

THE CHILEAN WINE INDUSTRY - ITS TECHNOLOGICAL TRANSFORMATION AND NEW EXPORT ORIENTATION*

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I. INTRODUCTION

The Chilean wine industry has gone through a profound technological and organizational transformation during the last decades. It has, in a few years, become one of the most successful Chilean export industries. There are some reasons why it is important to try to understand the transformation of the Chilean wine industry. First, it has taken place within the frame of agricultural development in Chile during the last decades. Second, it is part of the technological transformation of the international wine industry under the process of globalization. This article discusses three questions: 1) What effect has government policy had over the industry? 2) How has the globalization process influenced Chilean wine sector? 3) Can changes in Chilean wine industry be linked to the discussion about a new entrepreneurial model in Chile?

II. PREVIOUS DISCUSSION AND SOURCES

Most academic discussion about Chilean Agriculture concerns the export development under the neo-liberal regime, after 1973, in this discussion there are two main streams. The first stream of discussion is the State-market relations. Actually, most scholars can in a greater or lesser degree be placed in this group. The argument is that the chock treatment of the neo-liberal policy implemented by the military regime and the subsequent changes in institutional setting were responsible for the actual changes in the economic development of agriculture. The most radical and influential measures are the stop of state interventionism; massive privatization; opening of the economy to foreign competition; and liberalization of the price system (Foxley 1982, Meller 1996, etc.). Several authors have highlighted the long-term conditions created by state action

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and the regulations favoring the export sector for fruit. Cruz and Leiva (1982), Sáez (1986), Gomez and Echeñique (1991) have suggested development strategies during the 1960's and early 1970's were significant in creating the experience and bank of knowledge, as well as the continuity in agricultural policy for providing the base for export growth. In addition, they argue that the state favored an aggressive export strategy after 1973.

The second approach is the Entrepreneurial discussion highlighted by Cecilia Montero (1997) who studied different entrepreneurial models in Chile during the 20th century. As a theoretical contribution her work stands for a different view. One of her main points is that the application of neutral economic policy helped developing economic activities that presented immediate comparative advantages. The institutional change was so profound that the business structure transformed from a rent-seeking system to a Schumpeterian entrepreneurial system. This was achieved through the implementation of 1) A new system of incentives and the fact that the state had the capacity to actually implement them. 2) A new ideological project that changed the social and cultural incentives and the meaning of economic success. 3) A reallocation of human resources from the state enterprise to private enterprise. 4) A new financial system that provided the means of development, etc. Echeñique and Gomez (1986) tried to identify an entrepreneurial profile and link it to the Schumpeterian entrepreneur through a study of the most successful agricultural producers. Their main conclusion was that agricultural development has been strongest among people who inherited their land. According to Gomez and Echeñique, agricultural development has occurred through the expansion of small and medium sized enterprises with large investments in technology. They underline the importance of continuity in the process.

Changes of Chilean wine industry has not drawn too much academic attention as a separate subject; it has mostly been covered within studies of the agricultural sector in general, with the exception of Jose del Pozo's work on the last 150 years of Chilean wine industry. The approach used by Del Pozo was that of a national structure, putting his emphasis on an insider agent perspective. Del Pozo found that there has been a geographical reallocation of the vineyards from the south to the centre of the country. About the branch structure, he found that the wine sector constitutes an oligopoly controlled by a few wineries. Del Pozo makes a clear distinction between the Wine industry and the rest of agriculture. He argues that most of today's biggest wineries were started during the 19th century by a few dynamic entrepreneurs. In addition, he argues that there has not been a serious attempt to export Chilean wine until recently; this is explained by the wine producers' dominant position in the domestic market.

The industry has argued that ISI policy between 1938-1975 created a technological stagnation. This was proven wrong by Del Pozo when he showed that many investments were made in nationally produced equipment. And finally, even though the big producers seem to have been favored by the state the industry as a whole had big problems in making its own organizations last.

