Does infant industry argument justify diversification policy in Argentinean wine sector?

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Does infant industry argument justify diversification policy in Argentinean wine sector?

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Abstract. Since 1994 Argentinean government implemented the diversification policy to reduce wine supply in the domestic market and stabilize prices through reducing the share of grapes allocated for wine production in favour of must production. The policy has set a minimum percentage of grapes for concentrated grape must (CGM) production for every wine maker.

The research aims to investigate the effects of the policy on the sector applying spatial equilibrium analysis, based on the model of Interregional Trade of Wine products in Argentina. The qualitative analysis of the sector under the current policy revealed, that the policy had a) no impact on the grape segment, b) a slight positive impact on grape must production due to 14% increased grapes reallocated from wine sector, and c) an expected but modest 20% decrease of wine production.
The anticipated increase of wine and grapes prices was not observed. Moreover the policy affects largely the optimal recourse allocation process, because it encourages CGM production among others also in those regions, which have non favourable agro-climatic conditions for CGM production.
The advantageous development of CGM segment benefiting from "infant industry argument" of the policy is although a positive outcome, on the long run it will cause stagnation and discourage investments for advanced technologies. The elimination of the diversification policy will ensure the competitive development of this emerging industry.

Keywords: spatial equilibrium analysis, infant industry argument

1. Introduction

1.1. Background information and problem statement

Argentina as a traditional wine consuming country is among the "new world" countries a significant player on the world wine market.

The vine and wine (VW) sector of Argentina has a regional character and is concentrated in two provinces (Mendoza and San Juan). The major activity of the sector is processing grapes into wine and grape must.

The sector has been subject of several policy interventions, aiming to stabilize the wine crises of the 1980s. One consequence of the crises is the overproduction of low quality wine with a subsequent decrease in wine and grapes prices.

Since 1994 the governments started to implement the diversification policy, trying to reduce wine supply in the domestic market with the purpose of price stabilisation through a) reallocation of grapes from wine to grapes must production, and b) promotion of exports.

The policy has set a minimum legal percentage of grapes for concentrated grape must (CGM) production for every wine maker. But this is not compulsory: wine makers can choose to contribute to the Grape and Wine Fund, directed to the wine exports promotion.

1.2. Research objective and hypotheses

The main objective of the study is to examine Argentinean VW diversification policy. The specific questions are to 1) investigate the effects of the policy on the sector and 2) estimate the alternative scenario of the sector's development after the policy is eliminated.

We test the following hypothesis: the diversification policy was not efficient; the stabilisation of the VW sector would have occurred also without government interference, so that the elimination of the diversification policy won't harm sector's development.

1.3. Methodology

The supply chain analysis is performed to find out the impact of the diversification policy on the structure of the sector. This qualitative analysis is verified by experts' opinions approach. The alternative scenario of the sector's development without the diversification policy is estimated applying the model of Interregional Trade of Vine and Wine sector in Argentina (ITVW), based on the methodology of spatial equilibrium analysis. The model findings reveal the comparative advantages of the country regions, allowing optimal allocation of resources with subsequent specialisation and intensification effects. This kind of optimal allocation of resources occurs due to the interplay of the free market forces. The regions specialise in production of the most advantageous produce and intensify it. The increased supplies and demands generate excess producer and consumer surplus, which increases the net social welfare.

2. The concern of improper government intervention to Argentinean vine and wine market

Historically the vine and wine sector has been hardly regulated. Among others the most important regulations included promotion and subsidies in 1970, prohibition of new plantations and trade taxes for wines.

By the end of 1980s, the deregulation process of the economy was established in Argentina.

In 1994 a new scheme of regulation of the wine market was implemented, which was only valid for one part of the country (for Mendoza and San Juan provinces). It was called the diversification policy, directed to the promotion of Argentinean wine in the international market, as well as the production of grape must as a natural way to equilibrate the surplus of the wine stock, thus protecting the wine industry. Every wine maker should use a certain, legally defined percentage of grapes for grape must production. The wine maker can make an alternative decision and pay 0.01 Argentinean dollars per kg of wine pressed in the wine cellar as contribution to the Vine and Wine Fund (VWF).

This kind of regulation faces the danger of non efficient use of domestic production factors, because of increased production of grape must also in those regions which do not have comparative advantage for this kind of production alternative.

3. Qualitative analysis of Argentinean vine and wine sector employing supply chain analysis and experts' opinions approaches

The qualitative analysis of Argentinean wine policy will be useful for the future policy alternatives[1].

