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Rodrigo Berríos Rodrigo Saens

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BUSINESS ECONOMICS

The country-brand in the wine industry: how important is variety specialization?

La marca país en la industria del vino: ¿cuán importante es la especialización por cepa?

Rodrigo Berríos and Rodrigo Saens
Facultad de Economía y Negocios, Universidad de Talca, Talca, Chile

Abstract

Purpose – The purpose of this paper is to analyze whether or not the reputation of a region/country in the international wine market depends on a region/country's efforts to specialize in a specific grape variety.

Design/methodology/approach – Data on 19,959 bottles of wine corresponding to six vintages across ten wine producing regions worldwide are used to estimate a hedonic price model that measures consumer valuations of the different wine attributes.

Findings – The results of this study show that although variety specialization has successfully underpinned the reputation of some New World regions, such as the Napa Valley (with its Cabernet Sauvignon) or Oregon (with its Pinot Noir); in others, such as Australia (with its Shiraz), this has not been successful.

Practical implications – Over the last ten years, the exponential growth of Australian bulk wine exports has seriously harmed the reputation of Australian wine. With respect to the Napa Valley wines, price discount received by Australian wines increases between the 1997 and 2007 vintage from 33 to 61 percent. Thus, in order to successfully build a collective reputation of an entrant (New World) country, an institutional framework that mediates differences of interest between the large and small vineyards and, above all, that regulates the free-rider problem in the wine market is required.

Originality/value – This paper empirically illustrates how cooperative (and non-cooperative) behavior between firms can help to build (and to destroy) collective reputation of wines that come from the same region or country.

Keywords Country-brand, Wine, Collective reputation, Hedonic prices

Paper type Research paper

Resumen

Propósito – El objetivo de este trabajo es analizar si los esfuerzos de una región/país por especializarse en la producción de una misma variedad de cepa sirven o no para construir la reputación de una región/país en el mercado internacional del vino.

Diseño/metodología/Enfoque – Se utiliza un modelo econométrico de precios hedónicos sobre la base de 19.959 mil observaciones provenientes de 6 cosechas y 10 zonas productoras de vino del mundo.

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Resultados – Los resultados de este estudio muestran que aunque la especialización por cepa ha impulsado la reputación de algunas regiones del Nuevo Mundo, como la del Valle de Napa (con su Cabernet Sauvignon) o la de Oregon (con su Pinot Noir); en otras, como la de Australia (con su Shiraz), no ha sido una estrategia exitosa.

Implicaciones prácticas – En los últimos diez años, el crecimiento exponencial de las exportaciones de vino a granel australiano ha dañado seriamente la reputación del vino de dicho país. Respecto a los vinos de Napa, el castigo de precios de los vinos australianos ha crecido desde un 33% en la cosecha 1997 a un 61% en la cosecha 2007. Así, si se desea construir con éxito la reputación de un país entrante (del Nuevo Mundo) al mercado mundial del vino, se requiere de un marco institucional que medie las diferencias de interés entre las grandes y pequeñas viñas, y que, por sobre todo, regule las conductas no cooperativas (*free-rider*) que surgen al amparo de la reputación colectiva asociada a los vinos que provienen de una misma región o país de origen.

Originalidad/Valor – Este paper ilustra de manera empírica cómo las conductas cooperativas (y no cooperativas) entre productores pueden ayudar a construir (y a destruir) la reputación colectiva de los vinos que provienen de una misma región o país.

Palabras clave – Marca-país, vino, reputación colectiva, precios hedónicos

Tipo de trabajo Trabajo de investigación

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1. Introduction

In today's competitive global world, a country's reputation matters. Understood as a set of perceptions that identifies a nation's products and differentiates these goods from those of its competitors, the reputation of a country, or country-brand, is a kind of public good that can play in favor or against the goods and services that a country produces. A country relies on its reputation to gain the trust of consumers, attract tourists and compete internationally for investor confidence.

The country-brand is particularly important in the wine industry. A renowned national brand such as that enjoyed by France introduces a positive bias by association which means consumers are willing to pay more for any wine produced in that country, regardless of its quality.

Contrary to popular belief, the country brand is much more than a simple logo or publicity campaign. Behind such a set of perceptions and territorial identity, there exists a collective reputation that is established through the performance of the nation's producers. It is not pure coincidence or clever marketing that leads consumers worldwide to associate France with wines of excellence.

But in the glamorous world of wine, building a reputation is not simply a matter of quality. It also requires ingenuity and marketing as well as a certain agility to develop one's own style and specialize in iconic varieties attractive to the global public. However, one should not fall into the trap of merely imitating a variety already positioned by another region as occurred with those seeking to copy the Napa Valley's Californian Cabernet. The original became a true cult brand while its imitators are considered simple third-tier substitutes.

Unfortunately for the countries that have just entered the global wine industry, evidence shows that not one of them was able to build a country brand that generates competitive advantage. Unlike the successful path followed by the Californian vineyards of the Napa Valley during the 1970s and 1980s, the winemakers of other new entrant countries (such as Argentina, Australia or Chile during the 1990s) accepted the inferiority of their country brand, and by doing so they did not have much choice but to sell their wine at a considerably discounted price.

These new entrant companies chose to offer wines in bulk and at a low price with little regard for the differences in quality and no concerted effort to build

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and/or position a brand. Known as best value for money, this trading strategy has undermined the emerging and parallel positioning efforts made by boutique vineyards. This alternate or second sector focusses on producing fine wines on a small scale with a high level of differentiation and segmentation, careful artisan production process, and, most significantly, considerably higher prices which are more in line with the true quality of their products.

However, despite the positioning efforts of the boutique vineyards, Schamel (2002), Schamel and Anderson (2003) and Berríos and Saens (2012) show that a Napa Valley wine in California obtains double the price of a Chilean or Argentinean wine of equal quality. Thus, the question which we must consider is how profitable would it be for vineyards of new entrant countries to join forces in building an aggregate or collective reputation.

