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A RESTATEMENT**

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Wine Production in Québec: a restatement *

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Abstract :

Wine production in Québec over the last twenty years has grown rapidly with an increased interest for diversified products in terms of quality and price. The growth of supply is related not only to the number of producers but also to the increased varieties of wines proposed. This paper proposes an economic analysis of wine production in Québec by analyzing the concentration level of producers. The level of competition has increased significantly between 2008 and 2105 due to an increasing number of small wine producers. An index of relative firm position in the market based on relative prices is calculated and we demonstrate that a high price strategy is significantly related to the size of the vineyard rather than the age of the domain or the number of wines produced.

Keywords: Wine production, Market concentration, Price index, Québec

JEL classification: L11, L15, L66, D21

Note * This paper is a restatement of a presentation made in 2009 at the “Bacchus Goes Green” UNESCO conference (Outreville, 2009).

Wine Production in Québec: a restatement

1. Introduction

Are they wine producers in Québec? 30 years ago, people just laughed at the question. But Canadian wine making is not a recent phenomenon. In 1535, Jacques Cartier found wild grape “*Vitis riparia*” in abundance on the island he named Ile de Bacchus (later known as Ile d’Orléans) and in 1608, Samuel de Champlain planted French varietals, including “*Vitis vinifera*”. Later, in 1811, Johann Schiller known as the father of the Canadian wine industry, applied his expertise from Rhine winemaking to 400 acres of grapes planted in the Niagara region of Ontario. The first commercial winery was named Vin Villa on Pelee Island in 1866.¹

In 1864 the Quebec government began encouraging the wine grape culture with grants for experimentation on local grapes varietals and more rustic hybrids from the United States. By 1919 all provinces went dry under Prohibition except Quebec which banned the sale of all alcohol but beer and wine. Quebec remained the sole region of North America to escape total prohibition. However, it is interesting to note that Canadian law made it illegal to sell but not to manufacture liquor while during the same period in Québec a combination of pressure from anti-viticulture political-religious groups and decreased support from the state would lead to almost the abandon of wine production. The surprising result was the proliferation of small distilleries in Ontario and other provinces but Québec.²

In 1921, the *Alcoholic Beverages Act* was passed and the *Commission des liqueurs du Québec* was established to conduct the trade of beer, wine, cider and spirits. This state-owned corporation still exercises a legal monopoly on all distribution of alcohol in Quebec under the name of *Société des alcools du Québec*. It is only in 1985 that the first wine growers obtained the right to sell their production. In 1987, the first few Québec wine growers formed the *Association des Vignerons du*

¹ <http://www.winesofcanada.com/beginings.html>

² For a history of wine production in Québec, see Dubois and Deshaies (1997), Lasserre (2001) and H. Velasco-Graciet and F. Lasserre (2006).

Québec. Early successes at developing quality products prompted many others to follow and the 1990s saw the establishment of several vineyards all over southern Québec.

The wine consumption in Québec over the recent period has also grown rapidly with an increased interest for wines. It is the purpose of this paper to describe recent trends in wine production in Quebec province. The paper is a restatement of a presentation made in 2009 at the “Bacchus Goes Green” UNESCO conference (Outreville, 2009). The paper is structured as follow. The following section 3 describe the sector in terms of geographical conditions and types of vines produced. In section 4 we analyze the growth of the sector over the past years by producers and by regions. In the next section we propose an economic analysis of the sector by calculating the concentration level and a measure of price positioning of the wine producers. The last section discusses the limits and possible extensions of the analysis.

2. General description of the viticulture

Québec is the least likely of all Canadian wine regions. The south of the province is a fertile region where fruits grow naturally and abundantly. However, the four-month long winter freezes the land deep enough that most varieties of European vines do not survive. In the 1980s, Quebec wine growers started planting varieties known for their resistance to below-zero temperatures. Temperatures in Quebec are still cold in April compared to France for example but nevertheless the number of hours of sunshine is comparable to the situation in Alsace, a well renowned region for white wines (Table 1).³

The centre of the province’s winegrowing zone is the old town of Dunham. Average sunshine hours during the growing season in Dunham are 1150 (in Burgundy there are 1315; Niagara has 1426 and the Okanagan Valley 1423), but topographical features create highly localized warm spots that allow the hardiest vines to survive although during the winter months the vines have to be covered to protect them from the fierce cold.

³ Note that the Eastern Townships’ wine region is on the same latitude (45°) as Lyon in France and Québec city is on the same latitude as Beaune (Burgundy).

During the early years, from 1982 to 1992, vineyards mainly emerged in the southern part of Québec province but from 1992 onwards, new vineyards started commercial operations in the northern side of the Saint-Laurent River and in Québec city region. Today, vines are cultivated and production is significant in seven regions. They are the Montérégie, Cantons de l'Est (Eastern Townships), Center of Québec, Québec region, Basses Laurentides (Lower Laurentides), Lanaudière and more recently Bas-Saint-Laurent (Picture 1).