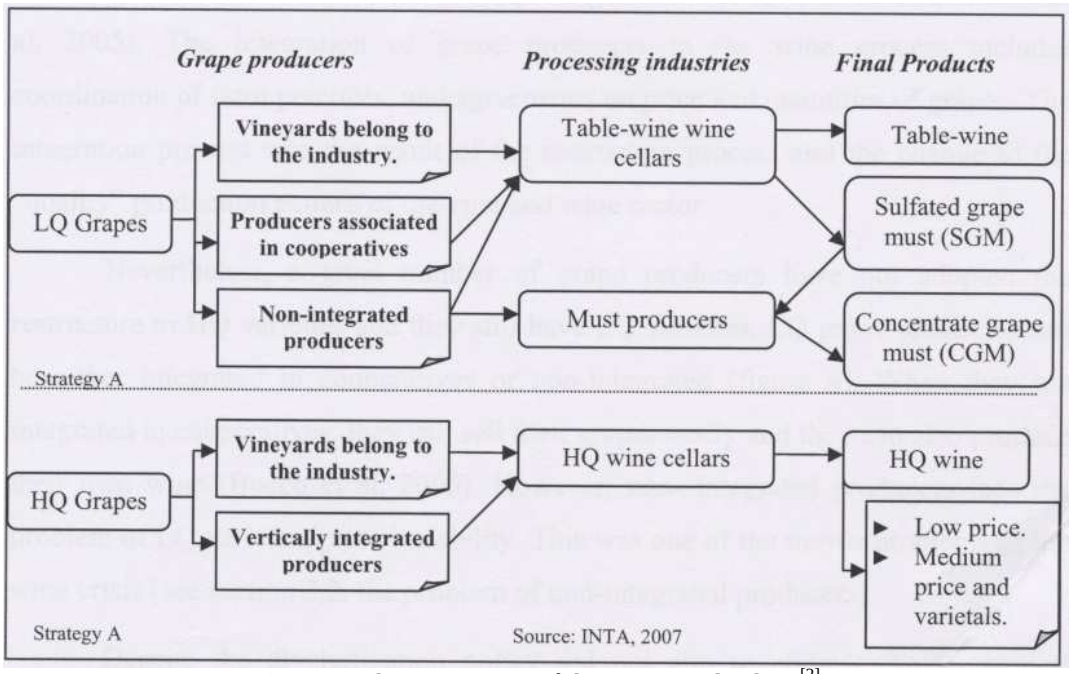

Figure 1. The main actors of the wine supply chain[2]

Supply chain approach is used to analyse the sector. The main actors of the sector (grape producers or vine growers, processing industries, i.e. wine cellars, as well as grape must producers) and their relationships are presented in Figure 1. Depending on the variety of grapes - Low Quality (LQ) or High Quality (HQ) – strategies A and B can be distinguished [2].

As illustrated in Figure 1 Strategy A corresponds to LQ grapes and B to HQ varieties. Final products for Strategy A are table-wine, SGM and CGM. Strategy B has HQ wines as final product.

Grape producers provide LQ and HQ grape varieties by specialising in one or both of them. They sell their production to wine makers or to must producers. Many grape producers adopted the restructure process suggested by the policy makers and changed LQ varieties with HQ ones and now vertically integrated with the HQ wine makers [3]. As the result of the restructuring policy, the integration of grape producers in the wine process includes coordination of farms practices and agreements on price and quantities of grapes. Nevertheless, a great number of grape producers (about 45%) have not adopts this practice. They still have LQ varieties and face price instability[2].

Wine makers are grouped into two categories: table wine cellars and HQ wine cellars. Both of them can have either one or both of the A and B strategies. LQ wine producers profit in quantity, whereas HQ producers get bigger gross margin per unit due to the higher prices (Abraham et al, 2007).

HQ wine makers have either their own production or they integrate independent producers. They focus on quality and make wines for the international market.

Must producers have appropriate technologies to produce SGM, but not all can produce SGM.

The analysis of the wine supply chain based on the expert opinions approach harvests controversial results concerning the effectiveness of the diversification policy. However the result of the policy impact analysis confirmed the estimations of the opponents of the diversification policy. The fact is that the policy non effective in the fulfilment of its objectives of wine and grape price stabilization.

4. Spatial equilibrium analysis of Argentinean vine and wine market

4.1. Conceptual background - Graphical presentation of the model

Two countries - one product case and zero transport costs between the trading countries

The general principal involved in developing international (interregional) trade can be illustrated for two-country one product case, using the simple supply and demand functions, as Khachatryan (2002) suggest.