Klein and Leffler (1981), Shapiro (1983) and Allen (1984) explain that when the actual quality of a product is not known before purchase, as is the case with experience goods such as wine, consumers can form their quality expectations based on the prestige of the product or the reputation of the producing firm. Landon and Smith (1997, 1998), Brooks (2003) and Costanigro *et al.* (2007) add that in the case of goods such as wine, it is reasonable to expect that consumer's willingness to pay depends not only on the actual product quality but also on the (individual) reputation of the producing firm and even the prestige associated with the firms located in a specific valley (collective reputation).

Australia, the most developed new entrant country of the southern hemisphere, displayed both smart marketing and ingenuity in the development of its characteristic grape, Shiraz. By doing so, the country constructed an emerging, well-regarded brand during the 1990s. As a result, its success was ephemeral, ultimately ending in an overproduction crisis brought about largely by a lack of collaboration between the two sectors: those producers that want to build a reputable country brand, and those that do not.

Argentina, a special case due to its comparatively lower levels of development, has also shown great ingenuity by gradually specializing in its flagship variety, Malbec, which now commands an unusual success among the sophisticated global audience. However, the slow development of the majority of the country's wine sector suggests the industry has failed to capitalize on this outlying success. Chile, meanwhile, despite its outstanding natural wine resources, is positioned principally as a producer of good, inexpensive Cabernets. Notably, efforts are underway to develop a flagship national variety, Carmenere, with results yet to be seen.

Using an econometric model of hedonic prices of 19.969 observations corresponding to six vintages across ten wine producing regions worldwide, this paper will aim to analyze whether or not the reputation of a region/country – and, therefore, the amount consumers will be willing to pay for a particular brand – depends on a country's efforts to specialize in a specific grape variety. Our results show that while variety specialization has successfully underpinned the development of reputations for New World regions such as the Napa Valley or Oregon, this has been more problematic for other countries – Australia, for example – which, as a result of an exponential growth in output volume, have experienced an overall drop in quality leading to a decline in the national brand's worth as a whole. In comparison to wines from the Napa Valley (taking into account quality, age and the number of bottles produced), consumers have gone from paying 31.8 percent less for Australian wines in 1997 to 66.4 percent less, in 2007.

Thus, to successfully build a competitive collective reputation for an entrant wine producing country in the wine industry an institutional framework is required to mediate differences of interest between the large and small vineyards. Furthermore,

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this framework should act to incentivize cooperation in the building of this reputation, as it is a good that will benefit the industry as a whole.

The remainder of this paper is organized as follows: In Section 2, the conceptual framework and the stylized facts underlying this work are discussed. The empirical model and the characteristics of the sample are described in Section 3. Section 4 discusses the results and Section 5 presents the conclusions.

2. Conceptual framework

The conceptual discussion of this work is focussed on three issues that are crucial to building a collective reputation in the global wine industry. The first issue is the difficulty producers of new entrant regions/countries face in changing the consumer perception that non-expensive wines represent poorer quality. A second point is the absence of an institution capable of reconciling the interests of different producers, which protects the long-term interest of the region/country as a whole. As Tirole (1996) points out, such an institution is essential to form a collective reputation. Finally, a third issue is the relationship between country brand and grape specialization. This may be one specific grape or a collection of grapes which become specialties due to particular conditions of climate and terroir, and which the consumer therefore identifies with that particular country/region. For example, the Napa Valley's Cabernet Sauvignon or the Argentine Malbec.

2.1 Perception is quality

With their Cabernet Sauvignon, the producers of the Napa Valley have created a uniquely powerful brand reputation, which leads consumers to consistently perceive these wines as being of a quality superior to that assigned to them by expert evaluation. An American critic described his experience when he tried a Napa Valley Cabernet Sauvignon as "the feeling that people must have felt when they watched Gielgud play Hamlet. Electric. Or seeing Nureyev at his height, doing Giselle, in the early 60s, at the Royal Ballet." Moreover, wines from the most prestigious districts of the Napa Valley, such as Rutherford and Oakville, have taken on greater value as status symbols among elite consumers. Purchasing these wines bestows consumers with a prestige akin to that gained by buying art: the key factor behind the high prices they are able to charge.

The opposite happens with the wines of the south of the world. Robinson (2001) notes that some global critics often describe Chilean Cabernet as boring and characterless. According to Orth *et al.* (2005), Heslop *et al.* (2009) and Gardiner (2014), consumers' perception of Chilean wine is that it is "the best cheap wine in the world." Using an empirical hedonic price model, Schamel (2000) and Berrios and Saens (2012) also corroborate this lower quality perception. Both of them show that Chilean wines of the same quality and age are consistently undervalued in comparison to similar Californian wines, selling on average at below 50 percent of the price charged by their US competitors.

This under-valuing by consumers, or "price discount," is a typical problem for a new entrant country (or a country from the New World). It is difficult to build a country reputation while competing with fine wines from other regions/countries that enjoy greater historical prestige (France and Italy in Europe, or the Napa Valley and Sonoma in the USA, e.g.). A Cabernet that comes from the USA can be sold at a much higher price than a Cabernet of equal quality from a new entrant country such as Argentina, Australia or Chile. This indicates that the public perceives both wines as distinct products. Consumer perception, therefore, differs greatly from the expert evaluation put forward by publications such as *Wine Spectator* or *Wine Advocate*.