Edmundo Bordeu (1994) wrote an article concerning quality improvement of wines and their importance for export success. He analyses the link between universities, research foundations, the national export promotion agency ProChile and the national industry. Bordeu analyzed the strengths and weaknesses of the wine industry in the context of exports at a given point in time, when exports of wine just had started to boom. Soledad Castro and Alex Menzel (1998) presented a description of the structure of the wine industry, analyzing the strengths and weaknesses of Viña Concha y Toro (Chile's biggest winery).

Most of the other books about the wine industry are not scholarly studies, even though some of the authors are well known academics (Jan Read, Fernando Ureta and Philipppo Pszczolkowski). Their books belong more in the category of "Fact Books about wine". Nevertheless they are important as sources of information. The same thing goes for Melin, who in this case can be classified as a "wine lover". Besides describing the branch, Read, Ureta, Melin, seem to represent the view of the industry about the development of the wine industry. Their opinion is that the sector's development can be divided in three different periods: *The first* between 1850-1930 as a period of accelerated development; *the second*, between 1930-1980 is regarded as a period of stagnation, backwardness and reluctant attitude towards investments due to ISI policy. *The third* is the latest period of outward expansion from around 1980 and onwards etc. Some of the sources used are not specifically about Chile, but give a general picture about the international wine industry, Hugh Johnson (1990), Oz Clarke (1998), Tim Unwin (1996) fall under that category¹.

III. BACKGROUND

Chilean wine production started to industrialize² during the last decades of the 19th century pushed by the sanitary crisis³ that affected Europe and especially France. (Ureta & Pszczolkowski 1994:16-25). The international wine production underwent a process of industrialization at the same time in most regions. The result was substantially higher yields and increased competition in the European market (Unwin 1996: 283-294). Chilean producers made enormous efforts to establish exports to Europe during the late 19th century and early 20th century. During this period Chile

managed to win several awards at different international wine competitions. However, because of increased competition and severe problems with adulteration French producers launched the AOC system, which gave monopoly to the French (Morel, 2001: 22-28). Another important reason behind the failed strategy was that economic nationalism and import restrictions became wide spread in Europe between 1920's-1930's (Svennilson 1954:88). Chilean wine production was readjusted to new conditions favoring production of bulk wines and serving as substitute for European wines during times of crisis in the international economy (Keller 1954:195-198, Dirección de Aduanas 1920-1970).

IV. THE ROLE OF THE STATE BEFORE 1973

Institutional setting was changed in 1938 when a new law was passed on, regulating the production of wine and which prohibited new planting of vines. It also limited production of wine to 60 liters per person and year. Any surplus production beyond that had to be exported or used as industrial alcohol. This in combination with ISI policy's import prohibitions caused, according to Ureta & Pzczylovskovski (1994:12-18; see also Read, Bordeu and Melin), an investment stop and stagnation in the industry. Del Pozo (1999:216-219) documented some important investments made during this period. He concluded that the stagnation of the industry had nothing to do with ISI policy and that there was a vast production of machinery and other equipment for wineries and wine production. He also argued that wine producers had important political influence. The prohibition against new plantation from 1938 was probably adopted if not with the support, but at least with the blessing of the big producers. Considering protectionism in Europe, such a reaction from Chilean wine producers is not surprising.

During the entire 20th century, the state had a double standard towards wine production. Firstly, there was a negative influence in the form of heavy taxation on the wine sector, which was counter productive concerning investments. Secondly, the positive impact was channeled through different government agencies that were responsible for implementing agricultural policy. The most important agent was the state agency Corfo⁴. In 1960 Corfo created an agricultural directory with the specific purpose of designing development policies and apply them locally. Their work comprised two very important programs; The Fruit Development Plan (Plan de Desarrollo Frutícola) and the plan to develop the dairy sector (Plan Ganadero Sur). The fruit development plan has of course been important for the wine sector (Muchnick 1983:54). Besides planning and investing for development, the government also eased the

planting restrictions by allowing for new planting of 10 hectares per vineyard (ODEPA 1964:32).

