

Gradual Catch Up and Enduring Leadership in the Global Wine Industry

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FORTHCOMING RESEARCH POLICY

Abstract

The wine industry is an extremely interesting case from a catch up point of view because the latecomers in the international market have changed how wine is produced, sold and consumed and, in doing so, they have challenged the positions of incumbents. Until the end of the 1980s, the European countries, and particularly France and Italy, dominated the international market for wine. Subsequently, significant changes in the market, namely decreases in consumption by traditional consuming countries, the entry of new inexperienced consumers, and the increasing importance of large distribution have threatened this supremacy. Initially, the USA and Australia and later emerging countries such as Chile and South Africa, gained increasing market shares in both exported volumes and value, at the expense of incumbents. However, some of these new comers (e.g. Australia) have shown slower growth, opening opportunities for newer entrants such as Argentina and New Zealand. At the same time, some of the incumbents (especially Italy) have innovated challenging the leadership of France in key markets such as the USA.

In this paper we investigate the different catch up cycles in the global wine sector that have occurred between the 1960s and 2010, through a detailed analysis of export volumes, values and unit prices. We address issues related to the increasing share in the global market of latecomer

countries and the relative decline of the incumbents, as well as possible changes in the market leadership within these two groups.

Keywords: Wine industry, Catch up, Emerging countries, Trade

JEL: F14, O30, Q1

HIGHLIGHTS

- We investigate the different catch up cycles in the global wine sector between the 1960s and 2010.
- Changes in demand opened the first window of opportunity for latecomers, who have gradually caught up via a path-creating strategy based on innovation.
- Incumbents maintained their leadership by aligning their wines to current demand patterns.
- The entry of China in the wine market can open up a new catch up cycle.

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1. Introduction

High-tech sectors such as electronics, software, pharmaceutical and telecommunications are usually the focus of the studies on catching up in emerging countries. These industries are known globally for having sparked economic growth in selected countries, such as Japan and South Korea in the 1980s and 1990s, and India and China in more recent years. Nevertheless, there is little doubt that in a large number of developing countries the agro-food industry still significantly contributes to GDP. Though often depicted as low value-added and characterised by low levels of innovation, the agro-food industry is a sector with considerable opportunities for technological and rent upgrades. UNCTAD (2009) identifies a group of dynamic and competitive middle-income countries, including Argentina, Brazil, Chile Thailand and Malaysia, which have become exporters of high quality, processed primary products. Some authors envisage an ongoing process of *de-commodification* of primary commodities, which is increasingly transforming standardized staples into high-quality, diversified, processed goods, with raising barriers to entry, high knowledge intensity and technological dynamism, high value added content and export unit prices (Farinelli, 2012; Kaplinsky and Fitter, 2004; Kaplinsky, 2005; Perez et al., 2014).

Among the most dynamic primary industries is wine, which is an extremely interesting case from a catch up point of view because the latecomers in the international market have changed how wine is produced, sold and consumed and, in doing so, they have challenged the position held by the incumbents (Giuliani et al., 2011). Until the end of the 1980s, the European countries, and particularly France and Italy, dominated the international market for wine. Subsequent changes to the market, namely decreased consumption of wine by traditional consuming countries, entry of new inexperienced consumers and the increasing importance of large distribution have threatened this supremacy. Initially the USA and Australia and later emerging countries such as Chile and South Africa have gained increasing market shares in terms of exported volume and value, at the expense of the incumbents. More recently, due to the higher involvement of consumers and the increasing attention to variety and regional specificities in some market segments, the growth of some new producers, such as Australia, has slowed, opening opportunities for late followers such as Argentina and New Zealand as well as for incumbents (especially Italy), which have been able to innovate within their traditions (Mariani et al., 2012).

Furthermore, we can envisage new changes induced by the rapidly growing Asian markets, which currently represent a small share of global demand, but have the potential to become important wine industry actors.

In this paper we investigate the different catch up cycles occurring from the 1960s to 2010 in the global wine sector, through a detailed analysis of export volumes, values and unit prices. We address issues related to the increasing share in the global market of latecomer countries, and the relative decline of the incumbents, as well as possible changes in the market leadership within these two groups.

Section 2 provides a brief account of the literature on catch up and considers catch up in the wine industry since the 1960s. Section 3 presents an analysis of the evolution of the industry based on trade data. Section 4 provides a detailed analysis of the entry of the New World (NW) producers explaining how market changes opened a window of opportunity, and induced transformations to the innovation and knowledge base of institutional settings. Section 5 discusses the resurgence of Old World (OW)¹ countries in the international market and Section 6 examines the rise of new actors among the latecomers. Section 7 proposes a new cycle following the emergence of Asia as both a rapidly growing market and a new source of production. Section 8 concludes.

2. The theoretical framework

2.1. Catch up and windows of opportunity

According to Abramovitz (1986), catch up is a process going far beyond the mere adoption of new technologies, and depends on the ability of countries to build some ‘technological congruence’ with leaders as well as on their own ‘social capabilities’. The first concept indicates the conditions that latecomers need to share, at least to a certain degree, with leaders, in order to adopt their models. These might refer to economic factors such as market size, availability of inputs and consumer tastes. The second concept refers to issues such as technical competence, education infrastructure and the broader institutions supporting the building up of technological capabilities.

Following Abramovitz’s pioneering contribution, the literature on innovation systems in developing countries has shifted the emphasis in the catch up debate from resource endowments and comparative advantages, to institutional variables, capabilities, and dynamic creation of

¹ The terms *Old World* and *New World* are commonly used to distinguish traditional European wine producers and latecomers in the international market.

competitive advantage (Lundvall et al., 2009). In this literature, catch up is more than simply copying new technologies; it requires creative adaptation and innovation along and beyond the pathways followed by forerunners. Therefore, in their catching up effort, latecomers do not simply follow the technological paths of the advanced countries; they may skip some stages or create their own individual paths (Lee and Lim, 2001).

Late entrants build on existing knowledge, but eventually depart from it to follow their own development trajectory. Perez and Soete (1988) and Lee and Malerba (2016) suggest that departure occurs with the opening of a window of opportunity. These opportunities may emerge as a result of changes to the prevailing techno-economic paradigm, because of a business downturn cycle characterized by abrupt changes in market demand and by the rise of new consumers, or because of major modifications in government regulations or policy interventions. At such turning points, take over becomes possible because the incumbents are locked into existing technologies, management practices, labour skills, markets and institutional routines. The burden of previous investments makes it difficult for them to appreciate the changes taking place in the external environment and to endorse them. This eventually hampers and slows the adoption of new technologies, adaptation to new market characteristics, new regulations and institutional frameworks of the leaders, while for countries not bounded by the old technology, traditional markets and the related institutional context the opportunities abound.

Due to windows of opportunity, a variety of catch up experience can be identified across countries and sectors. The approach based on the sectorial systems of innovation provides a useful framework for an empirical investigation of this experience. It stresses the need to take account of the coevolution of markets, technologies, production modes and organizational forms whose determinants and influences cut across national boundaries, and also idiosyncratic elements that might explain the capacity of specific latecomers to take advantage of technological and/or market opportunities (Malerba, 2002; Malerba and Mani, 2009). A sectoral perspective is relevant to analyse the determinants of the catch up process because it identifies the different key elements that are specific to each industry, and emphasizes the international, national and local conditions that may amplify or hinder sector specific evolutionary mechanisms.

This is the perspective adopted in this paper to investigate developments in the global wine industry, which represent a case of catch up in which the latecomers follow a path-creating

strategy and the incumbents, instead of disappearing, react to the challenge and creatively adapt to the new emerging path.

2.2 *Catch up in the wine industry*

In the wine industry, catch up began in the mid-1990s when latecomers, such as Australia and USA, followed by emerging economies including Argentina, Chile and South Africa, took advantage of changing needs in the international market. These countries experimented with new pathways of technological modernization, product standardization and market innovations, which mostly diverged from the established business models characterizing the OW countries. In contrast to what Lee and Ki (2016) envisage for a very diverse sector such as the steel industry, in the wine case, the initial competitive advantage of latecomers was not primarily cost, but rather innovation in products and processes and the establishment of a conducive institutional set up (Giuliani et al., 2011). Cost advantages did play a role, although complementary to innovation and technological change in successive stages of catch up, as firms from latecomer countries consolidated their positions in the international market. Wine production in countries such as Australia, Chile and South Africa, benefited from availability of inputs (e.g. land), economies of scale and, in some cases, cheap labour. Successively, the new paradigm in the wine industry, based on a market-driven scientific approach to wine production, influenced the industry knowledge base and the relevant industry actors (e.g. universities, regulatory bodies, companies) among OW producers. In the wine industry, in contrast to Lee and Malerba's (2016) prediction that no one lasts forever, and despite the decline in their market shares over the last 30 years, the incumbents (i.e. the top EU producers) have been able to sustain their leadership.