Table1: Weather conditions, comparison between Québec and France

Weather conditions in Celcius degrees and hours of sunshine

Weather station	Lowest recorded temperature	January average temperature	April average temperature	April-September Hours of sunshine
Montréal	-37.8	-10.3	5.7	1338
St Jean sur Richelieu	-37.8	-10.2	5.4	1269
Rougemont	-37.8	-10.4	5.4	1274
Québec	-36.1	-12.8	3.3	1249
Bordeaux	-15.1	5.8	11.3	1375
Dijon	-20.2	1.6	9.8	1308
Nantes	-16.1	5.4	10.4	1342
Strasbourg	-21.2	0.9	9.6	1192

Source : Lasserre (2001), Environnement Canada, 1971-2000 ; Météo France, 1999.

Picture 1: The regions of wine production



Source: www.vignerons-du-quebec.com/

The grape varieties cultivated in Québec, both white and red, all have common qualities needed for resistance to below-zero winter temperature resistance and short life cycle (fruit maturation before October). In 1996, Québec’s wineries produced mainly dry white wines (52%) and in 2015 the share between reds and whites is split 50-50. Overtime, the number of different wines increased from around 70 to more than 260. Dry wines (red, white or rosé) account still for more than 60% of the number of wines produced, followed by fortified wines (red or white) and Ice wines. Other types of wines produced are late harvest, sweet wines, appetizers and sparkling wines.

In reds varieties, Frontenac, Maréchal Foch and Marquette are popular grapes in all regions and Pinot Noir is still a minor variety in the southern regions. In white varieties, Vidal and Seyval Blanc are grown in all regions while Chardonnay is mainly experimented in the southern regions (Table 2).

Table 2 : The most popular grapes in Québec, % average 2012-2015

Grape varieties - reds		Grape varieties - Whites	
Frontenac Noir	10.10%	Vidal	8.80%
Marechal Foch	5.20%	Seyval Blanc	8.80%
Marquette	6.20%	Frontenac Gris	5.60%
St Croix	3.40%	Frontenac Blanc	4.10%
Seyval Noir	3.40%	Vandal-Cliche	3.40%
Sabrevoix	3.20%	Saint Pépin	3.50%
De Chaunac	1.50%	Lucie Kuhlmann	2.30%
Pinot Noir	1.30%	Chardonnay	1.90%

Author’s calculation; Source: www.vignerons-du-quebec.com/

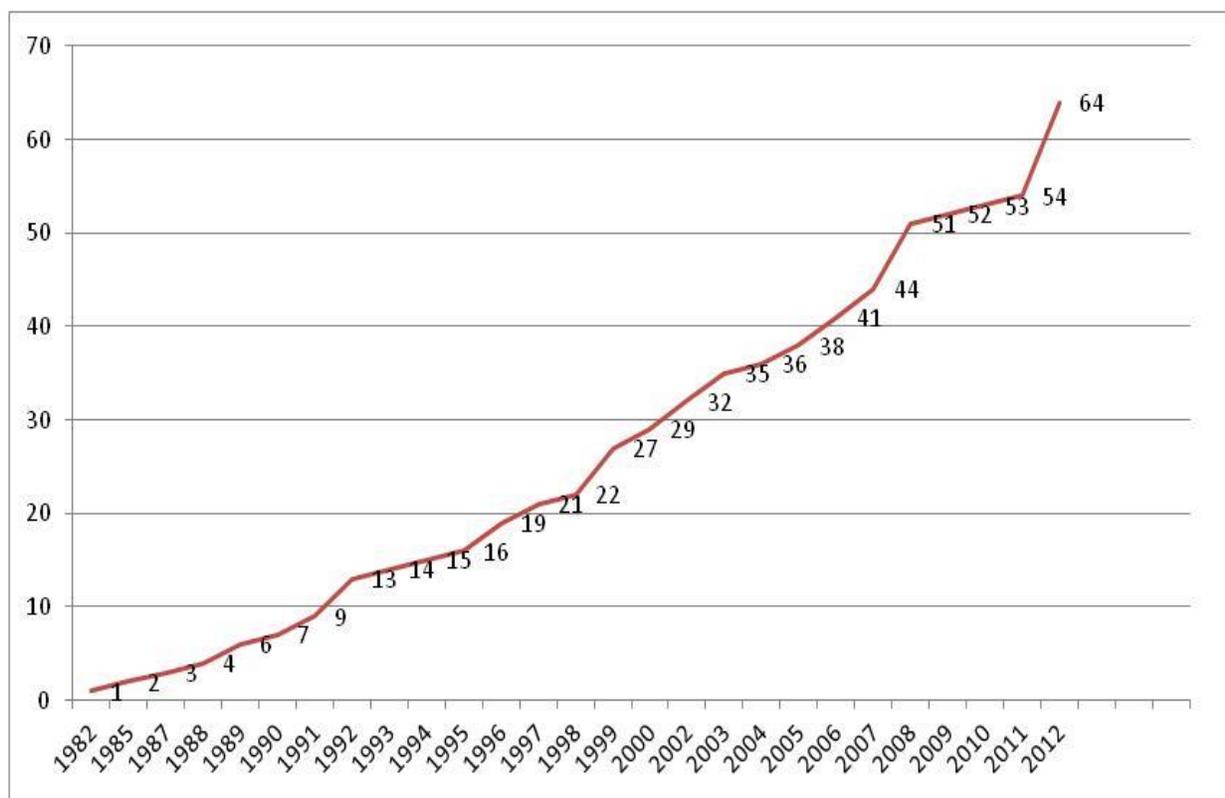
The culture of several types of vines is the norm; up to a dozen for some vineyards, with an average of five varieties. Diversity proceeds partly from the experimentation and research of vines offering the best quality and taking into account the constraints of the climate. Another reason for this current practice is the necessity to propose to potential clients a diversified range