After the 1930's development of agriculture became an important goal of economic policy. Subsequently, the period between 1958-1973 was dominated by the implementation of land reform policies. It was believed that land reforms would result in more efficient use of land and increased social justice. The reforms between 1958-1964 in Chile were quite moderate and many people referred to it as the "pot reform". However during the structuralist influence of the 1960's the reforms became deeper and triggered a wave of increased expectations among the population. For the wine industry, however, land reform was a threat to property rights and as such a major risk for the wineries. In fact, many wine producers saw their land and in some cases, their wineries confiscated. During this period the State also promoted and supported the formation of new co-operative enterprises (Thiessenhusen 1966:195, Trivelli 1999). Between 1970-1973 the main goal of Land Reform was the elimination of the Latifundia and the social class behind it. This created a climate of confrontation that transformed agricultural units into fields of political confrontation (Silva 1992:278).

V. THE STATE POLICY AFTER 1973

The military regime implemented quite a few changes in the economic and institutional conditions after 1973. The home market was completely opened up and most regulations were abolished. For the wine industry, this meant that prohibitions against plantations were eliminated and it was permitted to import new equipment without any restrictions. In addition imports of other liquors became possible. The policy of liberalization also meant stringent quality rules, with among other things a prohibition against the abuse of definition of the product wine (Melin 1993:53, (Republica de Chile 1986). Land reform process was completed. And some of the expropriated land was returned to their former owners. Some land was given to reform peasants with ownership title, some was transferred non-profit organizations and the rest was sold ((Garrido 1990:183) (Marques de la Plata 2000)). Wineries and vineyards earlier expropriated were returned to their former owners. These properties were in poor shape in big need of renovation and investments (Melin 1993:53).

The effects of the changes in economic policy and institutional setting were both positive and negative for the wine industry. The new institutional setting secured property rights for landowners as well as factory owners. But the event that became the start of a reorientation of the industry, was the dramatic drop in consumption of wine. Between 1972 and

2000 consumption of wine gradually went down from 58 l/person/year to (+-) 11 l/person/year. The effects of economic policy follows below.

VI. INDIRECT STATE INFLUENCE

Macro Economic Changes

The government of Allende ended in a deep economic crisis due to the politicization of economic life, a wide spread rent-seeking behavior, huge inflation, etc. To reinstate macro economic stability, the Military Government implemented a reform program which concerned privatization, free prices, cessation of import taxes, decreasing government deficit and liberalization of the financial market. This stabilization package was accompanied by export promotion (Meller 1996:182-294). The first period of the military regime (1974-1982) ended in a deep crisis in 1982. Silva (1992:280-282) characterized this period as hostile towards agriculture.

Real wages dropped dramatically during 1974-75, recovered slightly until the debt crisis in 1982 and then decreased again from 1982-86. Unemployment increased dramatically in 1975 and reached a peak of 30% between 1982-83 (Meller 1996:256). Subsequently, employment rates slightly recovered until 1998 when the Asian and the Brazilian crisis made an impact on Chilean economy. The economic situation of households was quite dramatic for a long period of time, which is the main reason economic behind the dramatic drop in wine consumption after 1973.

Effects of Substitution

Due to scarce economic resources, households started to substitute wine for other products. The substitution process is directly linked to the relative prices of wine and its substitutes.

Table 1 - Average Prices of Wine, Beer, Pisco and Soft Drinks and Their Increase Between

	1971-1981			
	Wine	Beer	Soft drinks	Pisco ⁵
Price in USD	1,86	0,26	0,71	4,86
1981 per bottle	(0,75 liter)	(1 liter)	(1,5 liter)	(0,75liter)
Average price	358%	185%	394%	235%
increase 1971-1981 (%)				

Source : INE, *Informativo Estadístico 1972-1982* (Consumer Price Averages)
Banco Central de Chile, *Boletín Mensual* 1988, pp2050.