To understand why in this particular industry, newcomers are still in a stage of a gradual catch up and the incumbents have not lost their market leadership, we propose several idiosyncratic reasons. First and most importantly, the wine industry, like other agricultural sectors, can be classified as a typical 'supplier dominated' sector (Pavitt, 1984), and characterized by slow and gradual technical change. In many agricultural industries very few firms carry out R&D activities, and among those that do, R&D expenditures are not comparable with those in the manufacturing sector. Most innovation and research efforts are conducted by the supplier industries (e.g. equipment manufacturers, suppliers of fertilizers, seeds, pesticides) or public research organizations, and the results are diffused to farmers via public extension services

(Pardey et al., 2010).² Competitive advantages derive mainly from the capabilities that firms accumulate over time, and there is limited space for radical discontinuities to be exploited by latecomers, which inevitably slows the catch up process.

Second, agriculture reacts more slowly than manufacturing to changes, due to the former's social and geographical specificities and economic and profitability issues. Agricultural activities are strongly rooted in territory and community due to soil, climatic and morphological characteristics as well as historical traditions and the accumulated pool of informal knowledge. Some of these conditions are fixed; others can be changed but only over decades (unless a major crisis erupts). Therefore, the disappearance of farmers and their activities, especially those typical of a given territory, do not occur in the same manner and at the same rate as, for example, the declines in steel and car production. In other words, in addition to economic considerations, non-economic factors also matter in this context. This applies in particular to those European countries where wine production is rooted in hundreds if not thousands of years of history and tradition.

Third, wine is a typical *cultural commodity* and its intangible characteristics, efficaciously summarized in France with the notion of *terroir*, or the concept that a single plot of land is endowed with an exclusive combination of characteristics that produce wine of a unique quality and character, are key assets in driving the consumers buying behaviour (Fetter, n.d.). Therefore, it may take a long time for newcomers to establish a reputation, since these features (e.g. *terroir*), which are a synonym of prestige and high quality, are by definition linked to specific geographical areas in OW countries (see sections 5.2 and 5.3).

Fourth, there are contingent factors that play a relevant role (see Section 5.3). Wine production and more broadly agricultural activities have always been heavily subsidized in the European Union. Since the inception of the European Common Market in 1957, top wine producing countries, such as France, Italy and Spain, have taken advantage of subsidies and incentives for domestic activities, as well as protection of their internal markets from foreign competition.

It should be noted that the rents generated by the regulatory protection system have recently decreased and this effect has been exacerbated by the increased competition from NW latecomers in third markets (i.e. the USA) and traditional EU wine importing countries such as

² Although the apparent innovation intensity of many areas of agriculture has been rising in recent years, resting on greater R&D investment in agricultural technologies, that innovative activity and its underlying R&D has been highly concentrated in supplier firms producing seeds and machinery for the agriculture industry – as, for instance, in the soya industry in Argentina (Marin et al. 2014).

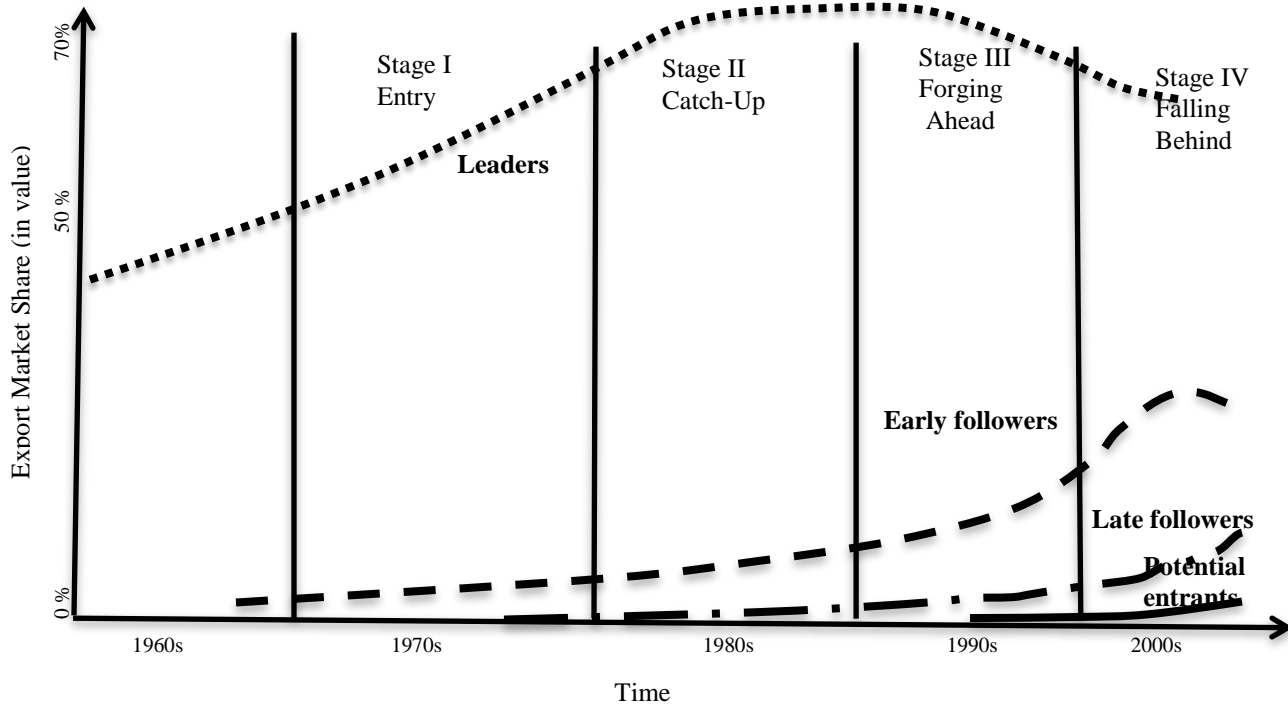
the UK and Scandinavia. World producers have embarked on innovation programmes to adapt to the challenges posed by newcomers (see Section 5). Such a pro-active reaction of the OW has made it harder for newcomers to consolidate their positions overtime, even in non-traditional markets (e.g. USA, UK, China).

So the OW producers have maintained their leadership positions in the international market, but the wine story is not necessarily one of aborted catch-up. It can be argued that, in the long run, NW producers might eventually overtake the OW countries and that a long phase of gradual catch up process is in place, as suggested by the successful entry of new latecomers such as New Zealand, to the international scene. Also, although OW countries are still at the top of world wine consumption ranking, there is a clear shift towards non-traditional consuming countries, such as China – and Asia more broadly - and the USA. In general terms Asian countries might be more sensitive to price and quality issues, and less accustomed to or interested in importing from countries with an established tradition (i.e. Europe). We argue in Section 7, that some Asian countries, and China in particular, might themselves become sizable exporters, further challenging the position of the current leaders.

Figure 1 sketches the different cycles in the wine industry:

- the dashed curve (second line from the left) identifies the still unaccomplished rise of the *early followers* (i.e. California, Australia, Chile and South Africa), which failed to overthrow the leaders (i.e. France, Italy, Spain) and are still in a process of gradual catch up (see Section 4);
- the dotted curve (first from the left) illustrates the cycle of the *leaders*, which lost market shares during the nineties and then have recovered in the 2000s being able to sustain their leadership (Section 5);
- the third curve (dash and dot line) illustrates the rise of the *late followers* (i.e. Argentina and New Zealand), which are challenging the early followers in some important markets (see Section 6);
- the solid curve (fourth line from the left) identifies the *potential entrants* (i.e. China) and hypotheses about a prospective fourth Asian cycle (Section 7), characterized by new demand and supply side actors.

Figure 1 Catch-up Cycles in the World Wine Industry



The Figure also provides an approximate indication of the time frame of the cycles (horizontal axis) and of the market share of world exports (in value) (see also Table 3). A general observation of the picture clearly shows that the evolution of the global wine industry does not follow the canonical stages of catch-up (i.e. early entrance, catch up, leap frogging, falling behind, as indicated in the Figure). In the rest of the paper we provide an analysis of the industry evolution based on trade data, describing in details each cycle.

3. Evolution of the global wine industry

As a result of centuries of tradition, in the 1960s the main European producers - France, Italy, Spain, Germany and Portugal - dominated the wine industry accounting for 63% of world wine production in volume, with France and Italy accounting for almost half (47%) (Table 1). The industry was strongly based on large and stable domestic markets, which absorbed most of the local production. In that period per-capita wine consumption reached 124 litres in France and 108 litres in Italy, well above the world average of 7.2 litres. The globalization of wine was still

to come, and a mere 11% of world wine production was exported, with France, Italy, Portugal and Spain accounting for almost 40% of the total global market (Anderson and Nelgen, 2011b).³ In the same period, the share of wine production in NW countries, such as the USA, Australia and Chile, was respectively 2.9%, 0.7% and 1.7 % (Table 1).