of quality wines and original tastes to compensate for the weaknesses of harvests of some vines in bad climatic years.

3. The growth of the productive sector

The number of wine producers was limited to a less than a dozen until the beginning of the 90s and recorded an accelerated increase in the number of new vineyards from 16 in 1996 to over 60 in 2012 (Figure 1). However, this figure accounts only for the vineyards members of the *Association des Vignerons du Québec* (AVQ) created in 1987. In 2006 a new association is created, i.e. *Les Vignerons Indépendants du Québec* (VIQ) (Independent Association of Wine Producers) which accounts today for 16 members and a significant number of producers are not registered in these two groups.

Figure 1: The growth in the number of producers' members of the AVQ, 1982-2012



Source: www.vignerons-du-quebec.com/

The first two oldest vineyards are recognized to be *Les Côtes d'Ardoise* and *L'Orpailleur* in the Dunham County and are still among the most important vineyards. There is a lack of information on the number of failures during these years but at least eight vineyards among the twenty that were set up during the early years and still in operation in 1996 are closed today.⁴

At the end of 2015 the sector account for a total of 110 vineyards but it is important to mention that at the end of 2016, 8 domains are closing or are for sale. The full list of vineyards is presented by cantons in appendix 1. By comparison, in 2015, 250 wineries are operating in British Columbia and 160 in Ontario.⁵ Québec is in the third place in Canada. The producers are mainly located in and Eastern Townships (Cantons de l'Est) where the first vineyards were introduced and Montérégie which is today the most important region in the number of producers (Table 3). Montérégie is also the main region for cider production and several producers are both wine and cider producers (Cloutier and Détolle, 2017).

Table 3: Wine regions in Québec and number of producers

		2015	2008
Basses			
Laurentides		14	10
Montérégie		32	22
Cantons de l'Est		30	27
Lanaudière		11	7
Centre du Québec		7	3
Québec		12	12
Bas St Laurent / Lac St Jean		4	4
Total		110	85

Source: Author's calculation

⁴ Among these are two renowned vineyards: one of the oldest domains, *Les Arpents de Neige* closed in 2002 and *Dietrich-Joss* closed in 2003 after the sudden death of the owner Victor. This vineyard was one of the first experimenting ice-wine production with success in Québec. In 2003 the vineyard was sold and the vines replaced by corn. It is probably the saddest story of wine production in Québec since its early years.

⁵ British Columbia Wine Institute, 2016 Annual Report and VQA Ontario, 2016 Annual Report.

The Québec wine industry is centered on “small vineyards”. Size of the vineyards ranges from 24 ha for largest to 1.3 ha for smallest and only the 12 largest are over 10 ha (Table 4).⁶ At the beginning of the year 2000, exploited total surface area was 165 ha, an average 5.0 ha by exploitation. In 2015, the area of production is over 500.0 ha with a similar average size per vineyard of 5.1 ha, because the average size of the most recent vineyards (since 2008) remains far below the average. The aggregate output grew from 303,000 bottles in 1995, almost doubled in 2000 and increased to about 1.2 million bottles in 2012. Only a few of the oldest wineries produce more than 10,000 cases of wine annually, with an average being less than 2,000 cases.