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One of the signals used by the consumer to infer a wine's quality is the reputation of its region of origin. Klein and Leffler (1981), Shapiro (1983) and Allen (1984) show that when the actual quality of a product is not known before purchase, consumers rely on a company's reputation to form expectations of the product's quality. Tirole (1996), Landon and Smith (1997, 1998) and Costanigro *et al.* (2007), among others, distinguish between the price impact of two types of reputations: an individual reputation and a collective one. The individual reputation is based on the previous quality of a producer's output. The collective reputation is understood as the average quality produced by a group of companies. In the latter case, consumers often associate quality with the name of a geographical area, and see products from a specific region as inherently superior (e.g. Scottish Whisky or Napa Cabernet).

Therefore, the amount consumers are willing to pay based on reputation can indicate the strength of the brand of a region/country to differentiate its product. This definition, although partially correct, has the disadvantage of being static. It describes a situation whereby the reputation or brand of each country/region is fixed, while the focus should in fact be on how to achieve this status and how to overcome the strong complexities involved in its construction, particularly for new entrant countries.

The importance of building a collective reputation by region/country makes most sense when considering the strong information asymmetries in the wine industry. When it comes to an experience good, the actual quality is not observable before purchase. Furthermore, with a multitude of brands in the supermarket, the consumer may lack first-hand experience with many of the products on offer. In this type of market the sales price and the reputation of the geographical area where each bottle originates are seen as signs of quality.

According to Goldstein *et al.* (2008), the quality signal emitted by elevated prices is so powerful that it exaggerates consumers' enjoyment of expensive wines. Conversely, when evaluated in a blind tasting, the same expensive wines were perceived as inferior. Thus, lacking other means to demonstrate the superiority of their wines to consumers, winemakers will employ high price tags in an attempt to capitalize on the public's perception of price as an indicator of quality.

The higher priced wines come from the most reputable countries and regions. In contrast, the wines produced in new entrant countries lack prior prestige. As a consequence, upon entering the market, new wine producing countries were forced to offer significant discounts compared to wines of equal quality produced in the USA with average or high reputations. According to Rao and Monroe (1996), this price contrast – between expensive and cheap wines from regions with and without a strong collective reputation – has strengthened the correlation between quality, region of origin and sale price. This confirms the widespread belief in the USA that price is a good quality indicator, whereas, in fact, this is far from the truth in the case of the wine industry.

2.2 Reputation is collective

In this paper, the collective reputation provided by the name associated to a country or a region is assumed to be a common property resource, a sort of public good whose benefits are shared by all the firms in the region.

According to Castriota and Delmastro (2009), collective reputation is an important determinant in the price of wine. A shared brand for a group of firms, like the name of a country or a region, can reduce information asymmetries, especially when the scale of production of each firm in that geographical area is too small.

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In his theoretical model, Tirole (1996) argues that collective reputation (provided by a group of producers) is the result of individual reputations (provided by each firm of that group). Tirole also refers to the need for producers in a specific geographical area to evenly collaborate in raising quality not only to achieve higher aggregate and consistent quality for the region, but, above all, so that consumers associate the name of that region to high quality products.

When the collective reputation of a region is good, the name of that region will be a powerful tool to signal quality. Thus, as Rickard *et al.* (2012) affirm, it is not surprising that wine regions attempt to use reputation tapping to send signals of quality to consumers and to expedite the reputation building process.

Because wine is, according to Nelson (1970), an experience good – a product whose quality is unobservable until it is consumed – the consumer relies on the reputation of the region, which is based on the group's past average quality and in some way guarantees the quality of this type of product.

The dynamic problem of collective reputation is similar to the problem of common property natural resource extraction: individual and collective reputations influence each other. According to Winfree and McCluskey (2005), when there is asymmetric information about individual firm quality, firms have an incentive to cheat on quality, milking the rents generated by the good name of a region.

As Fleckinger (2007) states, creating a collective reputation might not always be possible since it requires a long lasting relationship among the members of the coalition of producers, as well as the identification of the group at each purchase. In fact, constructing a collective reputation requires the region's producers to make a permanent commitment to ensure quality, promote their products and make long-term investments, which take time to bear fruits.

The complexity of building a reputation or a brand associated with a region is to ensure that the individual agendas of winemakers sharing a specific geographical region can be replaced by a collective goal; that is, improving the perceived quality of the goods produced in that region among consumers.

But not all producers will necessarily hold the same goals. As the collective reputation is a public good, a group of vineyards will often adopt a free-rider strategy, hoping that other producers make the effort to raise the quality or spend more on promotion.

The conflicting goals of the two types of wine producers (e.g. large companies whose production structure makes them compete as cost leaders with high production volumes and low prices, and the wine boutiques which compete on a small scale, through differentiation) are a more important obstacle in achieving this common goal. Both groups coexist everywhere, but in entrant countries with a weak emerging reputation and a highly concentrated wine industry, their interaction is complex.

The recent Australian experience of overproduction is unfortunately an excellent example of how a promising wine country can destroy its reputation. As Lewis and Zalan (2014) illustrate, the big companies and free riders alike started flooding the global market approximately since 2002-2003, pushing down their prices in a typical commodity trap situation. This overproduction is directly related to the concentration of the wine industry. It is not a coincidence that according to Farinelli (2012), the five largest companies control 80 percent of exports in Australia, 60 percent in Chile and 50 percent in Argentina.

In this context, the actions of different producer groups and even individual producers are interdependent: the successes and failures of some producers will impact others, and, most importantly, these consequences can in turn affect the collective reputation of

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a whole region or even an entire country. According to Van Tienhoven (2008) and Aylward (2007), once a country's industry is perceived as a producer of cheap wines, the chances of developing or enhancing this reputation are reduced because of the dominance of the large industry. Examples of this country brand trap are Argentina, Australia and Chile.

2.3 The secret to a regional brand is specialization

But for new entrants all is not lost. The price reward enjoyed by reputable regions such as the Napa Valley is not uniform for all its varieties. Cabernet Sauvignon is the flagship product, for which the region's winemakers can charge almost double the price of competitor products of equal quality. It is true that the US consumers are willing to pay more for any variety grown in the Napa Valley in comparison to other wines of equal quality and the same variety but from other less reputable regions. But it is also true that the same consumers pay much more if the variety is a Cabernet from Napa.

