shows that this is important. The same applies to the "Swiss" variable, as index calculations followed different methods in each country.

However, the strong significance of the "Direct" variable certainly has explanatory power. For both countries, a higher share of wine marketed directly to consumers is apparently accompanied by significantly lower wine prices.

For touristic activities, the evidence is mixed. Activities generating revenues on their own (such as lodging) do not have spillover effects to wine prices. Other amenities on the farm which are not charged to visitors, such as events in Romania and playgrounds in both countries, allow higher wine prices to be charged. Below, it has to be checked whether these higher prices barely cover investment costs or lead to an improved financial situation. A friendly attitude towards wine tourism has no impact on the level of wine prices. Taken together, the touristic variables have a mixed effect and do not unequivocally increase wine prices and even less farm profitability. This general finding applies to both countries.

Table 4. Explaining financial difficulties

	Total	Switzerland	Romania
n	438	271	167
Grapes	0.457*	0.763**	0.267
Direct	-0.00318	-0.00446	-0.00584
Appartm	-0.359	-0.908	0.454
Winery	-0.418	0.144	-1.02**
Event	0.0213	0.316	-0.254
Playground	-0.443	0.562	-0.686
Protour	-0.0576	0.0293	-0.207*
Winesell	-0.00566	-0.00492	-0.0105
Wineland	-0.00237***	-0.00214	-0.00204*
full	-0.320	-0.301	-0.0405
Arable	-0.0151***	-0.0243**	-0.0131**
Yield	-0.0979	-0.0738	-0.0242
male	-0.328	-0.426	-0.232
edu	-0.211	-0.168	-0.255
age	0.000570	-0.00109	0.0111
Prindex	-0.0209***	-0.0213***	-0.0250**
Swiss	0.128		
Pseudo R^2	0.13	0.06	0.25

* p<0.1; ** p<0.05; ***p<0.01
Source: own calculations

Partly, the results show that the control variables had an important role to play. This applies, for example, to the degree to which farms are specialised in grape production and wine selling. Specialised farms, in both countries, achieve higher prices than farms for which this part of their business is only a sideline. A higher acreage with wine has a similar effect. On the other hand, Swiss full-time farms tend to sell their wine and grapes for lower prices.

The "Yield" variable fulfilled its expectation. Farmers seeking to achieve high yields receive less money for their wine than farmers preferring to rely on quality. While the level of education only plays a (price-enhancing) role in Romania, the effect of the age variable is noteworthy as it shows how cultural factors matter. In Romania, where seniority may weigh more strongly, older farmers charge higher prices for their wine. In Switzerland, where young entrepreneurship may be emphasised more strongly, the opposite effect occurs.

Table 4 shows explanatory factors for the self-rated financial situation. For Switzerland, this situation is better for farmers producing their wine themselves. Apparently, power relations in Romania differ from Swiss ones, so that wine making has no significant effect for Romanian colleagues. For Romania, Hypothesis 1 therefore has to be rejected, while this is not the case for Switzerland.

In all three equations, the sign for direct marketing points towards an improvement in the financial situation, but it cannot be concluded that direct marketing has a significantly positive effect on the financial situation. Combined with the insights from Table 2, this means that, at least for Switzerland, Hypothesis 2 cannot be rejected.

The five variables used to test the impact of tourism on the financial situation and therefore Hypothesis 3 show mixed evidence, if any. There is some (weak) evidence that Romanians believing in synergies between tourism and wine production fare better than others. However, their Swiss colleagues show, without significance, the opposite sign and a higher coefficient. The signs of the other variables differ, and the variables mostly show no significance. This does not allow us to reject Hypothesis 3.

The exception to this finding is the role of wineries in Romania. The existence of a facility where customers can taste and buy wines seems, under Romanian circumstances, to be advantageous for the farm's financial situation.

Again, the additional control variables play their role where needed. The economies of scale in farming

can be demonstrated for both countries, particularly when it comes to arable land. This, finally, also indicates that a so far neglected dimension of diversification affects the financial situation positively: wine producers seem to fare better if they also pursue arable production. But also with respect to viticulture, the existence of economies of scale should not be excluded.

The clear significance for the "Prindex" variable indicates that producers obtaining higher prices fare better, hardly surprisingly, than those with lower prices. It also shows that the quality of the price index for Romanian and Swiss grape and wine is methodologically sound.

One final methodological remark: noticeably, the share of variance which could be explained is, in both equations, considerably higher for the Romanian participants than for the Swiss ones. This may be caused by the different sampling procedures. The written surveys in Switzerland may have been filled in with less thought and effort than answers that were given to the Romanian interviewers in the room.

5 Discussion and Conclusions

The empirical evidence shows that farm diversification on wine farms is neither a panacea nor a harmful distraction from the advantages of specialisation. It should be emphasised, however, that the results are not neutral. They show no disadvantage of diversification. Neither wine farmers pursuing direct marketing nor those offering lodging fare worse than their colleagues. The survey has, however, shown systematic advantages of diversification in three aspects:

- For the Swiss case, it showed that farmers selling grapes fare worse than farmers pursuing vertical integration by pressing and processing their grapes themselves. Grape sellers are usually price takers (even if they deliver to a member-owned cooperative), and narratives in Switzerland are that even payment modalities are disadvantageous (farmers often receive part of their money many months after delivery). Farmers producing their own wine, on the other hand, are often able to create their own brand, thereby generating a monopolistic advantage.
- Romanian wine farmers open to touristic activities appear to fare better, particularly if their activities circle around their strength of winemaking. Other activities less related to winemaking, such as public events and playgrounds, allow farmers to charge higher prices for their wine. This, however, does not translate into a better financial situation.
- Farm size matters, but less so for the area under vines, and more so for the arable land. This fact indicates that combining the production of wine and arable crops may be an advantageous strategy.

The differences between the national regressions may be explained by the strong differences between the countries. Tourism in Romania, for example, is more in an infancy stage than in Switzerland, so that non-specialized enterprises like wine farms may have better opportunities.

The share of the variance which is not explained, particularly in the case of financial well-being, remains high. It is well possible that additional details on the geographical allocation of the farms, of labour organization, of co-op membership or of experiences of the farm manager would have provided a more comprehensive picture. The unexplained share of the variance, however, also indicates that the individual circumstances on wine farms play a large role. Indeed, the patterns identified and outlined above should, therefore, never be followed blindly. The relation between available resources and existing opportunities for each particular wine farm should be the most important criterion when deciding whether to adopt one or more of the diversification strategies available.

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