After 1990, while the price of wine started to increase rapidly, while the prices of substitutes decreased (Bordeu, 1994). Furthermore,

consumption of Coca-Cola has increased dramatically over the last years⁶ (www.thecoca-colacompany.com, CCU, Victor Costa SAG).

War of Strategies Due to Liberalisation

Liberalization of markets and elimination of prohibitions led to an over production of wine. In 1982 production reached a peak of 610 million liters per year (Costa 1999). As production increased and competition tightened, the need to follow a strategy was urgent. The big companies started a price war. Ricardo Poblete (1999) explained this strategy as a complete failure. He argued that while the wine industry lowered the social status of the product, producers of beer and pisco did the opposite. In 1985 production had gone down to 400 million liters and in 1990 it was down to 300 million liters. A new increase in production followed during the 1990's, but this time it was meant for exports (Victor Costa 1999).

The short-term crisis experienced by the industry presented a survival threat. This threat pushed the industry towards dramatic changes needed in order to succeed in the international market.

VII. DIRECT STATE INFLUENCE

After the economic crisis of 82-83 agricultural policy changed. Price controls were reestablished for traditional agriculture. The government also started a major technology transfer program called GTT (Grupos de Transferencia Tecnológica = Technology Transfer groups). The purpose of the GTT's was to create a link between organizations like INIA⁷ and the agricultural producers. The idea was to facilitate dissemination of new knowledge as well as new technologies. The GTT's were item oriented and gathered the farmers in discussion to seek solution to their various problems. The criterion to form a GTT was geography, as well as production items; Milk farmers met other milk farmers and grape growers met grape growers, etc. These groups had some success, but they involved mainly big and middle-sized farmers (Ministerio de Agricultura 1989:285). One may argue that most vineyards are very small and did not benefit from GTT's. While this may be true, there are indications that knowledge was transmitted from the wineries to the small vineyard owners through the enhanced quality demands of the new production system.

The democratic governments of the 1990's have offered new possibilities for agricultural producers. The main effort has been directed towards the creation of Centers of Business Development (Centros de Desarrollo Empresarial). These centers receive financial and practical support from State Development Agency (CORFO) during their first years of activities. ChileVid⁸ was initially financed by this program and. the

Chilean Wine Federation was also created with the support of Corfo⁹ (Poblete 1999).

Chilean Government has also been very active regarding the promotion of exports. In order to coordinate the export efforts of small and medium enterprises In November 1974 the government founded ProChile (Export Promotion Office). The purpose of this Agency is to coordinate and support the export efforts of the small and medium sized enterprises. For the wine industry in particular, the support of ProChile has been important. ProChile has financed 50% of the promotion costs and has actively participated in activities, such as Bordeaux Wine Expo and other expositions. ProChile started to intensify its work with the wine industry during the 1980's. The main export targets then were United States and England. Other countries like Sweden did not begin to import until after democracy was reinstated. The role of ProChile is quite exceptional. There is no doubt that this agency has played a mayor role in the success of Chilean wines abroad. ProChile also represents continuity between the military regime and the democratic governments of the 1990's (Olmedo 1999).

VIII. THE "NEW" WINE MAKERS

Structurally the wine industry is an oligopoly. Four companies control more than 80% of the home market and also dominate the export market. The same structure has been dominant throughout the 20th century. The big firms also produce wine of all quality levels. The middle sized are a very small segment of producers both regarding home market and exports. What is remarkable is that they also compete in all quality levels. The third group, the boutique vineyards are very small and concentrate on producing quality wine for exports. They represent a very small part of both the home market and the exports (Castro& Menzel, 1998)¹⁰.