The Napa Valley has not always specialized in Cabernet Sauvignon. Its production of this variety increased rapidly from 1972 onwards, along with that of Merlot and Pinot Noir. This region shifted its focus from low-cost, low-quality wines to the production of fine wines in a clear imitation of the French pattern. In theory, this means that it is possible and sensible to compete with wines from Napa; for example, by developing and positioning other varieties that this region does not produce.

We understand the style of a region/country as its particular combination of varieties together with other sensory nuances like the sweetness and character of its wines. Of equal or perhaps greater importance is the speed with which a region or country adjusts its style or mix of varieties to the market, how it optimizes this style or mix according to the possibilities of its terroir, and/or how it innovates or develops market niches as a pioneer producing apparently nonexistent or rediscovered varieties. This has been the case of the Argentinean Malbec, and more recently, the Chilean Carmenere.

2.4 The stylized facts

According to Easingwood (2007) and Anderson (2013), most of the wine regions competing in the US market, domestic and foreign vineyards alike, try to specialize in those varieties that, due to their unique character and particular climate and soil conditions (what winemakers call the terroir), can generate a more upscale product, thereby appealing to public taste and warranting a higher price tag. The results in Table I show that changes in varieties seem to be caused more often by marketing and reputation factors than climate or terroir factors. Sonoma, Chile and Argentina are all good examples of this.

The presence of bottles of Cabernet Sauvignon from the Sonoma Valley, adjacent to the Napa Valley in California, fell from 24 percent in 1997 to 9 percent in 2007. The same applies to the Cabernet Sauvignon from Chile and Argentina, whose presence in the *Wine Spectator's* database is reduced from 54 percent to 35 percent and from 30 percent to 20 percent in the same period, respectively. In contrast, the presence of the Napa Valley's Cabernet Sauvignon has increased from 39 percent in 1997 to 68 percent in 2007. According to Farinelli (2012), all these regions have very suitable or ideal climatic conditions for the production of Cabernet Sauvignon, but it is the reputation of the glamorous Napa Cabernet that makes the difference.

Other industries have, in turn, responded to the Napa Valley's dominance of the Cabernet Sauvignon variety. Argentina reduced its Cabernet Sauvignon production in favor of Malbec, a flagship variety that is not grown in any other region/country in the

	Variety	Vintage 1997 Number of bottles	Vintage 1997 Portion (%)	Vintage 2007 Number of bottles	Vintage 2007 Portion (%)
Argentina	Malbec	24	31.6	244	48.1
	Cabernet Sauvignon	23	30.3	99	19.5
	Merlot	12	15.7	29	5.7
	Blends and others	17	22.4	92	18.1
Australia	Shiraz	144	40.2	181	48.4
	Cabernet Sauvignon	140	39.1	77	20.6
	Merlot	28	7.8	8	2.1
	Blends and others	68	18.9	106	28.3
Napa	Cabernet Sauvignon	136	38.6	474	67.9
	Merlot	119	33.8	96	13.8
	Zinfandel	58	16.5	64	9.2
	Blends and others	39	11.1	64	9.2
Sonoma	Pinot Noir	90	20.1	353	46.1
	Cabernet Sauvignon	106	23.7	69	9.0
	Zinfandel	138	30.9	204	26.7
	Blends and others	113	25.3	139	18.2
Chile	Carmenere	5	2.6	77	20.0
	Cabernet Sauvignon	103	53.9	134	34.9
	Merlot	68	35.8	44	11.5
	Blends and others	15	7.9	129	33.6
Oregon	Pinot Noir	104	78.2	227	96.2
	Cabernet Sauvignon	8	6.0	4	1.7
	Merlot	10	7.5	2	0.8
	Blends and others	11	8.3	3	1.3
South Africa	Cabernet Sauvignon	54	50.4	82	34.0
	Shiraz	17	15.9	54	22.4
	Pinotage	13	12.1	34	14.1
	Blends and others	23	21.5	71	29.5
New Zealand	Pinot Noir	12	34.3	91	86.7
	Cabernet Sauvignon	13	37.1	1	1.0
	Merlot	8	22.9	4	3.8
	Blends and others	2	5.7	9	8.5

Note: The portion or share is the number of bottles per variety recorded by *Wine Spectator* for each region/country in each vintage
Source: Prepared by the authors on the basis of data from *Wine Spectator*

Table I. Presence of the foremost varieties in the New World per region/country according to *Wine Spectator's* ranking, vintage 1997 and 2007

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world. Australia, likewise, has moved away from Cabernet and specialized with Shiraz, earning a notable price reward in comparison to other emerging regions, which are also producing this variety. Sonoma is also turning its back on Cabernet Sauvignon, in this case to focus on Pinot in an attempt to snatch the price premium from Oregon, an early pioneer in Pinot-specialization.

Meanwhile, Chile is one of the few new entrant countries in the global wine industry not to be identified with a particular variety by consumers. One reason behind this phenomenon is the dual structure of its producers: on the one hand, a highly globalized and consumer-oriented vanguard, and on the other, a large number of production-oriented companies that lag far behind their counterparts in the first sector.