Table 4: The 12 largest vineyards, year of establishment, ha and number of plants

Name	Year	Region	ha	Nb of plants	Nb of cases	Nb of wines
L'Orpailleur	1982	Cantons de l'Est	24	120000	20000	10
Carone	1995	Lanaudière	20	..	2500	16
Le Cep d'Argent	1989	Cantons de l'Est	18	60000	10000	12
Riviere du Chene	1998	Basses Laurentides	16,5	..	12000	11
Les Bromes (leon Courville)	2000	Cantons de l'Est	16	80000	6000	17
Gélinas	2001	Lanaudière	16	32000	2500	9
Domaine St Jacques	2007	Montréal	15	..	5000	10
Vignoble Coteau Rougemont	2007	Montréal	14	..	..	14
Domaine du Ridge	1999	Cantons de l'Est	13	85000	5800	10
Domaine de L'Isle de Bacchus	1997	Québec	12,6	35000	3000	8
Les Cotes d'Ardoise	1980	Cantons de l'Est	11	46000	3500	6
Gagliano (ex Blancs coteaux)	1989	Cantons de l'Est	10,5	43000	3500	15

Note: .. means not available

On average, in 2015, the number of products (the different types of wine produced) is close to 9 per vineyard with the larger producers accounting for the larger number of products. The price structure of the different products ranges from \$20/liter for dry wines (on average \$15 per bottle) to more than \$ 47/liter for late harvest and \$155/liter (on average \$31 for a bottle of 200ml) for white ice wines (red ice wines are rare products only produced in three vineyards). The

⁶ The domain Le Royarnois in the Québec region was one of the largest with 14.0 ha but was closed recently.

comparison with 2008 shows a modest increase in the average price of wines with the exception of ice wines (Table 5).

Table 5: Prices per liter, 2008 and 2015

Type of wine	Price/liter, 2008	Price/liter, 2015
White (dry)	\$ 17.7	\$ 20.5
Red (dry)	\$ 19.3	\$ 21.6
Rosé (dry)	\$ 17.2	\$ 20.1
Quality white	\$ 32.0	\$ 27.2
Quality red	\$ 26.7	\$ 28.8
Sparkling wine	\$ 40.0	\$ 33.7
Late harvest	\$ 44.6	\$ 47.5
Ice wine (white)	\$ 131.7	\$ 154.3
Fortified wine (red)	\$ 34.4	\$ 40.4

Source: Author's calculation

4. Economic analysis of the sector

Traditionally, the most usual way of measuring the level of competition in a market is to calculate the market share of each producer. The first static measure is the well-known Herfindahl-Hirschman concentration index calculated with the market shares (q_i) of all companies in a market:

$$H = \sum [q_i]^2$$

The advantage of this measurement is that it makes it possible to calculate a "number equivalent" of companies ($N^* = 1/H$) where N^* is the potential number of companies of the same size which could exist on the market for a given degree of concentration.⁷

As competition increases, profits of the most efficient firm will rise more than the following efficient firm. The hypothesis is similar to the Relative Profit Differences measure introduced by

⁷ In the empirical literature, several measures of competition are used among which the Herfindahl index and the Price Cost Margin (or Lerner index) are the most popular ones.

Boone (2008a and 2008b). In order to test this alternative hypothesis, the second measure is Kwoka's (1977) Dominance index:

$$D = \sum [q_i - q_{i+1}]^2$$

This measure emphasizes the gap between successive firms when they are ranked by size. The values of this measure range from 1 to 0, with the former value indicating a monopolistic market. Conversely, the closer to zero the measure is, the lower is the power of any single company.

The analysis applied to the wine producers' market in Québec shows that the level of concentration for both measures has decreased over the period 2008 to 2015 due to a significant increase in the number of new small producers during the period. The number equivalent of producers has increased by 33% over the period and the level of concentration is largely lower for all measures of concentration in the two other provinces in Canada (Table 6).

Table 6: Market structure for Québec compared to other producing regions in Canada

	Quebec 2015	Quebec 2008	Okanagan Valley 2008	Niagara Peninsula 2008
Nb of wineries	93	68	115	72
Herfindah index H	0.0179	0.0241	0.0428	0.0254
Nb equivalent N*	56	42	23	39
Dominance index D	0.00012	0.00022	0.0076	0.00070
Note: The number of wineries is limited by data availability				

Since all firms are producing several types of wines, the next step in the analysis is to examine the relative price of each product of a firm compared to the average price in the market. An index of relative firm positioning in the market is calculated as the average of ratios between firm price for each wine and the sample average price for the same wine category (Coppola et al. 2001).⁸ According to this index, a firm with an index value greater (lower) than 1.0 is positioning itself above (below) average prices.

⁸ A weighted index was not calculated due to lack of information on the share of each wine on total firm production.