Foreign ownership has increased since the 1980's, but almost without exception in the form of Joint Ventures or strategic co-operations. The international cooperation provides increased access to capital, foreign markets and established chains of distribution for the Chileans. The foreign partner gets access to the good soil and a partner motivated by his/her ownership (Melin 1993:103-193, Read 1994:49, Duijker 2000:53-229).

The modernization of Chilean wineries started during the 1970's for "The Big Four". They have signed some strategic alliances only in recent years. The small and medium sized wineries were more influenced by Miguel Torres¹¹ establishment in Chile. Torres provided a practical example of the profitability in high-tech investments for small-scale production. The foreign presence can also be observed in different

companies' staff. The biggest producers have a combination of Chilean and foreign enologists, marketeers and other experts.

IX. QUALITY CONCEPT

Through legislation Chilean production has been geographically divided into Regions, valleys, sub-valleys, etc in an attempt to establish a system of controlled origin similar to the French AOC¹² (Duijker 2000:19-30) Both Victor Costa (1999) and Ricardo Poblete (1999) have argued that this is just the beginning of an attempt in the effort to control quality, but there are no real possibilities of controlling the system. This could well constitute a valuable institutional change for the future of the industry.

The use of new technology has meant a major breakthrough in quality with changes in chemical as well as production processes. The time gap between harvest and processing has been shortened, and the extended use of stainless steel has eliminated container pollution. In addition, aromas are better preserved and the lower quality vines have been replaced by better qualities (Poblete 1999).

One important issue is the use of pesticides, herbicides and fertilizers. Chile has been accused by foreign competitors on using chemical additives. It seems that copper sulphate is the most important additive to Chilean vineyards. In the areas where wine is produced the composition of the soil gives protection from several illnesses that are frequent in Europe and in Californian Valleys. In addition, the natural geographic isolation of Chile, and the climate means that many of the problems affecting other countries do not affect Chile. The soil lacks potash and phosphorous, which are added in small amounts. The climate in the central region is mild during the winter (may to august). The amount of rain is very moderate and normally spring and summer do not bring any rain at all. This special condition means that fertilizers can be applied in small quantities, because the risk of "washing it off" is practically not existent (Rojas 1998-2000). Another difference between Chile and Europe is that Chilean vineyards are artificially irrigated (Clarke, 1998:15).

X. NEW TECHNOLOGIES

Technological transformation in the international wine industry started during the 1950's in the United States. It was during the recovery from the problems caused by the prohibition that a revolution of technological development took place in Californian wine districts. One novel approach was that complete studies of the conditions for wine production in France were undertaken in order to understand a better adaptation of vines to soil composition and climate. Parallel to working for

higher qualities, new machinery, techniques and equipment were developed to take care of mass production of wine. Some important innovations were the harvesting machines, that allowed a dramatic change in the time required for the harvest and of course the big stainless steel tanks with automatic cooling systems that are now common in many parts of the world. In addition, in the field of genetics, systems of conduction, and vineyard work, there has been important progress (Johnson 1990:chapter 42). The diffusion of this new technology gradually found its way to Chile, and also to the rest of the world, through competitive cooperation of the international wine industry. As a part of the process of education, enologists can obtain practical experience by working in wineries and vineyards all over the world. There is also an extended cooperation among experts and enologist from different companies from different parts of the world (Samuelson 1994). Another important way to interact and learn is the technology tours (Poblete and Hernandez 1999).

A change in mentality has also helped improving quality; the vines and grapes are being better treated now. The process of vinification is smoother and cleaner (Poblete 2000).

XI. LONG TERM INTERNATIONAL TRENDS

The composition of wine consumption has changed during the last 30 or 40 years. Consumption of table wines has decreased followed by an increase in consumption of higher qualities. The increase in higher qualities is not proportionate in litres to the decrease in lower qualities. The average price level of wine has increased over time.