The numbers in Table II show the reputation gains and subsequent price gains a country can obtain when its producers specialize in a particular variety. The most spectacular case is Napa's Cabernet Sauvignon, with average sales prices of US$61 for

		Specialized variety 1997	Specialized variety 2007	Other varieties 1997	Other varieties 2007
Malbec	Average price	16.0	27.8	15.4	23.7
Argentina	Average quality	83.1	86.7	80.6	85.4
Cabernet Sauvignon	Average price	61.0	95.5	33.0	48.4
Napa	Average quality	88.9	89.9	87.0	87.5
Cabernet Sauvignon	Average price	16.0	24.1	11.0	24.4
Chile	Average quality	83.3	85.5	82.4	85.9
Cabernet Sauvignon	Average price	21.0	28.6	17.7	27.7
South Africa	Average quality	84.6	87.5	84.0	87.1
Pinot Noir	Average price	34.0	50.0	29.0	36.7
Sonoma	Average quality	87.0	89.1	87.0	87.4
Pinot Noir	Average price	27.0	44.7	20.0	28.8
Oregon	Average quality	84.8	87.9	84.4	88.4
Shiraz	Average price	31.7	44.6	22.9	28.4
Australia	Average quality	87.7	88.9	85.5	87.7

Notes: The price is expressed in dollars per bottle. The average quality of a bottle in *Wine Spectator* varies from 50 (very poor) to 100 points (outstanding)
Source: Prepared by the authors on the basis of data from *Wine Spectator*

Table II.
Effect of variety specialization for different regions and wine-producing countries worldwide

the 1997 vintage, rising to US$96 for the 2007 vintage, almost twice the price of other wines from the same region with the same vintage and quality, but of different varieties.

The selling price of a 1997 Chilean Cabernet Sauvignon is only US$16, while the average price of all other varieties of the same quality that year was US$11 (a difference of less than 50 percent). In 2007, the price of Chilean Cabernet reached US$24, which is the same average price for other Chilean varieties of the same quality. This result explains why Chilean producers are abandoning Cabernet Sauvignon and focussing on wine pairing (blends) or the production of other promising varieties, such as Carmenere. Unfortunately for Chilean Cabernet (which, according to *Wine Spectator's* ranking, can reach an average of equal quality as Napa's Cabernet), the Californian Cabernet's consumer reputation appears unbeatable.

One interesting case that plots the potential gains of specialization for New World wines is the Argentinean Malbec, the selling price of which went up from US$16 in 1997 to US$28 per bottle in 2007. In the same period, the average price of other Argentinean varieties increased from US$16 to US$24. The gains derived from specialization in terms of price are more modest in this case. However, the Argentineans seem to use this increased brand power, generated by their specialization in Malbec, to sell a greater volume instead of achieving a better price.

Other regions or countries that have used the expertise in varieties to shore up their reputation or country brand are Oregon and Australia. Oregon commands a privileged position in the global marketplace by specializing in Pinot Noir, bringing its average sale price from US$27 to US$45 in ten years. Pinot Noir was launched to stardom in 2004 by the US film *Sideways*. According to Cuellar *et al.* (2009), Sideways (a true ode to the art of producing difficult varieties in cold climates, as well as a protest against the industrial processing of wine) had a gigantic unintended advertising effect. The film strongly boosted demand and prices of Pinot Noir, helping the state of Oregon, which had suffered from strong undervaluation by consumers at the beginning of the 1990s, to achieve a situation almost close to Napa at the end of the last decade (exactly the level of Sonoma).

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But the success of Oregon is not just a matter of chance. According to Benfratello *et al.* (2009) and Castriota and Delmastro (2009), Oregon's specialization in Pinot Noir was pursued decisively by its producers after rules for powerful collective reputation were established in the late 1990s. According to Buccola and Vander Zanden (1997), Oregon's aim was to produce a niche product, with high margins and an ultra price premium focus. As indicated by Heslop *et al.* (2009), the region's "boutique style," uses small-scale production, creates a sense of exclusivity for the consumers, which in turn leverages a strong marketing effort that positions the modern Oregon Pinot Noir as an artisan organic wine.

Another typical case is that of Australia whose producers replace traditional varieties such as Cabernet Sauvignon and Merlot for the country's star variety to date: Shiraz. Specialization allows the increase of its average sales price from US$32 in 1997 to US$45 in 2007. In the same period, the average price of other Australian varieties of the same quality increases from US$23 to US$28.

According to Wollan (1998), from the outset, Australia – echoing Chile's best value for money approach – targeted the middle and lower price bands (less than US$7 per bottle) and from there aimed to climb gradually towards higher price ranges. Roberto (2003) and Castaldi *et al.* (2006) note that the high concentration of the wine industry enables its large producers to achieve economies of scale and better bargaining power with distributors.

But the "Australia brand" is also the result of both competition and cooperation. Marsh and Shaw (2000), Aylward (2007) and Anderson (2010) explain that the strong collaboration between companies of a relatively large size and the government allowed the Australians to build and finance a strong institutional architecture responsible for producing public goods such as generic research, marketing and promotion of the country brand, synthesized in the Shiraz slogan "sunshine in a bottle."

The Australian winemakers democratized the consumption of wine in supermarkets in the USA, helping to position the Australian wine, in the words of Nipe *et al.* (2010), as "a very achievable treat." They saw themselves as disruptive innovators in the theoretical sense of Christensen (1997), using a strategy similar to that used with Japanese cars in the USA Through its strategy of efficiently producing quality wines accessible to the public, Australia quickly achieved an increase in its average export price per liter of wine (which includes bulk and bottled wine) of US$1.85 in 1989 to US$3.14 in 2004. According to Anderson and Nelgen (2011, pp. 72, 101 and 111), the price the Australians achieved that year was the second best after the US$4.87 obtained by the French.

However, this emerging positive reputation had a major setback. According to Anderson (2015), "the share of bulk wine in total exports has grown more rapidly for Australia than for other key exporters since the turn of the century." This exponential increase included the growth of opportunistic companies (free riders) who took advantage of Australia's budding reputation and the flooded world markets, including North America, with bulk wine of poor quality. The result was obvious: the prestige of Australia as a wine producer deteriorated to such an extent that in 2010, the bulk wine exports represented 40 percent of total exports, with an average price of US$2.10. The reputation gained by Australia in the 15 years leading up to 2004 was lost.