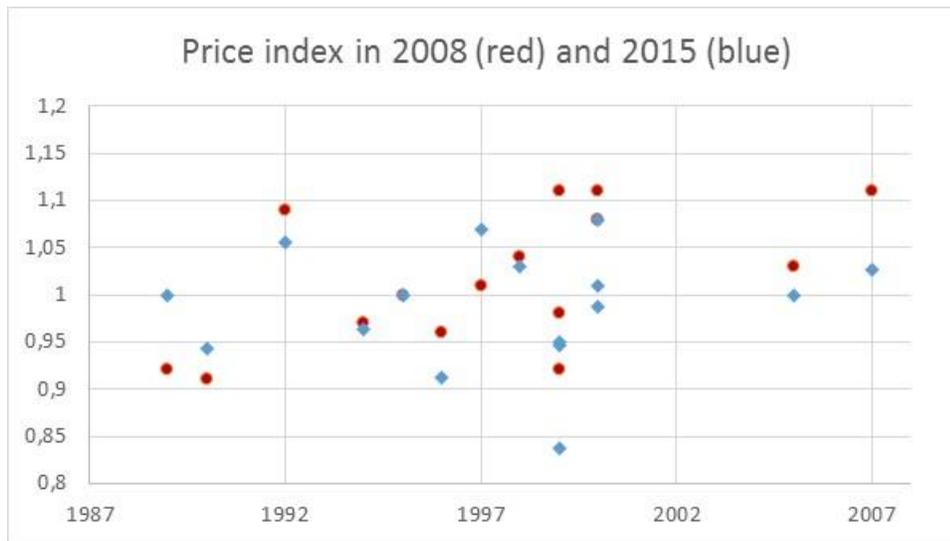
A quick observation of the data shows no relationship between the index and the region of origin of the firm. A high price positioning can be related to the age of the vineyards, assuming that new small firms would prefer to enter the market in a niche market of quality wines. Figure 2 shows that the largest number of producers is located in terms of price index around the average 1.0 line with a maximum price premium of 10%. It is interesting to note that the most recent vineyards created in the last 6 years (black dots) are located below the average line.

Figure 2: Index of firm position by age of the firm (years of production)



A comparison of the price index calculated for 2008 and 2015 for the same wine producers shows a tendency to move towards the average line, i.e. producers over time are adjusting their price strategy closer to the average price of the market for their products (Figure 3).

Figure 3: Comparison of the price index for firms in 2008 and 2015



A high price positioning can be related to either 1) a small firm carrying out a quality strategy based on a niche market, or 2) a large firm selecting high value wine market. On the other hand, a low-price positioning can be referred to large firms aiming at an average standard quality and applying a low-price strategy or, on the contrary, to more small, marginal and traditional firms. The relationship between the index and the size of the vineyard (measured in ha) shows that larger vineyards tend to be located over the average line (Figure 4).

Figure 4: Index of firm position by size of the firm (ha)



A wine producer’s identity is affected partly by the strategy of its products diversification. If a firm’s line of products is not coherent in quality, its organizational identity will become incoherent and its products may be devalued (Roberts and Reagans, 2007). Following this logic, it is usually hypothesized that low product diversity in a winery constructs a coherent identity, hence increases wine price. The relationship between the index and the number of wine produced shows that firms producing more than 10 different wines are generally pricing on the average or above the average prices (Figure 5). This analysis is confirmed when we adjust the number of wines with the size of the domain (Figure 6).

Figure 5: Index of firm position to the number of wines produced



Figure 6: Index of firm position by Size/number of wines produced



What determines the price of a bottle of wine? The question is obviously not new but the most recent papers dealing with this subject tend to go beyond a simple competitive market where the prices are the result of supply and demand (Chiffolleau and Laporte 2004). The price-quality debate has long been controversial (Lecocq and Visser, 2006) and many papers look at the determinants of prices and are reporting estimation results of hedonic price functions where wine's price is determined by grape varieties, climate influences and by the reputation or perceived quality (See Outreville and Le Fur, 2017 for a survey).

Many factors impact the price of a wine including production costs but ultimately, the pricing strategy used for marketing wines should be a function of the demand for wine because consumers are not directly concerned with the cost structure inherent in producing a wine. Reputation, assuming that with age the vineyard has built a reputation, provides an important signal about the quality of the actual products and contributes to higher wine prices (Benjamin and Podolny, 1999). This analysis is of particular relevance for small or new wine producing regions which lack a reputation background. A new wine producer will take into account the consumer perception about the price-quality relationship and will position his wine in a strongly competitive market where the price remains an obvious commercial argument to signal the quality of a wine (Chironi and Ingrassia 2009).

However, wine price exhibits a great variability among producers even for very similar products and the lack of information and the difficulty of developing a credible reputation may lead to price practices that do not correspond to the real quality value. A high price positioning can also be related to a strategy based on a high value wine market or niche market. On the other hand, a low price positioning can be referred to firms aiming at an average standard quality and applying a low price strategy. Again, these issues are of particular importance when looking at characteristics that may explain the pricing strategy of wine producers in a new and small wine region.

The purpose of the empirical analysis is to examine the relationship between firm's strategies (positioning) and factors explaining this position in the market. In particular we considered some

aspects related to the characteristics of the firms and the perceived quality of wine produced. The model is expressed by the following equation:

$PPI_i = f(S_i)$ where:

PPI_i represents the price-position index of the firm,

S_i is the set of attributes defining the firm or the characteristics of supply (age, size, number of wines produced).