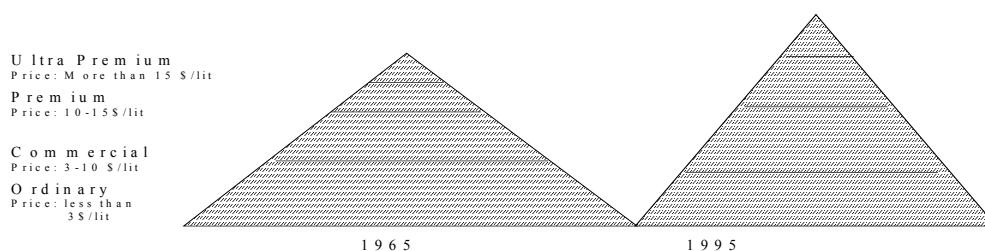


Figure 1 - Changes in International Patterns of Wine Consumption 1965 - 1995

Source: Australian Wine Industry, Strategy 2025, Wine Industry Journal 11:3, Aug 1996, pp 202. The base of the triangles represents total consumption in liters.

As can be seen above, global consumption patterns of wine have changed. The decline in Chilean wine consumption is quite similar to that of the rest of the world. The decrease of consumption of lower qualities has favored consumption of higher qualities. It is fair to state that people now

drink less, but better wine. One important force behind changes in the production, distribution and consumption of agricultural products, is the emergence of a new class structure. A relatively privileged blue-collar proletariat has been supplanted by a more privileged white-collar managerial proletariat. These international changes in class structure have altered consumption patterns creating new habits. People in Western Europe, the United States and other areas are increasing their standard of living. This new pattern has allowed consumption of products that are not originally from the same region as the consumer (Friedland 1994:211-221). Moreover, the distribution of films, books, etc. has also helped to open up awareness of new products and new traditions (Morel 1997).

Wine has now become a lifestyle embraced by the new emerging global middle class. Wine tasting, wine press, wine-tourism and wine experiences are part of the new wine culture. Consumers have been favored by the technological revolution through better and healthier wines in all the price levels. Varietal¹³ fashion is a new feature of wine consumption. This has created a new problem for wine producers, because it may not last long enough to cover up expenses (Poblete 1999).

XII. CHILE'S PLACE IN THE WORLD MARKET

Wine exports have boomed in Chile during the 1990's. The increase is quite significant in absolute terms; exports share is 3% of total world wine exports. The new international insertion of Chilean wines started during the 1980's when the economic crisis in Europe led to the use of alternative suppliers. Countries that earlier imported mostly French wine, started to look at less expensive alternatives. In addition, both Spain and Australia suffered from prolonged droughts. Ricardo Poblete (1999) argued that the most important problem for the international supply of wine was a sanitary crisis experience by the United States. All these combined international problems opened up a market opportunity for Chilean wines.

Wine consumption per capita has also increased in no traditional wine markets. For instance Denmark has increased consumption from 6 liters/cap in 1970 to 26 liters/cap in 1995, England from 5 liters 1970 to 13 liters in 1995, etc. The changes in consumption pattern are directly linked to the process of globalization. The media brings new customs to our living rooms through access to global news channels, such as the CNN, etc. Moreover, the emergence of effective distribution chains for food has increased the accessibility of products that we did not consume before. California and Australia have contributed in making new groups of consumers appreciate wine through their aggressive market strategies(Australian Wine Industry 1996:201-206).

There is also a solidarity effect linked to the reinstating of democracy in Chile. During the military regime many countries boycotted imports of Chilean products. Del Pozo (1998:268) documented the boycott of Chilean wines in Canada. Here in Sweden and Norway the State Monopoly of wines and spirits officially boycotted Chilean Wines until 1989/1990. The timing of the start of the export boom gives an indication of the symbolic value of wine, because it clearly indicates its place of origin. Another important promotion agent often forgotten is the Chilean population that live abroad. Chileans are generally very patriotic about their wines, they influence friends and colleges promoting different wines.