Table 1 – Main wine producers (% world total volumes)

	1961-1970	1971-1980	1981-1990	1991-2000	2001-2007	2007-2009	Rate of change 1961-2009
France	23.13	21.55	21.29	20.84	18.72	16.92	-21.6
Italy	24.16	22.65	21.90	21.80	17.32	17.32	-26.8
Spain	9.52	10.09	10.73	11.18	13.44	13.28	49.9
Germany	2.19	2.63	3.38	3.83	3.39	3.26	61.4
Portugal	4.18	3.08	2.77	2.60	2.54	2.28	-21.5
USA	2.93	4.75	5.77	7.42	8.91	9.35	188.9
Argentina	7.41	7.41	6.53	5.42	5.30	5.41	-18.7
Australia	0.69	1.05	1.32	2.26	4.38	4.41	519.3
South Africa	1.50	1.81	2.42	2.83	3.05	3.68	153.2
Chile	1.72	1.74	1.42	1.56	2.48	3.48	58.1
New Zealand	0.04	0.10	0.15	0.19	0.36	0.72	3584.2

(*) From 1978

Source: Faostat

The only sizeable producer was Argentina, with 7.4% of world wine production in volume, a considerable domestic market corresponding to 8% of total world consumption (Table 2) and per capita consumption as high as 83 litres.

Since then we have observed a steady decline in domestic wine consumption in France, Italy and Spain, a slowdown in demand which accelerated in the mid-1970s, and a cumulated decrease in per capita wine consumption of respectively -50%, -59% and -14% during the period 1961 to 2009.⁴ In relation to domestic markets, in the NW we can observe a mixed trend with Australia and the USA experiencing a sharp increase, and Argentina and Chile going through a decline in consumption similar to the OW countries (-45% and -43% respectively).

In non-producing countries, since the end of the 1970s, there has been a steady increase in demand. Wine has become an increasingly popular drink in the UK and among North European

³ During the 1960s North Africa, and particularly Algeria, also had a high share of world export equal to almost 47%. This was the heritage of French colonization and of the boom of wine production in North Africa as a consequence of the spread of phylloxera devastating French vineyards in the last third of the 19th century. In the 1980s North African share of world exports was less than 4 % and it was almost nil since the 1990s (Anderson and Nelgen, 2011b).

⁴In 2009 per capita wine consumption reached 39 litres in France, 43 litres in Italy and 23 litres in Spain (Anderson and Nelgel, 2011a).

consumers in the Scandinavian countries and the Netherlands (Anderson and Nelgen, 2011b). Also, demand for wine has surged impressively in Asia: Japan experienced growth of about 2,000% in the period 1961-2009 although the market is now stabilized, and in the same period consumption in China went from nil to 7.6% of world wine consumption (Table 2).

Table 2 - Main wine consumers (% world total consumption)

	1961-1970	1971-1980	1981-1990	1991-2000	2001-2007	2007-2009	Growth rate 1961-2009	Average annual growth rate
France	23.40	18.89	16.73	15.65	13.69	11.61	-50.4	-52.6
Italy	24.37	19.99	15.69	14.73	11.88	9.96	-59.1	-62.3
Spain	7.96	7.58	7.06	6.82	6.48	6.84	-14.1	-25.1
Germany	3.86	5.49	7.02	8.78	8.80	8.46	119.2	155.6
Portugal	2.91	2.65	2.57	2.45	2.19	1.78	-38.8	-36.5
USA	3.25	5.27	7.93	8.94	9.36	9.52	192.9	226.0
Argentina	8.35	7.60	7.29	6.46	5.00	4.62	-44.7	-42.8
Australia	0.29	0.62	1.22	1.54	1.90	2.19	655.2	810.4
South Africa	1.66	2.00	1.95	1.87	1.72	1.57	-5.4	20.1
Chile	1.94	1.80	1.59	1.10	1.04	1.10	-43.3	-49.9
New Zealand	0.04	0.10	0.16	0.17	0.15	0.15	275.0	502.7
China	n.a.	0.05	0.85	3.43	5.87	7.61	15120.0*	145541.4*
Netherlands	0.17	0.49	0.82	0.93	1.25	1.51	788.2	10.90
Denmark	0.08	0.19	0.38	0.64	0.72	0.67	737.5	9.09
Sweden	0.16	0.24	0.38	0.51	0.61	0.64	300.0	3.66
UK	0.58	1.19	2.24	3.44	4.80	4.68	706.9	8.14
Japan	0.06	0.19	0.42	0.95	1.15	1.17	1850.0	20.44
Russia	0.00	0.00	0.00	2.26	3.56	4.34	92.0	42.5

(*) From 1970

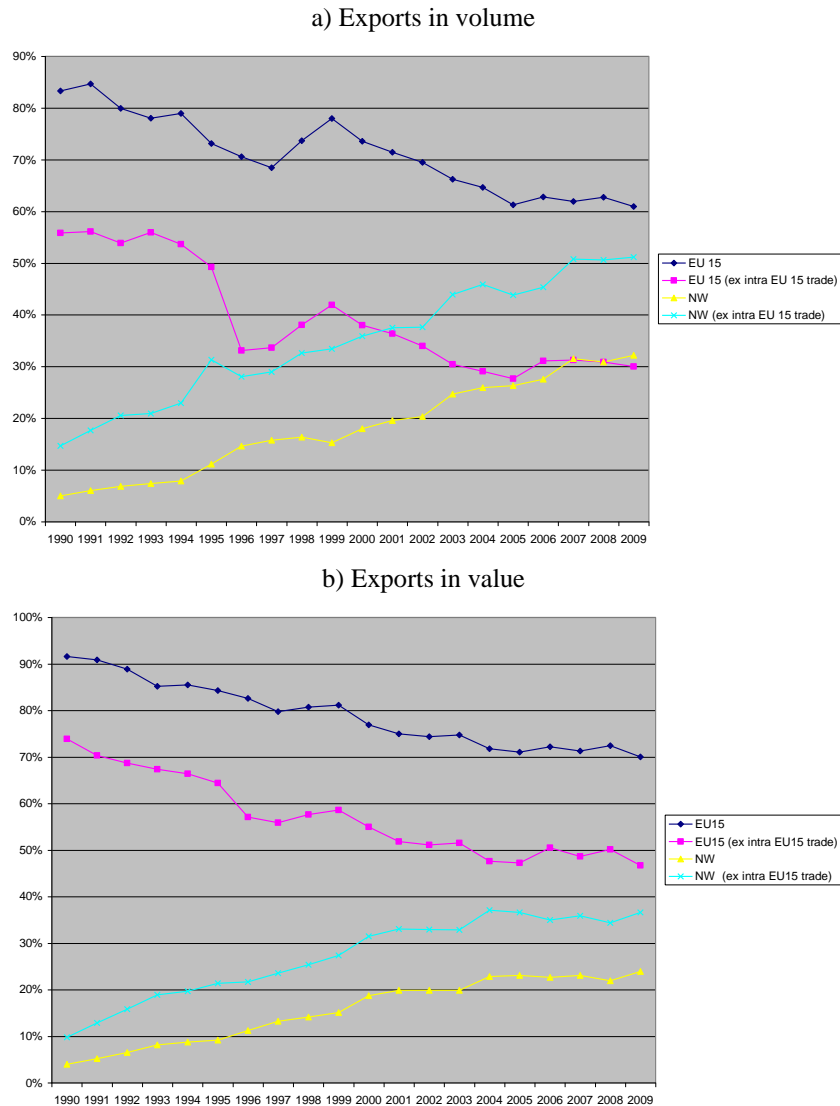
Source: Faostat

Consequently, the sluggish domestic demand in wine producing countries has partly been counterbalanced by a rise in imports from non-producing countries, allowing both OW and NW to pour large parts of their oversupply on the international market. The volume of exports as a percentage of world wine production tripled in 1961 to 2009, from 11% to 32%. NW countries contributed the most to this increase, with the volume of exports as a percentage of wine production doubling from 20% to 40% between 2001 and 2007. OW countries also experienced an increase in the export share of domestic production, although a smaller one (from 30% to 35%) (Anderson and Nelgen, 2011b).

The rapid catch up by the NW countries is depicted in Figures 2a and 2b, which show clearly how new producing countries have started to gain market share at the expense of the OW

producers. The steady convergence is particularly evident when only extra-EU trade is considered, as in Figure 2a, which shows that in 2000 the NW countries overtook the OW. Figure 2b shows that there is still a gap in value, but one that is closing rapidly.

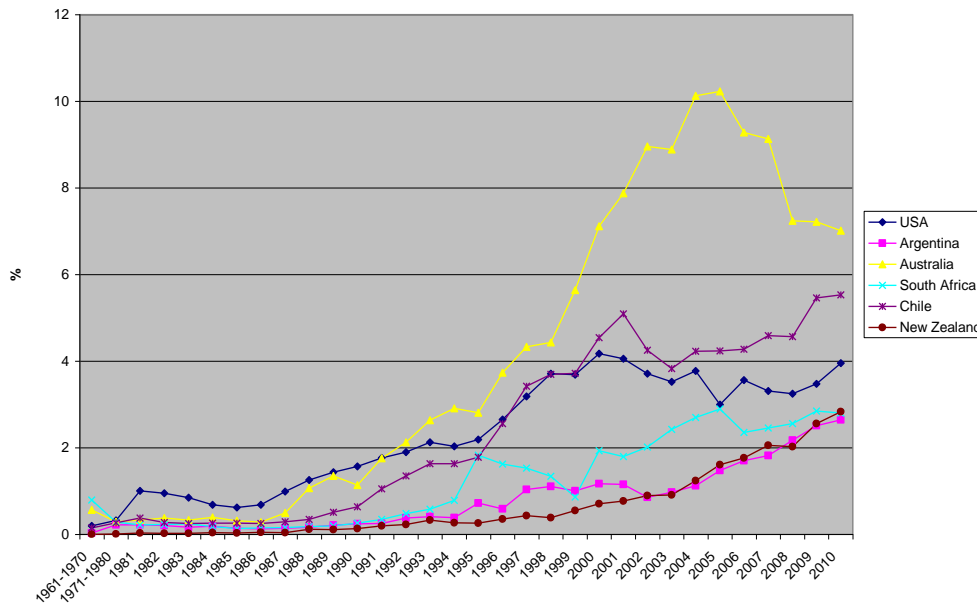
Figure 2 - EU 15 and New World share of world wine export



Source: Our elaboration on data by Anderson and Nelgen (2011a)

The frontrunners in this catch up process are the USA - California, and Australia, followed by Chile, South Africa and more recently Argentina and New Zealand (Figure 3).