The model has been tested on a data set of only 40 firms for which the price-position index could be calculated. Using these observations a linear multiple regression analysis has been carried out. Results are presented in Table 7 for the set of S_i variables. The region of origin has been omitted since results were not significant. Outreville (2011) demonstrates a positive and significant relation between price and the variable related to the perceived quality of wines (the jury grades or medals). Unfortunately these data on quality are not available in 2015 and the analysis cannot be replicated.

Table 7: Regression results for the Price-position index in 2015 and average value 2008-2015
 Dependent variable PPI (Index)
 Method: Ordinary Least Squares

Variables	Price index calculated in 2015			Average price index 2008-2015		
	Coeff	Std Error	T-statistic	Coeff	Std Error	T-statistic
Constant	0.918	0.038	23.89	0.934	0.042	22.47
Age	0.00018	0.0015	0.12	0.00047	0.0014	0.32
Size (ha)	0.0036	0.0023	1.49 *	0.0037	0.0025	1.472 *
Nb of wines	0.0039	0.0047	0.849	0.0029	0.0049	0.689
R-squared/ F-statistic	0.23/3.064			0.18/2.659		
Note: * significant at the 0.1 level,						
Variables	Price index calculated in 2015			Average price index 2008-2015		
	Coeff	Std Error	T-statistic	Coeff	Std Error	T-statistic
Constant	0.939	0.0258	36.39	0.955	0.0268	35.65
Age	0.00046	0.0015	0.29	0.00033	0.0015	0.21
Size/ Nb of Wines	0.0464	0.0215	2.153 **	0.0427	0.0224	1.911 **
R-squared/ F-statistic	0.16/3.072			0.26/15.9		
Note: ** significant at the 0.01 level,						

Contrary to expectations, the size of the domain is the only significant variable in the analysis. This is true for the index calculated in 2105 but also for the average value of the index calculated with data available in 2008, 2010 and 2015. Firms producing a fewer number of products are not significantly positioning themselves in the high price segment of the market. The same is true for the age of the firm (or the number of years of production). However, as mentioned before, the most recent vineyards created in the last 6 years are located below the average line. Dropping these data from the analysis does not change the results.

As explained in the previous section, a high price positioning can also be related to either a small firm carrying out a quality strategy based on a niche market, or a large firm selecting high value wine market. Also, in the presence of economies of scale, size might be a proxy for the production costs. Larger wineries may have a cost advantage and may be able to produce higher quality wines at the same marginal cost as small wineries. If this is true, then the variable (size/nb of wines) would be negatively correlated with production costs and enter positively in the regression. This is verified in the second part of table 7.

5. Discussion and conclusion

The objective of the paper is to analyze some of the factors related to the characteristics of a vineyard that may explain the price strategy of wine producers in a relatively unknown and small wine region, i.e. Québec province in Canada. Wine production in Québec over the last 20 years has grown rapidly but it remains a marginal phenomenon and practically does not generate any income outside the province. Furthermore, contrary to the existing literature on the determinants of prices, wines lack reputation assessment.

The growth of supply during the recent period is mainly related to the increasing number of small wine producers and the level of competition has increased significantly between 2008 and 2105. But the growth of supply is also related to the increased varieties of wines proposed. An index of relative firm position in the market based on relative prices has been calculated and we

demonstrate that a high price strategy is significantly related to the size of the vineyard rather than the age of the domain or the number of wines produced.

This analysis has important potential implications. Wine regions in Canada have recently defined quality standards and groups, such as the Vintners Quality Alliance (VQA) in British Columbia and Ontario. VQA membership is not prevalent in Quebec. The apparent reason is the lack of interest in defining standards that are appropriate for Quebec wines which have a style different enough to warrant its own sets of standards. The choice of grapes has not been imposed and most vineyards have planted vine species that are better adapted to cold climates. Because the grapes are different, the wines are different and quality standards is impacted. However, it is likely that as Quebec wines and markets develop, quality standards will have to be established.

The Québec wine sector remains an internal phenomenon in Québec and practically does not generate any income outside the province. However, the implications on the development of tourism activities are important and make it possible to partly understand the growth in the number of producers in some regions of Québec province like the Eastern Townships and Montérégie areas which are less than one hour drive from Montréal.

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Appendix 1: List of the vineyards in Québec province by region at the end of 2015