3. The model

It is not clear why in the wine market the consumer's willingness to pay is determined not only by the individual brand but also by the collective reputation of the product's region of origin. One possible explanation is that with an experience good such as wine,

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consumers pay according to the perceived quality rather than the objective quality. And the perceived quality in this market is largely determined by the reputation of the region or the product's region of origin.

When evaluating the expected product quality, the use of the collective reputation is more likely to be used to obtain information on the individual reputation of each company. In the case of wine, we try to explain this phenomenon by postulating that consumers – lacking enough information about sensory or objective quality – make their purchasing decisions based on both the individual and collective reputation of the product.

Another typical example is the case of traditional agricultural products such as corn or wheat: given that for consumers it is almost impossible to identify the producer, they tend to associate quality to the products' region/country of origin.

Concerning an experience good, Klein and Leffler (1981) and Shapiro (1983) propose that consumers form expectations with respect to product quality based on the (individual) reputation of the producing firm. The main finding of Klein and Leffler is that price premiums due to reputation are necessary to encourage the producer to invest in quality, while Shapiro shows that, in the case of the monopolist, optimal product quality decreases to the extent that for consumers, it is hard to identify the quality.

Tirole (1996), however, suggests that in some cases the expected quality is a function of both the individual reputation and the collective reputation; that is, the average quality of goods produced by a group of firms with which the producer is identified, for example, the average quality of the wines of the valley, region or country.

Our base model starts with Rosen's (1974) standard approach of hedonic prices: the price of a bottle of wine should be in equilibrium, a function of its vector of attributes. Hedonic prices are implicit; that is, they are not directly observable in the market. Following the model proposed by Landon and Smith (1997), we assume that wine is an experience good and that there is a quality index (q) separable from the attributes vector:

$$p_i = p_i(z_i, q_i) \tag{1}$$

One of the most important characteristics of Equation (1) is that it distinguishes between current and previous quality effects. The previous quality should be useless information (and therefore it should have no effect on the market price), if consumers know the actual quality of the wine prior to purchase. Conversely, if the information on the actual quality of a bottle is not available, or if it is very expensive to obtain, consumers form their expectations on the quality of the wine $\left(q_i^e\right)$ using reputation indicators. The more expensive it is to obtain information on each firm, the less likely it is to use individual reputation indicators (r_i) and the more likely it is to use collective reputation indicators (R_k):

$$q_i^e = q_i^e(r_i, R_k) \tag{2}$$

In turn, individual reputation is understood as a direct function of the quality score given by *Wine Spectator's* (w_i):

$$r_i = r_i(w_i) \tag{3}$$

Thus, while individual reputation can provide more and better information on the specific quality of a product than the collective reputation, some consumers, especially the less informed, form their expectation of quality based more on the reputation of the wine's country of origin than the prestige of the firm that produces it. In fact, Combris *et al.* (1997) argue that consumer's willingness to pay for a bottle of wine is determined more by its extrinsic characteristics, such as reputation, rather than its intrinsic characteristics, such as flavor or acidity.

Next, the price of wine at harvest t (p_{it}) will be in function of its attributes vector (z_{it}), the quality score published by *Wine Spectator* (w_{it}) and the collective reputation of its region of origin k (R_{kt}). Adding a vector of parameters (β) and stochastic error term (ε_{it}), we can express the hedonic equilibrium price as:

$$p_{it} = p_{i_t}(z_{it}, w_{it}, R_{kt}, \beta) + \varepsilon_{it} \tag{4}$$

3.1 Sample

We use the ratings or scores of quality wines from six vintages published by *Wine Spectator* ($t = 1997$, 1999, 2001, 2004, 2005 and 2007) originated from $K = 10$ wine producing regions/countries in the world: Argentina, Australia, Burgundy (France), Chile, Napa (USA), New York (USA), New Zealand, Oregon (USA) and Sonoma (USA) and South Africa. Each of the 19.959 observations include price, quality score, name or brand of the vineyard, variety, vintage, reserve years, region or country of origin and number of boxes produced. For statistical convenience, the sample only refers to red and dry wines. All sweet red wines (e.g. rosé) and wines with a non-standard bottle size are eliminated.

Prices per bottle of wine are real, all expressed in US dollars according to the year 2007. As a dependent variable, we used the natural logarithm of the real price and as independent variables we used the quality score published by *Wine Spectator*, checking for region or country of origin, variety, age and number of boxes produced.

4. Results

Table III shows the results of our base model, in which the sale price is a function of the *Wine Spectator* score, age, the number of boxes produced per vintage, variety and region of origin of each bottle.

Age-price and price-quality elasticity in Table III are statistically significant, with an expected sign and a magnitude in the range of the results reported by Schamel and Anderson (2003), Roberts and Reagans (2007) and Berríos and Saens (2012). There is a significant and positive relationship between the quality ratings reported in *Wine Spectator* and wine prices. These results also indicate that, on average, the older the wine, the higher the price.

The numbers in Table III show that even when checking for quality, variety, age and number of cases produced per vintage, the reputation of the region/country of origin is an important factor in consumer's willingness to pay. For example, the punishment or discount received by Argentinean and Chilean wines of vintage 2007 compared to the Napa Valley's vintage (of equal quality) exceed 65 percent. These results are consistent with those reported by Landon and Smith (1997, 1998), Brooks (2003) and Rickard *et al.* (2012): collective reputation matters when it comes to the price of wine.

Oregon (USA) is an example of a successful case of regional rebranding, demonstrating a considerable reduction in the under-valuation of its products. Oregon wines went from a price discount of 88 percent for vintage 1997, to a substantially lower discount of 39 percent for vintage 2007. Indeed, the specialization of Oregon in Pinot Noir has enabled it to be positioned next to the Napa Valley and Sonoma, as one of the three most reputable wine producing regions of the USA.