Figure 3 - New World export market shares (US\$)



Source: Comtrade

Up to the end of the 1980s, the NW countries' share of world wine exports countries was small, but since the 1990s their presence in the global wine market has increased spectacularly (Tables 3a and 3b). Australia is the undisputed leader among the NW countries. It has experienced an export growth rate higher than 2,500% in volume over a 50 year time span (1961-2010); its export share in volume jumped from a mere 0.3% in 1961 to 2.3% in the mid-1980s, reaching a peak in 2006 (9.1%) to slightly decrease in volume down to 8.16% in 2010 (see Section 6 for an explanation of this slowdown) (Table 3a). Similarly, from zero exports in the 1960s the USA reached 3% in the 1990s and in 2013 accounted for 4.5% of world exports (Table 3a).

Following Australia and the USA, Chile and South Africa have also considerably increased their presence in the international market reaching respectively 5.1% and 2.7% of total world exports. Finally, Argentina and New Zealand have become the fastest growing exporters since mid 2000 (Tables 3a and 3b) and in some markets (i.e. the USA) they are even challenging the positions of some established OW and NW producers such as Spain and Chile (Figure 4) (see Section 6 for an explanation of their success).

Table 3 - World wine export: selected countries (% of world exports)

a) Volumes

%	1961-1970	1971-1980	1981-1990	1991-2000	2001-2007	2007-2010	Rate of change 1961-2010
France	13.64	16.69	25.30	23.95	19.69	14.44	-1.3
Italy	7.74	29.69	30.77	25.91	20.62	21.22	293.8
Spain	8.40	11.26	11.17	14.31	15.81	17.90	224.2
Total Leaders	29.78	57.64	67.24	64.17	56.12	53.56	
USA	0.06	0.21	1.01	3.08	4.50	4.60	10137.6
Australia	0.30	0.16	0.43	2.63	7.91	8.27	2500.3
South Africa	0.59	0.28	0.22	1.44	3.53	4.58	503.0
Chile	0.20	0.22	0.40	3.59	5.96	7.28	8980.8
Total Early Followers	1.15	2.02	4.08	10.74	21.9	24.73	
Argentina	0.04	0.52	0.50	1.62	2.65	3.69	357419.6
New Zealand	0.00	0.01	0.03	0.23	0.58	1.66	26329.1 (**)
Total Late Followers	0.04	0.53	0.53	1.85	3.23	5.35	
China	--	--	0.02	0.07	0.07(+)	0.13(+)	550(*)
Potential Entrants	--	--	0.02	0.07	0.07	0.13	

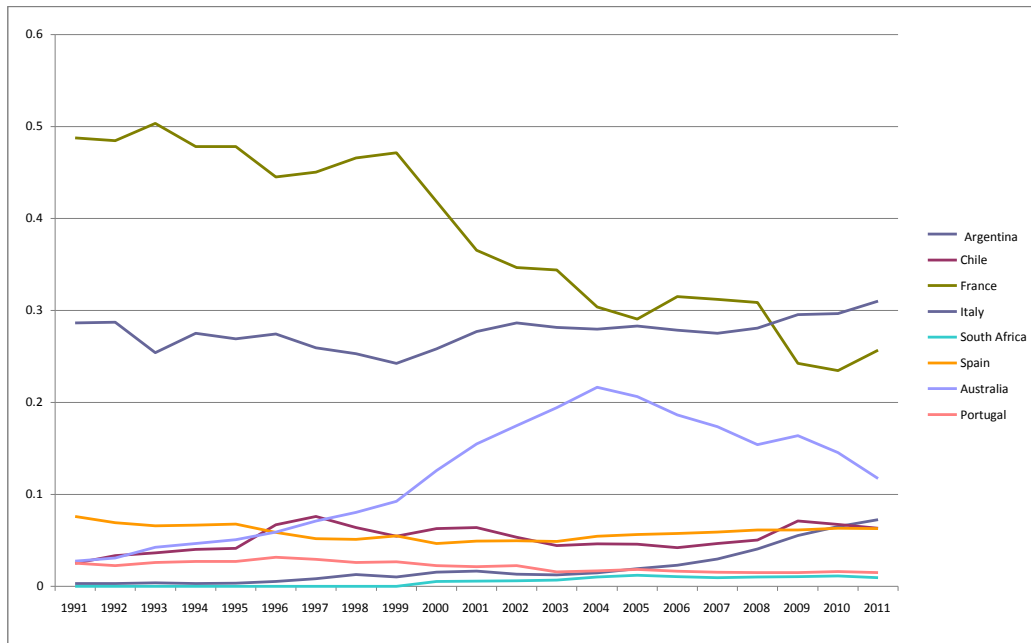
b) Values

%	1961-1970	1971-1980	1981-1990	1991-2000	2001-2007	2007-2010	Rate of change 1961-2010
France	28.89	35.80	46.04	44.46	35.92	31.46	10.9
Italy	8.07	17.89	17.55	17.53	17.84	18.53	242.9
Spain	7.28	8.88	7.48	9.32	8.96	9.18	61.6
Total Leaders	44.24	62.57	71.07	71.31	62.72	59.17	
USA	0.20	0.32	1.00	2.74	3.56	3.56	2973.4
Australia	0.56	0.29	0.61	3.75	9.21	7.16	1192.3
South Africa	0.79	0.29	0.19	1.13	2.37	2.74	210.7
Chile	0.15	0.27	0.34	2.54	4.36	5.18	7619.7
Total Early Followers	1.7	1.17	2.14	10.16	20.5	18.64	
Argentina	0.03	0.22	0.18	0.70	1.30	2.44	128769.0
New Zealand	0.00	0.01	0.06	0.37	1.32	2.47	28759.4(**)
Total Late Followers	0.03	0.23	0.24	1.07	2.62	4.91	
China	--	--	0.01	0.05	0.14(+)	0.45(+)	4400(*)
Potential Entrants	--	--	0.01	0.05	0.14	0.45	

(*) From 1986 (**) From 1973(+) including Hong Kong (Anderson and Nelgen, 2011)

Source: Faostat

Figure 4- Exporting countries to the USA market (% share, value)



Source: Comtrade

Among the OW countries, the main loser seems to be France, whose world export share has declined compared with the peak in the late 1980s (see Section 5 for an explanation of the changes among OW countries). Spain and Italy have maintained their positions with Italy in particular gaining some percentage points at the expenses of both France and the NW producers (Table 3a and 3b). If we focus on the top two producers and exporters, France and Italy, we observe a steady convergence in both volume and value of export shares. In particular, Italy, in the past a large producer of table and popular premium wines, has shifted its production since the mid 1990s towards quality wines, as shown by the increasing unit value of exports (Table 4).⁵

⁵The increase in unit value is higher for French wine than Italian wine. However, this is explained in part by the decrease in the denominator (export volume) rather than an increase in the numerator (export value). In contrast, Italy has experienced a significant increase in unit value, despite the increase in export volume. Hence, the numerator (export value) has increased more than the denominator (export volume).