Name	Year	No	Region	ha	Nb of plants	Nb of wines	Nb of cases	AVQ	VIQ
La Roche des Brises	1993	1	Basses Laurentides	8	37000	8	4600	0	0
Domaine des Ducs	1995	1	Basses Laurentides	2.6	10000	5	500	0	0
Les Negondos	1996	1	Basses Laurentides	3	..	8	900	0	0
Riviere du Chene	1998	1	Basses Laurentides	16.5	..	11	12000	1	0
Domaine Mont Vezeau	2002	1	Basses Laurentides	6.5	9000	4	1000	1	0
La Romance du Vin	2003	1	Basses Laurentides	3.3	10000	8	600	0	0
Clos Baillie	2004	1	Basses Laurentides	4	..	4	500	0	0
Les Vents d'Ange	2006	1	Basses Laurentides	3	..	6	..	1	0
Sainte Eulalie	2008	1	Basses Laurentides	3	6000	7	600	0	0
Les Meteores	2008	1	Basses Laurentides	2	..	..	500	1	0
Vignoble d'Oka	2009	1	Basses Laurentides	2	..	..	350	0	1
Vignoble Côte St Charles	2012	1	Basses Laurentides	3	8000	6	..	1	0
Vignoble Sainte Angelique	2012	1	Basses Laurentides	3	..	4	..	0	1
Vignoble les 1001 vignes	2015	1	Basses Laurentides	3	..	..	..	1	0
Angell *	1985	2	Montérégie	7.2	..	..	..	0	0
Morou *	1987	2	Montérégie	4	..	9	1100	0	0
Le Royer St Pierre	1989	2	Montérégie	7	..	9	2500	0	0
Les Pins	1989	2	Montérégie	2	..	..	600	0	0
Le Marathonien	1994	2	Montérégie	2	7000	7	900	1	0
Vignoble Sous les Charmilles	1995	2	Montérégie	2.2	..	..	..	0	0
Vignoble Saint Rémi	1995	2	Montérégie	9	..	..	..	1	0
Artisans du terroir	1999	2	Montérégie	6	..	8	1500	1	0
Coteau St Paul	1999	2	Montérégie	3.5	..	10	900	1	0
Clos Mont St Hilaire	1999	2	Montérégie	1.3	..	..	400	0	0
Les Murmures	2000	2	Montérégie	2.4	..	7	500	1	0
Clos Saragnat	2003	2	Montérégie	..	..	2	..	0	0
Les Petits Cailloux	2005	2	Montérégie	2.4	..	8	1000	1	0
Vignoble MarieBeauBoi *	2005	2	Montérégie	..	6000	..	..	1	0
Cote de Vaudreuil	2006	2	Montérégie	6.5	20000	6	500	1	0
Domaine des Salamandres	2006	2	Montérégie	1.5	8000	4	2500	1	0
Domaine St Jacques	2007	2	Montérégie	15	..	10	5000	1	0
Kobloth	2007	2	Montérégie	4.8	10000	10	800	1	0
Vignoble Coteau Rougemont	2007	2	Montérégie	14	..	14	..	1	0
Domaine De Lavoie	2008	2	Montérégie	10	72000	8	..	1	0
Domaine Clos St Bernard	2008	2	Montérégie	2	..	..	2	1	0
J.O. Montpetit	2009	2	Montérégie	9.4	25000	10	1200	1	0
Domaine Labranche	2009	2	Montérégie	..	..	3	..	1	0
Vignoble Cortellino	2010	2	Montérégie	..	6000	5	..	1	0
Le Chat Botté	2012	2	Montérégie	4	12000	6	..	1	0
Domaine du Nival	2012	2	Montérégie	6	..	3	..	1	0
Le Mas des Patriotes	2012	2	Montérégie	2.5	8000	6	..	1	0
Domaine le Grand St Charles	2013	2	Montérégie	3	5500	4	..	1	0
Vignoble Emile Auguste	2013	2	Montérégie	..	4000	..	..	1	0
Vignoble Vertefeuille	2013	2	Montérégie	4	6000	3	..	0	0
Vignoble du Ruisseau	2014	2	Montérégie	7	..	..	..	1	0
Vignoble 1292	2015	2	Montérégie	1.3	4500	5	350	1	0