The value of wine exports has increased from 25 million dollars in 1988 to 500 millions in 1999 (ProChile 1996, 1999). The relation between price/liter has also increased. The main markets for Chile are England with 21,4%, USA (20,2%), Canada (7,3%), Japan (5,2%), Germany (4,5%), Denmark (4,5%), Argentina (4%), Norway (3,5%), Holland (3,3%), Sweden (2,6%) Ireland (2,6%), others (20,9%) (FAO Commodity Review and Outlook 1994-1995). Chilean wine entered the international market with a low price/liter relation. Both Alejandro Hernandez ((Chilevid) 1999) and Ricardo Poblete ((Federación de Vinos de Chile) 1999) agree that it is still difficult to sell more expensive wines. The Price/liter relation has improved from average 1\$/litre in 1989. The price has more than doubled, in 1999 it was 2.2\$/litre. This can be compared to Germany's 1.41, France's 3,38, Italy 1.06, Argentina 0.98 (FAO Commodity Review and Outlook 1994-2000).

XIII. WINE PRODUCERS AND THE ENTREPRENEURIAL QUESTION

As described in the beginning, Cecilia Montero concluded that economic development in Chile can in general be described as an entrepreneurial development. The main transformation in the national economy in the period described by this article is the transition from a state-led development to an entrepreneurial led development. The engine of growth is found in the private enterprise (Montero 1997:335). During the period of "hands off" (1973-1982) the economic policy, in combination with liberalization of markets and institutional change gave the industry a giant push towards change. After the crisis of 1982 the State has proven to be an active partner and supporter of economic, commercial and technological development.

For the wine industry, a Schumpeterian characterization of the economic development may be quite accurate. As an external source of entrepreneurial development, the process of globalization has opened new

market opportunities, new methods of production and created a new organization in the production, distribution, and development of the international wine sector. While internal changes provided a push towards change, the process of globalization has pulled the Chilean industry into technological transformation and export development. All the inventions used by Chilean wine industry were defined as innovations by Joseph Schumpeter and are as such essential for the existence of entrepreneurship (Schumpeter 1947:216-26). Perhaps the most important source of innovation is the emergence of a global system of wine production, which cannot be measured or discussed when analyzing only one country.

It could also be argued that the Schumpeterian approach should be accompanied by William Baumol's (Baumol, Batey & Wolff 1994:101) concept of imitative entrepreneurship. Imitation is also present in the Chilean development, because all new technology, all new knowledge, all new forms of positioning the product were developed and used by other countries before. The process of diffusion of new technology can be characterized as a small-scale "catching-up process" where everybody in the business is co-operating and at the same time competing (Morel 1997:65-66). Thus, the technological transformation and new export orientation of the wine industry can in a relevant way be linked to the emergence of a new entrepreneurial production system.

XIV. CONCLUSIONS

1- Government policy was found to have had both a positive and a negative influence over the wine industry. The reorganisation and reorientation of Chilean wine industry started after a dramatic drop in home market consumption due to the effects of the neo-liberal policy after 1973. Internal economic disturbances led to a cut in real wages, increased unemployment and increased insecurity in the household sector. The relative prices of wine became higher than its substitutes. Indirectly, the economic policy also contributed to an over production of wine, which ended in a price war after markets were opened up and production regulations were abolished. This study interprets the economic policy and institutional changes applied by the neo-liberal policy until 1982 as a survival threat that forced wine producers to change their scope in order to survive. In the short run the neo-liberal regime proved to be problematic, but it they also provided the necessary legislation to secure future growth and better qualities.

During the period studied the State established support systems, both pre 1973 through Corfo and after 1982 through INIA and the GTT's for the development and diffusion of new technology. After reinstatement of

democracy, the state has continued to support development of the wine sector helping finance different organisations like ChileVid and Chilean Wine Federation. The state has also played an important role promoting exports and financing half of the promotion costs abroad. Perhaps the most important conclusion about government influence is that even though there were different instruments to support development in the wine sector, there has been some element of continuity.