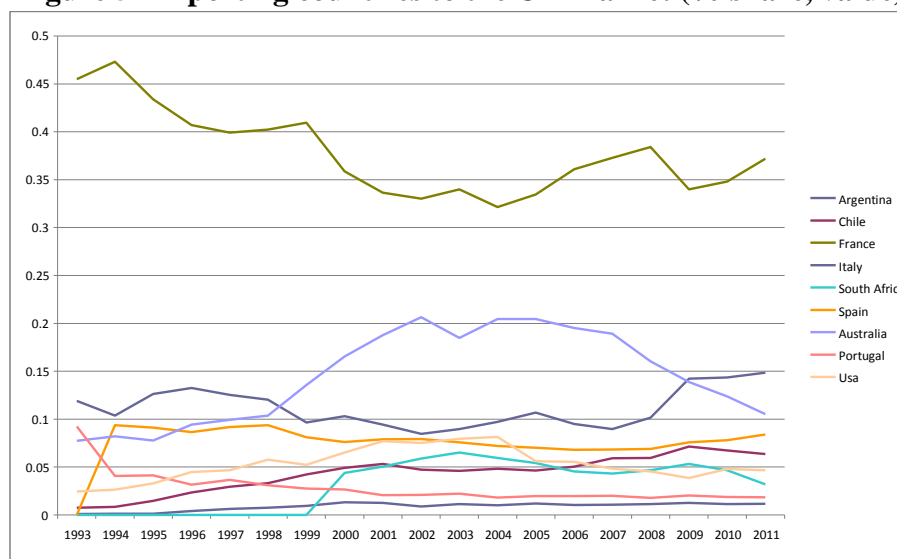
Table 4 - Unit value of wine exports ('0000USD/tonnes) 1961-2010

Yearly average	1961-1970	1971-1980	1981-1990	1991-2000	2001-2010
France	0,50	1,30	2,15	3,60	5,22
Italy	0,24	0,37	0,68	1,34	2,32
Spain	0,20	0,48	0,81	1,30	1,45
Germany	0,81	1,39	1,49	1,75	2,41
Portugal	0,20	0,84	1,74	2,43	2,59
USA	0,79	1,03	1,23	1,71	2,07
Australia	0,44	1,07	1,79	2,77	2,81
South Africa	0,31	0,62	1,01	1,58	1,72
Chile	0,20	0,81	1,04	1,42	1,92
Argentina	0,31	0,37	0,47	0,96	1,51
New Zealand	0,96	1,23	2,20	3,26	5,45
World Total	0,23	0,61	1,18	1,94	2,64

Source: Faostat

Italy has overtaken France in some key markets such as the USA (Figure 4), consolidated its leadership in large markets such as Germany, and gained position in the UK, the largest import market (see Figure 5). However, France is still the leader for export value, with a world share (31.5%) twice that of Italy (18.5%) (Table 3b).

Figure 5- Exporting countries to the UK market (% share, value)



Source: Comtrade

The dynamics of the catch up process appears even clearer if we focus on the relative position of NW vs. OW in some key markets. The case of the UK, the largest importer of wine in the world,

is emblematic. Traditionally, OW producers, especially France, dominated the UK market; however, since the reform of the wine licensing system in the late 1970s (Anderson and Nelgen 2011b), local supermarkets and large retailers increasingly began to source wine from NW countries, most notably Australia (see Section 4.1), which by the end of the 1990s had become the second largest exporter to the UK after France (Figure 5). Similarly, in the US market, the second largest in value and volume, at the end of the 1990s, Australia overtook Spain, which in 2008 was in turn overtaken by Chile, becoming the fourth largest exporter to the USA (Figure 4).

Overall, the evolution of the global wine industry over the last 50 years suggests that the leadership of incumbent producers, though weakened by a disparate group of highly competitive countries and producers, continues undisputed. In particular, the top two producer, exporter and consumer countries, namely Italy and France, invariably occupy the first two positions in the aggregate global wine market as well as being the most dynamic national markets. In the next sections we discuss how the NW has been able to challenge the OW, which factors have allowed the OW to retain their leadership, and ongoing changes among the group of new comers in the global wine market.

4. The gradual, not yet completed, catch up cycle of the NW early followers

4.1 The window of opportunity: changes in the market

Since the late 1970s, a quantitative shift in demand accompanied by a qualitative transformation in consumers' tastes represented a major turn-around for the world wine industry, which generally has favoured expansion by the NW countries. The historical event marking a radical shift in the world wine market was the so-called 'Judgement of Paris', an international wine competition held in Paris in 1976, when French judges carried out blind tasting comparisons between French and Californian wines and, to everyone's surprise, rated Californian wines higher.

What triggered the initial success of NW wine producers was a combination of changes in the international market concerning the main traditional consumers, the opening of new opportunities in countries where wine traditionally had not been widely drunk, and a revolution in the distribution system. This combination of market related elements created a window of opportunity that facilitated the entry of latecomers in the wine global market.

In Section 3 we discussed how wine production in countries such as France and Italy traditionally was directed mainly to satisfying large internal demand. In these and other European wine producing countries such as Portugal and Spain, wine was considered a staple food, was served with every meal in every family with more attention to price than quality, and was often bought directly from local producers as bulk wine. Since the 1970s, the traditional European producing countries have experienced a drastic reduction in the quantity of wine being consumed, which has been driven by lifestyle changes, to wine becoming a beverage for special occasions, and selected with much more attention to quality than before. In fact, the reduction in the volume of consumption has been matched by an increase in unit value, due to a shift in the type of consumption from bulk to premium wines (see Section 3 for details).

The increasing popularity of wine as a beverage opened up market opportunities in countries with very little tradition of wine consumption. Anderson and Nelgen (2011b) show that the first significant window of opportunity in the sector opened in the 1970s with the change to UK regulation that allowed supermarkets to retail wine, giving rise to a new market dominated by the post-war baby-boomers who had achieved adulthood. Based on Australia's close historical ties with the UK, Australian wine companies recognized and responded to this new market opportunity. UK supermarkets required large volumes of consistent, low-priced branded premium wines, and this new trend boosted Australian wine production and exports, which competed with the more expensive, lower quality Italian and French wines, typically sold in the UK market.

The radical transformation in wine demand spread from the UK to other non-traditional markets such as the USA and the Nordic countries, involving consumers with no prior experience of wine consumption, such as younger generations and women. These new consumers lacked the experience to appreciate differences related to wine regions, and had no knowledge about European appellations. Their preference was for 'easier-to-drink' fruitier, lighter and more affordable wines from the NW.

The quality upgrading of wine demand coincided with an increase in wine purchases from supermarkets and the rising importance of large-scale distribution. To exploit the new, rapidly growing markets, supermarkets required large volumes of good quality, easy to drink, international wine varieties such as Sauvignon, Cabernet and Chardonnay. In the 1990s, supermarkets also began to source and ship wine directly from NW producers, with great reductions in costs allowing lower retail prices (Muhammad, 2011).

Australia and California were the first to take possession of the new international market segment, taking advantage of their favourable land and capital factor endowments (Anderson and Nelgen, 2011b). US wine experts played a major role in changing established perceptions and altering the reputation and media recognition of wine regions traditionally associated with low quality segments and low status in international markets. In response to this market evolution and to send a clear and strong message to consumers, Australia chose to promote *Brand Australia*, ignoring differences among wines and regions in a bid to target the ‘popular-premium’ (US\$ 2.5-7.5) segment of the world market (Aylward, 2006).

Due to these pervasive market changes, the definition of wine quality ceased to be the exclusive domain of producers⁶ and strongly influenced by the characteristics of *terroir*, and control shifted to consumers and the perceived value in the market (Pretorius et al., 2006: 408). Also, the capacity to build the reputation of a specific wine became a major competitive advantage in a market characterized by a large and increasing share of relatively inexperienced consumers. Quality ratings provided by wine experts and guides played an increasing role in shaping the perception and behaviour of potential consumers (Odorici and Corrado, 2004).⁷ Following the way opened by California and Australia, the positions of other NW producers changed in the international market. The latecomers include Chile and South Africa, whose wine industries began to surge in the late 1990s, and more recently, in the second half of the 2000s, Argentina and New Zealand (see Section 6).

In the NW, the fast penetration in many different markets worldwide has been facilitated by the presence of large corporations with differentiated portfolios of wine brands.⁸ The branding and volume capabilities of the leading global wine firms and their ability to produce wines of a consistent quality, satisfy the requirements of supermarket channels, which prefer to buy from a few large suppliers in order to reduce their procurement costs. Since the late 1990s, NW

⁶In addition to producers, in France wine merchants traditionally played a key role in influencing the perception of quality in the market (Patchell, 2011).

⁷In addition to the increase in market shares, the increasing importance of NW countries as leading global players can be seen in qualitative indicators such as awards in international competitions and tastings. For instance, in the international ratings provided by *Wine Spectator*, one of the most influential and reputed international wine magazines, Australia, Argentina, Chile and New Zealand have all seen an increase in the number of their wines ranked at the top, although France, followed by Italy, has maintained its leading position.

⁸ Among the top world wine companies (measured by turnover in 2011), Constellation Wines, a branch of the US group Constellation Brands, is the largest, the third largest is the Australian Treasury Wine Estates, the South African Distell which is the fourth largest and Vina Concha y Toro from Chile which is 6th largest (Mediobanca, 2013). Specifically, ranked second is LVHM, part of the French luxury group, which is specialized in champagne and fifth is Yantai Changyu Pioneer Wine from China, which entered the ranking for the first time in 2011.

countries have been protagonists in an intensive process of international acquisitions, driven, among other reasons, by the opportunity to source grapes at competitive prices from multiple areas, and the opportunity to acquire key brands (Anderson et al., 2003).