Table III also shows the deterioration in the country reputation of Australian wines. With respect to the Napa Valley, price discount increases between the 1997 and 2007 vintage from 33 percent to 61 percent. As Schamel (2010) concludes, "the tremendous

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	Vintage 1997	1999	2001	2004	2005	2007
Country or region						
Argentina	−0.468***	−0.623***	−0.716***	−0.703***	−0.710***	−0.676***
Australia	−0.325***	−0.468***	−0.559***	−0.546***	−0.571***	−0.607***
Borgoña	0.613***	0.069	−0.132***	−0.189***	−0.275***	−0.096**
Chile	−0.543***	−0.597***	−0.809***	−0.731***	−0.724***	−0.655***
New York	−0.505***	−0.523***	−0.751***	−0.651***	−0.763***	−0.662***
New Zealand	−0.361***	−0.367***	−0.363***	−0.458***	−0.605***	−0.580***
Oregon	−0.879***	−0.430***	−0.481***	−0.451***	−0.461***	−0.386***
Sonoma	−0.179***	−0.189***	−0.316***	−0.329***	−0.311***	−0.385***
South Africa	−0.630***	−0.690***	−0.704***	−0.683***	−0.755***	−0.710***
Cepas						
Cabernet Franc	−0.204**	−0.296**	−0.364***	−0.203**	−0.108	−0.130
Carmenere	−0.099	−0.179	−0.365*	−0.185**	−0.201**	−0.086
Grenache	−0.211	−0.230	−0.230**	−0.117	−0.068	−0.237**
Malbec	−0.144	−0.128	−0.134	−0.097**	−0.104**	−0.055
Merlot	−0.090**	−0.199***	−0.252***	−0.165***	−0.190***	−0.181***
Petite Zirah	−0.371	−0.569***	−0.378***	−0.377**	−0.461***	−0.495***
Pinotage	−0.031	−0.141	−0.131	−0.202**	−0.209**	−0.067
Pinot Noir	0.072	−0.063	−0.039	0.013	−0.019	0.029**
Shiraz	−0.089**	−0.118***	−0.140***	−0.121***	−0.170***	−0.185***
Tempranillo	0.077	−0.147	−0.193	−0.489**	−0.246**	−0.144
Zinfandel	−0.293***	−0.415***	−0.367***	−0.322***	−0.351***	−0.253***
Blends and other reds	−0.189**	−0.153***	−0.167***	−0.077**	−0.111**	−0.109**
Control variables						
Wine Spectator score	4.315***	4.606***	1.545***	4.218***	5.062***	6.522***
Age	0.538***	0.371***	0.405***	0.424***	0.351***	0.292***
Cases produced	−0.119***	−0.136***	−0.151***	−0.132***	−0.160***	−0.139***
Adjusted R^2	0.647	0.649	0.600	0.624	0.658	0.686
Observations	2,513	2,998	3,152	3,221	4,007	4,068

Notes: The variety and reference region used to calculate the premiums and discounts are Cabernet Sauvignon and Napa. For example, compared to the Napa wines, the French Burgundy wines from the vintage of 1997 have a price premium of 61 percent, while the wines from the vintage of 2007 are punished with a discount of 9.6 percent; the values in the cells show the parameters estimated for each variable in cross-sectional regressions, one for each year. Given that all variables other than the dichotomous variables by country are measured in natural logarithms, the coefficients can be interpreted as elasticities. ***,**Denotes statistical significance of 1 and 5 percent, respectively
Source: Prepared by the authors on the basis of data from *Wine Spectator*

Table III.
Price premiums and discounts by reputation of diverse regional and country wine producers in comparison to California's Napa Valley region

growth rates in Australian exports to the US created a generic reputation problem for the country." A similar phenomenon occurs with the wines of New Zealand, which also undergo a process of widespread growth (commoditization) of the large industry that contradicts the emerging success of boutique firms.

The spectacular performance of the Napa Valley wines (due to its reputation) is reflected in its price premium compared to new entrants of the New World but also compared to traditional French wines. France, represented in our study by Burgundy (a region which exports even better wines than Bordeaux), loses its supremacy over Napa, from an initial premium of 60 percent in 1997 to a small discount of almost 10 percent in 2007.

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Table IV shows the result of a second specification of the base model, in which the power of the varieties is analyzed separately, excluding the regions of origin. This estimate is due to the strong exclusivity that some varieties have achieved in certain regions, such as Malbec in Argentina or Pinot Noir in Oregon. This new specification prevents us from statistically separating the variety effect from the country brand effect on the selling price.

The results in Table IV document that, even when checking for quality, age and number of cases produced per vintage, the price per bottle changes depending on the variety. Regarding Cabernet Sauvignon (the variety averaged as the most expensive of the sample face), punishments or discounts per variety are mostly statistically significant. These results are consistent with those documented by Bombrun and Sumner (2003), Troncoso and Aguirre (2006) and Schamel (2009, 2010), in the sense that both grape variety and regional reputation affect the price of wine.
Table IV also shows how Australia's overproduction has eroded consumer's willingness to pay for its flagship variety, Shiraz, of whose discount, compared to Cabernet Sauvignon, increases from 16 to 42 percent between vintage 1997 and vintage 2007.

Other notable varieties are Malbec and Carmenere, for which the price discount regarding Cabernet Sauvignon in the 2007 vintage 2007 reaches 36 and 34 percent.