Appendix 1: Continued

Les Cotes d'Ardoise	1980	3	Cantons de l'Est	11	46000	6	3500	1	0
L'Orpailleur	1982	3	Cantons de l'Est	24	120000	10	20000	1	0
Le Cep d'Argent	1989	3	Cantons de l'Est	18	60000	12	10000	1	0
Gagliano (ex Blancs coteaux)	1989	3	Cantons de l'Est	10	43000	15	3500	1	0
La Bauge	1990	3	Cantons de l'Est	7.5	..	8	..	1	0
Les Trois Clochers	1992	3	Cantons de l'Est	4	12400	7	750	1	0
Ste Croix de Dunham	1994	3	Cantons de l'Est	1.3	..	5	..	1	0
Vignoble de la Sablière	1994	3	Cantons de l'Est	3	..	..	400	0	0
Domaine de L'Ardennais	1995	3	Cantons de l'Est	4.5	..	..	1700	0	0
Les Pervenches	1996	3	Cantons de l'Est	3	..	5	1000	1	0
Chapelle Ste Agnes	1997	3	Cantons de l'Est	2.4	7000	12	400	0	1
Domaine du Ridge	1999	3	Cantons de l'Est	13	85000	10	5800	1	0
Les Bromes (leon Courville)	2000	3	Cantons de l'Est	16	80000	17	6000	1	0
La Mission	2000	3	Cantons de l'Est	3	..	6	..	0	0
Les Diurnes	2003	3	Cantons de l'Est	9.5	25000	..	1200	0	0
Coteaux du Tremblay	2003	3	Cantons de l'Est	2	..	5	800	0	0
Vignoble Chemin de la Rivière	2003	3	Cantons de l'Est	..	18000	5	..	1	0
Vignoble Centaure	2004	3	Cantons de l'Est	9.3	8500	4	..	0	0
Château de la Grange (Chants de Vignes)	2005	3	Cantons de l'Est	..	15000	5	..	0	0
Val Caudalie	2005	3	Cantons de l'Est	4	..	..	1500	0	0
Clos du Roc Noir *	2006	3	Cantons de l'Est	2.6	10000	..	..	0	0
Bouchard-Champagne	2007	3	Cantons de l'Est	9	..	4	2000	0	0
La Halte des Pellerins	2008	3	Cantons de l'Est	5	20000	9	2500	1	0
Vignoble Bromont/Vitis	2008	3	Cantons de l'Est	3	10000	..	1500	0	0
Domaine Bresee	2008	3	Cantons de l'Est	5	..	6	1500	0	0
Cotes des Limousins	2008	3	Cantons de l'Est	6	..	..	..	1	0
Domaine Pigeon-Hill	2008	3	Cantons de l'Est	..	4500	..	..	1	0
Vignoble Château de Cartes	2010	3	Cantons de l'Est	..	..	..	..	1	0
Vignoble La Grenouille	2012	3	Cantons de l'Est	2	..	5	800	1	0
Domaine Bergeville	2013	3	Cantons de l'Est	2	8000	3	..	1	0
Domaine de L'Ile Ronde	1995	4	Lanaudière	8	..	..	4500	0	0
Carone	1995	4	Lanaudière	20	..	16	2500	0	1
Gélinas	2001	4	Lanaudière	16	32000	9	2500	0	0
Bouche- Art	2001	4	Lanaudière	2.8	..	6	250	1	0
Aux Pieds des Noyers	2002	4	Lanaudière	5	..	8	1500	0	0
Vignoble St Thomas (Ex Le Mernois)	2004	4	Lanaudière	3.4	..	8	1600	1	0
Clos St Ignace *	2006	4	Lanaudière	2	..	7	1000	0	0
Saint Gabriel	2009	4	Lanaudière	6	29000	..	400	1	0
Vignoble Mondor	2010	4	Lanaudière	..	6000	4	..	1	0
Vignoble Beauchemin	2012	4	Lanaudière	5	14000	3	..	0	1
Vignoble Lano d'Or	2013	4	Lanaudière	5	..	4	1100	1	0

Appendix 1: Continued

Domaine du Clos de l'Isle *	1991	5	Centre du Québec	9.5	..	6	..	0	1
Les Cotes du Gavet	2000	5	Centre du Québec	1.5	8000	5	500	0	1
Vignoble Les Vallons de Wadleigh	2008	5	Centre du Québec	..	16000	4	..	0	1
Riparia	2010	5	Centre du Québec	..	3300	4	..	0	1
Domaine des 3 Fûts *	2013	5	Centre du Québec	2	9000	3	..	1	1
La Charloise	2013	5	Centre du Québec	..	3000	..	..	0	1
Fief de la Rivière	2014	5	Centre du Québec	..	3000	5	350	0	1
Ste Petronille	1992	6	Québec	8.8	..	10	3000	1	0
Isle de Bacchus *	1997	6	Québec	12.6	35000	8	3000	1	0
Le Nordet	1999	6	Québec	4	10000	10	1400	0	0
La Cache a Maxime	2001	6	Québec	2.5	7000	6	700	0	0
Vignoble Bourg Royal	2002	6	Québec	..	..	..	..	0	0
Vignoble du Faubourg	2004	6	Québec	8	18000	5	750	0	1
La Source a Marguerite	2005	6	Québec	3	6000	4	1000	1	0
Vignoble du Mitan	2007	6	Québec	2	..	10	..	1	0
L'Ange Gardien	2007	6	Québec	3	10000	10	2500	1	0
Vignoble Bel-Chas	2008	6	Québec	3.5	..	6	350	0	1
Clos Lambert	2008	6	Québec	2.5	..	5	300	1	0
Le Domaine des 3 Moulins	2011	6	Québec	..	7500	4	600	1	0
Carpinteci	2005	7	Bas St laurent	9.8	..	9	1500	0	0
La Marée Montante	2006	7	Bas St laurent	3	7000	..	300	0	0
Domaine du Lac	2006	7	Bas St laurent	..	10000	8	900	0	1
Vignoble Couchepagane	2012	8	Lac St Jean	2	4800	3	..	0	1
Note: * The domain will be closed at the end of 2016 or is for sale									
AVQ = Association des Vignerons du Québec									
VIQ = Vignerons Independants du Québec									