4.2 *Changes in the innovation and knowledge bases*

To take advantage of the market opportunities, among the NW countries, with the USA and Australia leading the way, large investments were directed to modernizing and improving viticulture and oenology techniques (Cusmano et al., 2010). Although the owners of advanced knowledge remained located in the OW, the NW countries have exhibited impressive commitment to setting up new research institutes and establishing other institutional arrangements to support the development of their wine industries. In a recent book, Giuliani et al. (2011) suggest that the NW's successful strategy of 'building up' wine products that fit with the new international tastes is based on a mix of factors: domestic accumulation of scientific and technological capability aligned with market objectives, openness and access to foreign knowledge and technologies, and strong linkages between local research communities and the industry. Following Lee and Malerba (2016), it can be argued that this strategy represents a deliberate attempt of the NW to *endogenise* the exogenous changes occurring on the demand and supply sides, by adapting their internal knowledge base and their institutional infrastructure.⁹

In relation to scientific advancements, several authors (Cassi et al., 2014; Glänzel and Veugelers, 2006) provide evidence that emerging countries, such as Chile, Argentina and South Africa, are rapidly catching up in terms of knowledge production, as shown by their increasing share of international scientific publications in wine related disciplines. There is also empirical evidence of a growing degree of openness among research and industry communities in the NW. Chilean and particularly South African scholars have substantially increased their international scientific collaborations. Australia has recently emerged as a key scientific actor in the global wine research community together with the USA, France and Italy and its researchers in universities and research institutes have provided important access to international scientific knowledge for the domestic industries (Cassi et al., 2014). The significant proximity between science and industry has been facilitated by the fact that most wineries currently employ highly qualified agronomists and/or oenologists, whose language and codes of communication are similar to those of their peers working in universities.

⁹ We thank an anonymous referee for having suggested this point.

Universities play a prominent role in training and educating new generations of experts, specialized in fields ranging from agronomics and oenology to chemistry, engineering and biotechnology, whose skills have been critical for promoting technical change in the industry. These highly qualified professionals, sometimes described as flying winemakers, work as consultants for wine companies around the world and transfer massive amounts of tacit knowledge, contributing to the diffusion of a new more rigorous approaches to winemaking (Giuliani and Bell, 2005; Farinelli, 2012).

4.3 Changes in the institutional settings

Institutional changes have played an important role in the catch up of NW producers. The successful experience of Australia became best practice for latecomers, especially South Africa and later Chile. However, the implementation of this practice has proved difficult in contexts, such as South Africa, that are characterized by political instability and incipient institutional capital. The Australian experience in institutional building is a case of successful centralization and co-ordination at national level, setting export-oriented priorities and research targets, and promoting and socializing a vision for the industry at large, all of which are highly demanding in terms of governance capacity (Aylward, 2006).¹⁰

Among the latecomers, South Africa was the first to adopt a similar institutional strategy. A national system of market-oriented research and development (R&D) institutions was established in the late 1990s. Stimulated by government, in 2002 the South African Wine and Brandy Corporation (SAWB) was created to enhance the industry's competitiveness.¹¹ Technological innovation and market development were among its main areas of intervention along with training of human resources, social promotion and provision of information about the industry.

A process of institutional renewal has also taken place in Chile; in 2007 the two major winery associations in Chile, *Viñas de Chile* and *Chilevid*, merged to form *Vinos de Chile* to provide a single voice aimed at achieving a more coherent strategy to guide the industry. Research has been more collaborative since 2006 as the result of the establishment of two consortia, *Vinnova*

¹⁰ The main organizations representing the industry stakeholders and coordinating research tasks are the Australian Wine and Brandy Corporation (AWBC) and the Grape and Wine Research and Development Corporation (GWRDC), which plan a merger in late 2014.

¹¹ Following a process of restructuring, the South African Wine Industry Council (SAWIC) was set up to represent the main stakeholders in the industry and implement an industry strategic plan.

and *Tecnovid*, involving the two industry associations in partnership with the main research institutions and universities.

Overall the institutional settings common to many NW countries have played a key role in the catch up process by enhancing the participation of different industry stakeholders and public sector actors, in particular research organizations. The design and implementation of participatory systems involving a range of companies, including small growers, have been effective in constructing a shared vision of the industry. These mechanisms have proved successful for setting research priorities that respond to industry needs and for reinforcing linkages with academia.

5. The Old World cycle of sustained leadership

Following more than two decades of declining market share, the resurgence of OW countries in international markets has been apparent since the mid 2000s.¹² During this decade, although both NW and OW countries experienced increased exports, that latter group experienced growth in the unit value of their exports compared to little change in the former group, with the exceptions of New Zealand and Argentina (Anderson and Nelgen, 2011b).

Data disaggregated by wine typology makes this reverse in growth trends even more evident (Table 5). For example, Italian and Spanish exports of bottled wine have grown more than the Australian ones, and Italy's growth rates are comparable to those of Chile. Italy represents a particularly successful case: its world market share increased by approximately 1.7% in the first decade of 2000, among the highest growth rates experienced by any wine country in that period, with a significant share of this increase represented by both bottled and sparkling wines. The growth in exports of Italian sparkling wines (288%) is higher than all other top OW and NW producers, except South Africa.¹³ Although the emergence of Italy as a world export leader is not news in itself - Italy was at the top of the world export ranking in the 1980s (see Tables 3a and 3b) - the performance of the Italian wine industry exemplifies a successful reaction from a traditional OW producer to the challenges posed by NW latecomers. This success is based on deep transformations undertaken in its domestic industry, which has reversed the decline of an OW leader. Note that not all OW countries have been able to reverse their declining trends. For example France has continued to lose market share worldwide (see e.g. Figures 3 and 4). The

¹²Note that production and export grew in absolute terms over the period.

¹³ This surge in exports is driven mainly by the success of *Prosecco* sparkling wine, which has become a top seller in key markets such as the UK (see <http://www.thedrinksbusiness.com/2013/01/prosecco-outperforming-champagne-in-uk/>).

enduring loss of competitiveness of the French wine industry is illustrative of the difficulties that incumbents experience when challenged by newcomers. In particular, the French decline in market share can be ascribed to structural weakness in some parts of its industry. In contrast to Spain and Italy, the French wine industry is strongly polarized between two broad types of wine regions: on the one hand, regions specialized in the production of high volumes of mid-low priced wines (e.g. Languedoc), which have suffered the most from external competition, and on the other hand, regions that host prestigious vineyards (e.g. Burgundy, Bordeaux, Champagne among many others), whose international reputation has increased and which contribute the most to French worldwide leadership. The main factors behind the resurgence of the OW are investigated below.

Table 5 - Wine exports (thousands US\$) by category

	All wines				Bottled wine				Bulk Wine				Sparkling Wine			
	Value	Growth 2001-11 (%)	World share		Value	Growth 2001-11 (%)	World share		Value	Growth 2001-11 (%)	World share		Value	Growth 2001-11 (%)	World share	
			%	Δ 2001-11 %			%	Δ 2001-11 %			%	Δ 2001-11 %			%	Δ 2001-11 %
France	9180.482	87	30.5	-8.6	5818.216	81	26.5	-7.3	345	20	13.6	-11.6	3015.912	114	62.8	-7.0
Italy	5660.365	148	19.3	1.7	4447.126	142	20.9	2.3	490	76	17.0	-9.8	676.1989	288	13.9	6.3
Spain	2792.042	139	8.6	-0.3	1740.375	131	7.8	0.1	499	130	14.2	-3.9	514.8022	137	9.5	-0.5
Australia	1859.746	96	7.1	0.2	1471.271	67	8.1	-0.8	317	610	9.5	6.5	71.19293	210	1.5	0.5
New Zealand	834.6974	793	2.5	1.8	722.6974	736	3.1	2.2	104	17966	2.2	2.1	7.728604	20	0.2	-0.1
Chile	1621.768	165	5.4	1.0	1352.066	156	6.2	1.0	246	208	8.2	2.0	13.82782	273	0.2	0.1
Argentina	793.9252	437	2.5	1.4	694.7165	459	3.0	1.7	78	418	2.2	1.0	18.81898	127	0.4	-0.1
USA	1223.549	134	3.5	-0.7	955.9188	107	3.4	-1.5	233	442	8.1	4.9	34.30052	94	0.7	-0.2
South Africa	767.5233	224	2.8	0.9	523.8678	156	2.8	0.5	212	655	6.7	4.3	31.66198	802	0.6	0.4

Source: our elaboration on data by Anderson and Nelgen (2011a)

5.1 Modernisation in the Old World wine industry

After an initial inertia, the OW industry embarked on a major modernization process following the strong emergence of NW in global competition. The Italian, the Spanish and to a lesser extent the French wineries embraced the new market-driven model of production (see Section 4) shifting away from the traditional supplier-driven approach that dominated the industry in the past. In the OW, this shift implied many non-competitive wine farmers abandoning production, and some previously unspecialized grape growers emerging as professional winemakers and full time entrepreneurs. Frequently, idiosyncratic behaviours were replaced by a focus on quality and price (Pomarici, 2008). These customer driven changes aligned the domestic industries of the OW countries with international production and marketing standards required by large buyers and importers.

The shift in focus toward quality is evident in several of the activities of winegrowers, viticulturists and oenologists - in the vineyards and in the cellars. For example, innovations represented by experimentation with testing clones, and replanting, have become common practice for many winegrowers. Environmental as well as efficiency concerns have pushed wineries to adopt precision viticulture, and advanced technologies, such as infrared, are being employed in the vineyards to optimize canopy management and uniformity and consistency of the grapes. Cellars have been transformed from dusty neglected spaces, to areas equipped with steel tanks, electric grape sorters and cooler machinery. In some cases, cellars have become tourist attractions built by 'archi-stars'.¹⁴ New technological developments and scientific discoveries have been incorporated in wineries, to different extents, either through the direct initiatives of the winemakers or as a result of consultations with oenologists and viticulturists employed by these firms or the inter-professional organizations supporting their activities (Morrison and Rabellotti, 2007).