2- The influence of the globalisation process over Chilean wine industry

The technological transformation and export orientation of the Chilean wine industry has been pulled by the dynamics of the pattern of globalisation of the international wine industry. The technology applied in Chile has been developed mainly in the United States, and is spread through the co-operation among producers and the educational system of experts from all over the world. Establishment of foreign ownership, specially in the form of joint ventures can be interpreted as an efficient way to secure growth, to access capital and external markets.

The new positioning of Chile, selling wines of good quality at low prices has proved to be successful and was the strategy used to enter the international markets, but that has been gradually abandoned through the marketing of more expensive wines. The emergence of a new class structure with a privileged white-collar managerial proletariat is the key issue that creates new market opportunities for products that are not originally from the same region as the consumer. The engine of technological modernization of Chilean wine industry is to be found in the profound changes in industrial strategy and consumption patterns resulting from the process of globalization.

3- The wine industry and the entrepreneurial question

The implementation of new technology, the opening of new market possibilities, etc, are all features defined as innovations and as such essential for the existence of entrepreneurship. The development of the Chilean wine industry can in relevant way be linked to the discussion of an entrepreneurial development model in Chile. Entrepreneurship can in this case be defined as both innovative and imitative. Entrepreneurship has emerged in a mixed environment of the right incentive towards change and an institutional setting that allowed changes to occur.

Finally, the structural frame for Chilean wine producers as economic agents has shifted from the national to the global level. At the same time, the role of the economic agent has become a combination between the producers and government action.

Notes

- 1 There are many descriptions of the wine industry, but few scholarly studies.
- 2 The term industry is here used as the description of an organized economic branch
- 3 Milldiew and Phylloxera are very infectious diseases.
- 4 Corfo, Corporacion de Fomento dela Produccion, Chilean State Development Agency was founded in 1939 with the purpose of contributing to develop key sectors in the economy where the private sector lacked capacity.
- 5 Pisco is a spirit made of grapes.
- 6 Coca-Cola has increased its sales in Chile with an average of 15% per year) during the last 10 years, a development that places Chile far above average world increase of Coca-Cola consumption of 7%.
- 7 Instituto de Investigacion Agropãecuarria was founded in 1964 with the mission of experimenting and developing better species, etc in order to increase agricultural output efficiency. Foundation of INIA is a direct result of the Chile-California program, which made it possible for a lot of University teachers to get agronomy doctorates in UCLA during the 1960's.
- 8 ChileVid was created for the purpose of promoting the exports of medium sized and boutique vineyards. For more information see www.ChileVid.cl.
- 9 The purpose of Chilean Wine federation is to create an umbrella organization that can take care of further education, administration assistance, co-operation in technology tours abroad, etc. In the case of Chilean Wine Federation, they have been given special authority by the government to grant PROFOS to projects concerning wine producers.
- 10 For a guide to Chilean Vineyards see Duijker, *Wines of Chile*, Mitchell Bezley 2000.
- 11 Spanish Wine House Torres has been around since the 18th century. The winemaking tradition in the Torres family is both long and successful. The Torres family has also during several generations acquired knowledge about exporting wines. They have more than 120 years of experience of exports to the United States. The Torres children have become known by their activities abroad - Miguel in Chile and now in Argentina and his sister in the United States. At home in Spain it is Torres the father who runs the company.
- 12 The French AOC system is a quality latter that divides French wine production in Regions with a denomination of controlled origin. The division also implies a quality denomination with Grand Crus, Premiere Crus, Appellation Communales and table wines. The AOC system was established in 1935 and it regulates everything, from plants per hectare, yield per plant, etc. This French geographic quality latter has been the model followed by others even though the first known denomination of origin in history was established in Portugal in the 18th century and regulated production of Port wines.
- 13 Varietal = different grape varieties.

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