	Vintage					
	1997	1999	2001	2004	2005	2007
Variety						
Cabernet Franc	−0.178	−0.527**	−0.486***	−0.233***	−0.590***	−0.340***
Carmenere	−0.347	−0.431**	−0.761***	−0.497***	−0.559***	−0.340***
Grenache	−0.232	−0.354***	−0.451***	−0.347***	−0.324***	−0.436***
Malbec	−0.377***	−0.423***	−0.465***	−0.439***	−0.461***	−0.359***
Merlot	−0.087**	−0.152***	−0.289***	−0.184***	−0.286***	−0.237***
Petite Sirah	−0.348	−0.399***	−0.154	−0.260***	−0.331***	−0.449***
Pinotage	−0.404**	−0.530***	−0.470***	−0.527***	−0.599***	−0.387***
Pinot Noir	−0.128***	−0.156***	−0.132***	−0.090***	−0.134***	−0.094***
Shiraz/Syrah	−0.161***	−0.263***	−0.303***	−0.312***	−0.387***	−0.415***
Tempranillo	−0.242	−0.329	−0.478***	−0.550***	−0.554***	−0.481**
Zinfandel	−0.156***	−0.264**	−0.233***	−0.273***	−0.295***	−0.241***
Blends and other reds	0.643***	0.062**	−0.130***	−0.145***	−0.231***	−0.133***
Control variables						
Wine Spectator Score	5.260**	5.490***	1.738***	4.674***	5.508***	7.560***
Age	0.670**	0.477***	0.542***	0.586***	0.509***	0.402***
Boxes produced	−0.079**	−0.156***	−0.176***	−0.161***	−0.179***	−0.169***
Adjusted R^2	0.497	0.554	0.472	0.541	0.573	0.614
Observations	2,513	2,998	3,152	3,221	4,007	4,068

Notes: Cabernet Sauvignon was used as a reference to calculate the premiums and discounts. For example, compared to Cabernet Sauvignon, Cabernet Franc from the vintage of 1997 has a discount of 17.8 percent, while the 2007 vintage is punished by 9.6 percent; the values in the cells show the parameters estimated for each variable in cross-sectional regressions, one for each year. Given that all variables other than the dichotomous variables by country are measured in natural logarithms, the coefficients can be interpreted as elasticities. ***,**Denotes statistical significance of 1 and 5 percent, respectively
Source: Prepared by the authors on the basis of data from *Wine Spectator*

Table IV. Price premiums and discounts of various wine varieties in the world compared to Cabernet Sauvignon

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These discounts are very favorably compared to the 66 and 67 percent obtained by Argentina and Chile when a third model specification is estimated, this time only including dummies by region/country without distinguishing between varieties. These results are documented in Table V.

The results shown in Table V, as well as the results of the base model documented in Tables III and IV, indicate how in the last four vintages studied, Australia's reputation as a producer of premium wines is eroded (the price discount of the country's 2007 vintage was the same as in Argentina and Chile), and how the Napa Valley's reputation grows in time with respect to its neighboring Sonoma.

5. Conclusions

The country brand is a public good that can play in favor or against the wines that a region/country produces. The aim of this paper is to analyze whether or not the reputation of a region or country, and therefore consumer's willingness to pay for wines from the particular geographical area, depends or not on consumers identifying a specific variety with certain wine regions.

Our results show that although the variety specialization has successfully underpinned the reputation of some New World regions such as the Napa Valley (with its Cabernet Sauvignon) or Oregon (with its Pinot Noir); in others, such as Australia (with its Shiraz), this has not been without problems. The exponential growth in the volume of lower quality Australian wines produced over the last ten years caused an overall drop in quality, which has seriously harmed Australia's previously healthy country brand.

Table V. Price and reputation premiums and discounts for different wine producing regions and countries worldwide compared to the Napa Valley of California, USA

	Vintage					
	1997	1999	2001	2004	2005	2007
Country or region						
Argentina	−0.464***	−0.585***	−0.697***	−0.718***	−0.730***	−0.671***
Australia	−0.318***	−0.432***	−0.552***	−0.574***	−0.622***	−0.664***
Borgoña	0.515***	0.057	−0.189***	−0.201***	−0.317***	−0.128***
Chile	−0.499***	−0.535***	−0.823***	−0.743***	−0.751***	−0.660***
New York	−0.515***	−0.518***	−0.831***	−0.679***	−0.793***	−0.674***
New Zealand	−0.283***	−0.292***	−0.292***	−0.413***	−0.579***	−0.509***
Oregon	−0.933***	−0.367***	−0.410***	−0.389***	−0.421***	−0.291***
Sonoma	−0.211***	−0.242***	−0.356***	−0.357***	−0.377***	−0.405***
South Africa	−0.603***	−0.643***	−0.692***	−0.705***	−0.793***	−0.728***
Control variables						
Wine Spectator score	4.453***	4.791***	1.582***	4.451***	5.217***	6.718***
Age	0.578***	0.451***	0.459***	0.425***	0.345***	0.287***
Boxes produced	−0.116***	−0.130***	−0.148***	−0.131***	−0.158***	−0.136***
Adjusted R^2	0.621	0.573	0.609	0.541	0.643	0.674
Observations	2,513	2,998	3,152	3,221	4,007	4,068

Notes: The region Napa California, USA was used as a reference to calculate the premiums and discounts. For example, compared to the Napa wines, wines from Australia's vintage of 1997 have a price discount of 31.8 percent, while the wines of the vintage of 2007 were punished with by 66.4 percent; the values in the cells show the parameters estimated for each variable in cross-sectional regressions, one for each year. Given that all variables other than the dichotomous variables by country are measured in natural logarithms, the coefficients can be interpreted as elasticities. ***,**Denotes statistical significance of 1 and 5 percent, respectively

One of the practical implications of this study is that, in order to successfully build a collective reputation of an entrant country, an institutional framework that mediates differences of interest between the large and small vineyards and also that regulates the free-rider problem in the wine market is required.

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Corresponding author
Dr Rodrigo Saens can be contacted at: rsaens@utalca.cl

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