Alongside the adoption of new technology, modernization has included more attention to marketing and branding. For example, screw cap bottles of European wines, and wine in boxes, have become common for table wines. Increasingly, individual wineries and wine consortia are contracting with communication and marketing agencies to advertise their products, especially to

¹⁴ Examples are the cellars in the Northern Spanish wine region of La Rioja built by Calatrava for Ysios and Hadid for Tondonia.

enter international markets (often supported by national vouchers under EU wine policy - Section 5.3).¹⁵

Although the wine industry in the OW countries is still characterized by a fragmented structure dominated by a majority of small independent winemakers, there has been a remarkable process of consolidation worldwide since the late 1990s; in Italy, two cooperatives have merged to become the 7th largest world company (Mediobanca, 2013).

The above examples show that in the whole range of production, organisation and distribution activities, the gaps and differences between OW and NW producers have narrowed or even disappeared. The fortunes of the OW countries have been renewed through the introduction of a successful mixed strategy based on a market driven approach coupled with strong differentiation of brands and wines tightly connected to their territorial and historical specificity. For example Italy and Spain have upgraded their competences in popular as well as top quality wines (e.g. sparkling), and innovated in order to address new consumer requirements while keeping the industry firmly rooted in the local *terroir*. Similarly, the competitive advantages of world-renowned French wines (e.g. Champagne, Bordeaux) have been reinforced based on their unique territories, and have gained market share in both traditional and emerging markets (e.g. China). In contrast, French popular wine producers' (especially cooperatives) lack of market knowledge, and dogged adherence to the *terroir* model has proved less successful because many regional appellations are not immediately recognizable by foreign consumers (Hussain et al., 2007).¹⁶

5.2 Changes in demand and the role of *terroir*

Since the early 2000s, global consumers' tastes have changed qualitatively, mainly favouring OW producers. This new class of consumers is more sophisticated and better educated, and pays more attention to variety and intangible features such as history and authenticity of the wine. These knowledgeable and demanding consumers belong to the emerging wealthy and middle classes in developed (e.g. UK) and emerging economies (e.g. China), and want mainly high-status goods (Charters, 2006; Goodman, 2003). The extraordinary growth of unit value in some

¹⁵ A successful case is Sopexa, a former French public agency, which provides a full range of strategic marketing services to promote wine and wine territories, and other agro-food products around the world.

¹⁶This argument was supported by interviews with two French wine experts. However, it should be mentioned that some changes are more recent especially among these more traditional producers. E.g., after the 2008 European reform of the wine sector (see 5.3) Languedoc wines adopted the brand 'Sud de France' (instead of relying on an appellation of origin system), in an attempt to become more recognizable for foreign consumers.

markets, such as Hong Kong and Singapore, testifies to the emergence of such sophisticated demand (see Anderson and Nelgen, 2011a: Table 202).

In this mutated competitive environment, OW producers seem to be particularly well positioned compared to NW ones, since their industry is generally regarded as both highly differentiated and rooted in old – even ancient - traditions linked to highly variegated territories. The concept of *terroir* captures this diversity coupled with history and tradition (Charters 2006), and confers on OW wines unique competitive advantage over NW producers (Wilson, 1998; Vaudour, 2002; Barham, 2003). In order to reinforce this, wine producing countries and the European Commission have introduced several schemes and legislation protecting places of origin of wines (i.e. Appellation of Origin Control - AOC system) and regulating many aspects of wine production ranging from maximum yields per hectare, oenological practices, grape varieties and labelling among others (for more details see Section 5.3).

Although it may be questionable whether wines from *terroir* regions are intrinsically better than those from NW countries may be questionable, consumers tend to attach a higher value to the former wines based mainly on the status they confer on buyers (Beverland, 2005). There is a clear country-of-origin bias (Brooks, 2003) and quite inelastic demand for these wines (Stasi et al., 2011). Thus, the diffusion of quality wines has increased over time in OW countries. For example, in Italy AOC wines contribute to more than 70% of total Italian production while production of ‘wines without geographical indication’ has dropped from 42% in 2005 to about 25% in 2012¹⁷.

The AOC system can be said to be a pillar of the OW industry and has become influential worldwide. However, it is also regarded as responsible for the loss of competitiveness of OW countries (most located in the European Union). As a result, since the late 1990s, EU policy makers have been questioning the foundations of EU wine policy, supported and stimulated by industry lobbies of large firms and cooperatives in non-AOC areas, and have made efforts to change the policy framework, resulting in a major reform in 2008. We outline this major institutional change and discuss the implication in the next section.

¹⁷ Information retrieved from <http://www.inumeridelvino.it/tag/dati-istat>, based on data by ISTAT (National Institute of Statistics Italy).

5.3 Changing regulatory environment: EU wine regulations

The EU wine sector historically was regulated by very stringent codes and rules,¹⁸ largely based on the French regulatory system (European Council, 2008; Meloni and Swinnen, 2013; Pomarici and Sardone, 2009). Before the 2008 reform, EU legislation pursued two broad objectives: preservation of quality, which was further regulated by strict national and sub-national level norms, and reduction in structural oversupply in the sector, achieved via market intervention policies¹⁹ similar to those applying to other crops under the Common Agriculture Policy.

Nevertheless, the industry's structural problems persisted until the 2008 Organization of Common Markets reform was adopted.²⁰ According to EU reformers, the strict regulation of oenological practices and wine labelling discouraged experimentation and innovation in the industry. In an attempt to halt the loss of competitiveness in the EU wine industry, the 2008 reform tackled distortions in the wine market (including those generated by previous policy interventions) and endorsed a more market-driven approach. It aimed to let consumers decide about wine quality, based on the idea that market selection mechanisms would allow the most efficient wineries to prosper and result in marginal producers disappearing from the market. As a result, the new policy framework has shifted from regulating supply towards incentives for promotion, marketing and structural investment (European Council, 2008).²¹

The new set of supporting policies and the overarching principles inspiring the new regulatory framework have tried to respond to the challenges posed by NW countries by imposing a mixed strategy to promote efficiency and wipe out inefficient and marginal producers, and to support individual (e.g. wineries) or collectives (e.g. consortia and cooperatives) to promote their

¹⁸ EU producers had to comply with specific oenological (e.g. recommended varieties) and agricultural practices (in some cases irrigation was not allowed), and technical parameters (e.g. alcohol volume, acidity) and labelling rules (e.g. until 2008 indicating the grape variety and year of harvest was prohibited for table wines).

¹⁹ Three main sets of instruments were in place: minimum prices for distilled wine, distillation or storage of surpluses with government subsidies, grubbing-up schemes and plantation rights.

²⁰ In relation to structural imbalances, in the early 1990s, 22% of total production was distilled. This percentage is halved in the 2000s although still representing 11% of total production (Meloni and Swinnen, 2013: Table 5). In 2013, 5 years after the reform, the situation had changed and the EU wine industry was suffering shortages (Pomarici, 2013).

²¹ More specifically, the reform includes no financial support for distillation or plantation rights, but lifts the ban on specific oenological practices, reducing the area of vineyards areas receiving subsidies for grubbing out vines. The reform introduced a reorganization of European wines and simplified labelling rules to improve the information provided to consumers and to facilitate comparison between European and NW wines. E.g. European wine labels for wines without Geographical Indication can now report grape variety and the year of harvesting making them comparable with NW wine labels.

production.²²At the same time, although it simplifies the appellation of origin system, the reform preserves the link between the wine and its territory, retaining *terroir as* a major distinguishing feature in the EU wine industry.

6. A new catch up cycle: entry of NW latecomers

Since the mid 2000s, another group of countries, most notably New Zealand and Argentina, have gained a position in the global market coinciding with a huge slowdown in exports of Australian wine. The reasons for this repositioning within the NW are complex and due partly to contingent factors such as exchange rate changes and the 2007 financial crisis, and partly to structural features.

In the case of Australia, the main contingent factor was the appreciation of the exchange rate due to the primary commodity boom, that impacted in particular on the prices of popular premium wines in markets such as the UK and USA, strongly affecting the competitiveness of the Australian wine industry (Anderson, 2013).

However, the deceleration in the Australian wine industry is also due to key features in the domestic model of wine production, based on R&D centralization and on the dominance of large firms (Aylward, 2008). This latter model proved to be successful when the market asked for standardised and homogeneous wines (Aylward, 2006, 2008). However, it became too rigid to address the recent changes in patterns of demand, which called for increasing product differentiation and sophistication (see Section 5.2). These latter structural problems were confirmed by key informants interviewed for this study, who also suggested that a shift towards a more regionalized research system is currently occurring, allowing marketing strategies to be more tailored to the needs of small-scale and fine-wine producers. Decentralisation and differentiation are at the top of the agendas of the main industry governing bodies, which might set the seeds for future growth (AWBC, 2007).

In contrast, New Zealand and Argentina have become very successful in the global market, mainly targeting the upper market segments. New Zealand in particular has concentrated production in the premium and super premium segments, taking advantage of recent changes in consumer preferences for wines produced in a cooler climate than that prevailing in countries such as Australia.

²² A recent report of the European Court of Auditors is very critical with regards to the effects of the promotion measures implemented under the new policy framework (ECA, 2014).

Thanks to well-functioning supporting organizations, such as the Wine Institute of New Zealand (WINZ), and the positive role of foreign investments, New Zealand has promoted and exploited the association between its best wines and their *terroir*, introducing a system of geographic appellations (Overton and Heitger, 2008). As a result of this strategy, in 2009 New Zealand was ranked third in the category of top exporters of super-premium still wines, with 7% of the world total market, ahead of Australia and Spain with only 3%, and just behind France and Italy (Anderson and Nelgen, 2011c). In the last decade, New Zealand experienced the highest growth in value (1.8%), followed by Italy.

Argentina, the other newcomer in the global wine market, has also successfully shifted from production of low cost wines for the domestic market to quality wines for export, overtaking both Spain and Chile in the US market in 2010 (Figure 4). Its success is based on large inflows of foreign capital following the financial crisis in 2002, a favourable exchange rate and profound institutional renovation in the two main producing regions (i.e. Mendoza and San Juan) (McDermott, 2007).

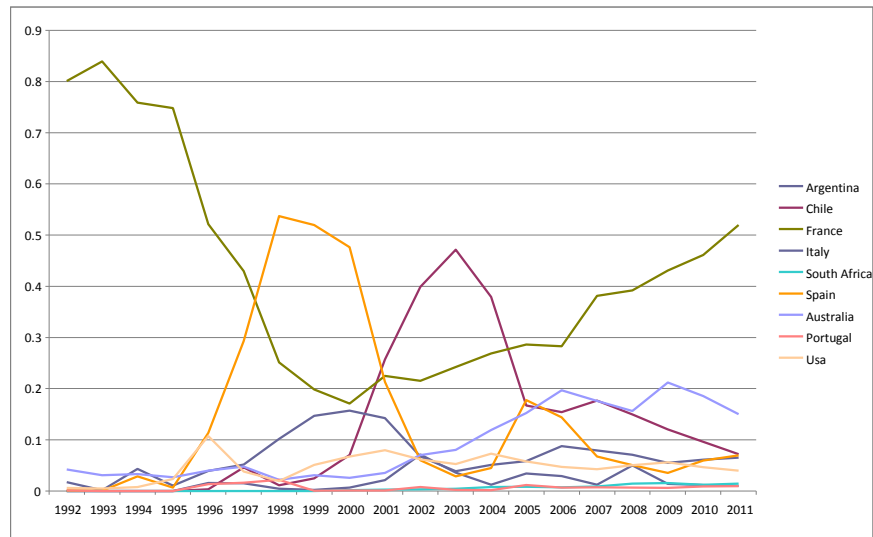
7. The new emerging Asian markets: Will there be a new window of opportunity and another catch up cycle?

Asian markets are the new frontier for both OW and NW wine producers, but Asian countries, in particular China, might also be potential future competitors. Recent figures indicate that China's domestic consumption in the last decade has grown faster than for any other country in the world (Table 2). Although consumption is still low in per capita terms, total wine consumption in China is close to that of traditional wine countries (Figure 6). The wealthy middle class that has emerged in China is becoming more sophisticated and more westernised. This affluent group searches for high-status goods such as imported wines (Charters, 2006; Goodman, 2003). Therefore, demand for luxury iconic French wines and Australian branded super premium wines has been particularly high. Unit values (\$/litre) for these two producers, who were ranked first and second in 2011 (Figure 6), have grown substantially (Table 4).

However, it is possible that, in the future, China might become a main competitor of the established wine producers. Recent figures indicate that Chinese domestic production is increasing, although consumption rates are growing faster. Also, domestic companies have risen significantly in the international ranking with Yantai Changyu Pioneer Wine achieving the fifth

position alongside the largest wine companies in the world. The Asian (and particularly the Chinese) wine industry is attracting international capital²³ and is expanding internationally.

Figure 6 Exporting countries to the Chinese wine market (% share, value)



Source: Comtrade

Chinese investors have acquired a number of French *châteaux* and have made investments in US and Australian wine companies.²⁴ These are tangible signals within the Asian business community of growing interest in the wine industry.

Overall, a new catch up cycle can be envisaged, characterized by a shift in the global wine industry towards the East. The changes already taking place could result in a new window of opportunity for wine producers in the near future. It is difficult to predict who will gain the most from this shift. However, although the OW and NW countries will certainly play a prominent role, it is likely that we will observe a rise of new players such as China, with the potential to challenge both OW and NW wine producers.

²³Ilva Saronno, an Italian group in the spirit business, is among the main shareholders in Yantai Changyu Pioneer Wine.

²⁴ In 2012 it has raised many concerns and upheavals among locals the acquisition of the prestigious Château de Gevrey-Chambertin from the Mitterand family in Burgundy's Côte de Nuits, acquired by an entrepreneur in the Macao gambling business (<http://www.winespectator.com/webfeature/show/id/47207>). Similarly in 2005, Lee Hi-sang, president the DongA One Group, acquired Dana Estates in the Napa Valley, California. Chinese investors have also helped to revive several Australian wineries that were close to bankruptcy due to the falling vineyard prices (see <http://www.bloomberg.com/news/2011-10-25/china-s-wealthy-wine-drinkers-help-revive-australian-vineyards.html>).

8. Concluding remarks

The conventional catch up model, which has been tested in a number of sectors and countries (Lee and Ki, 2016; Malerba and Nelson, 2011), suggests that latecomers will follow a gradual catch up process to become leaders, along the technological-product life cycle, and that in a succession of phases these new leaders will be challenged by yet newer entrants. The theory predicts that the leaders will not last forever. This paper provides an original contribution to the growing empirical literature on the global wine industry, characterized by sustained leadership of the OW. Our evidence provides a picture of the latecomers gradually catching up with the leaders via a path-creating strategy, and the incumbents losing some market share, but instead of disappearing, maintaining their leadership by adapting to this new path (see Figure 1).

The first catch up cycle started in the late 1970s when a NW wine triumphed over a French wine in an international tasting competition. Until the end of the 1980s, the international market for wine remained dominated by European countries, and particularly France and Italy. A number of factors contributed to the appearance of the first window of opportunity: the steady decrease in consumption in traditional consuming countries, the entry of new inexperienced consumers, mainly from the UK and the USA, and the increasing importance of the large distribution. At this stage, OW producers were locked into existing technologies, practices and institutional arrangements, while NW countries, not bound by the old technology and institutions, quickly reacted to these changes, adapting their wine to the new market conditions. Since the mid-1990s, thanks to the new production and marketing pathways promoted by latecomer countries, early entrants such California and Australia and later countries such as Chile and South Africa gained significant market shares at the expenses of the OW countries. It should be noted that, contrary to the case of the steel industry envisaged by Lee and Ki (2016), in the wine industry the initial competitive advantage of latecomers was based not primarily on costs, but rather on innovation in products and processes and adoption of a conducive institutional set up. The wine case also differs from other catch-up stories because latecomers were able to *endogenise* innovation and demand changes (see Lee and Malerba, 2016). This further confirms that “*whether a technology is exogenous or endogenous depends upon each case*” (Lee and Malerba, 2016), and in the case of wine the laggards have somehow set the industry standards.

Moreover, latecomers, although they have gradually caught up with the leaders, have yet to overtake them. Sector specificities might explain this; agricultural sectors react more slowly than

the manufacturing industry to economic and technological changes, due to sectoral, social and geographical idiosyncrasies.

Wine sector incumbents have been reacting and adapting to the challenges posed by the newcomers innovating along a new path that seems to be aligned to current demand patterns. Since the early 2000s, a new qualitative shift in consumers' tastes characterized the global wine industry, this time mainly favouring OW producers. A new class of affluent, more sophisticated and better-educated wine consumers is demanding more variety and higher quality products.

Due to the stronger involvement of consumers and their increasing attention to variety and regional specificities, the newcomer Australia has declined, opening a window of opportunity for even newer entrants such as Argentina and New Zealand.

Despite the temporary decline of some latecomers, the wine story is not necessarily one of aborted catch-up. As suggested above, change in agriculture is slow; therefore, in the long run, NW producers may have opportunities to challenge European producers, and some recent market developments seem to support this consideration. In particular, we observe a clear undergoing shift in wine consumption towards non-traditional consuming countries, such as the Asian countries, especially China, and the USA. Australian wines have performed particularly well in these markets. In addition, a new regulatory environment has been implemented in the EU; its consequences are not yet clear and may weaken some OW producers' traditionally founded competitive advantage related to *terroir* and geographical origin.

Certainly, wine catch up cycles will be affected in future by competition from China which may become a key market and also a sizeable producer and exporter. If China does become a major industry player, we can expect a new catch up cycle.

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