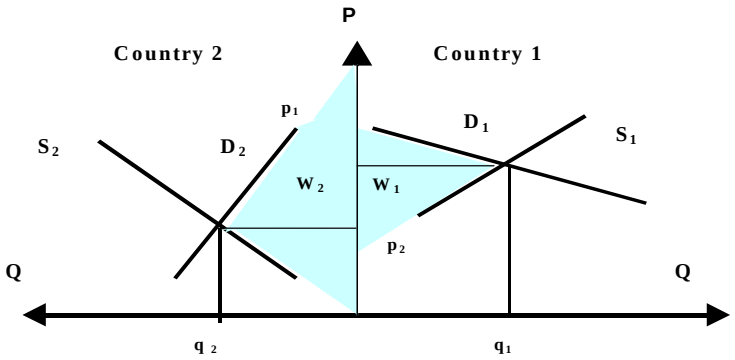

Figure 2. Welfare effects without trade between countries

The supply and demand curves of the commodity for each of the two countries in the absence of trade are correspondingly D1, S1 and D, S2, the produced quantities – q1, q2 at the price of p1 and p2 respectively. These prices and the accompanying quantities produced and consumed represent equilibrium conditions in each country. The net welfare effect, which is the sum of producer and consumer surplus, can be measured as the triangle resulting from the difference of the integral under the demand curve and the integral under the supply curve, from zero to q1 and q2, as illustrated in Figure 2.

Further on, Khachatryan (2002) assume trade between the two countries and follow the corresponding changes in equilibrium conditions. As part of the supply available in the country 2 (lower price market) will be transferred to country 1 (higher price market), the price in latter will decline and the price in country 2 will increase. This process will continue until an equilibrium price, PE, (Figure 3) is found. This will bring up in country 1 an increase in consumer surplus and a decrease in producer surplus, and result in a net increase in consumer surplus in this country (triangle A). Similarly an increase in producer surplus and decrease in consumer surplus will result in a net increase in producer surplus in market 2 (triangle B). The excess-demand curve of country 1 and excess-supply curve of country 2 help to define geometrically the welfare effects in case of trade between countries. Assuming demand and supply relationships to be linear, the excess-supply and demand curves can be derived graphically by defining two points for each.

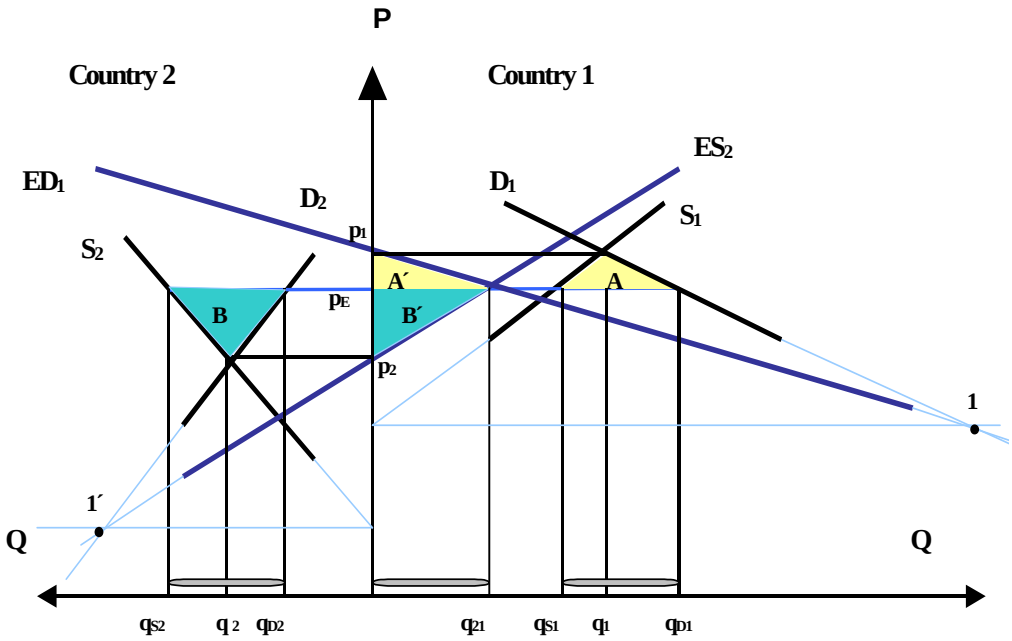

Figure 3. The equilibrium prices and trade illustrated by a "back-to-back" diagram, based on Khachatryan (2002).

At point 1 S1= 0 and ED1= D1, and the second point for the excess curve of country 1 is P1, because at this price S1= D1 (ED1=0). Similarly, the point 1´ (S2=0 and ES2= D2) and P2 (S2= D2 or ES2= 0) are defined for the excess curve in country 2. The excess-demand and excess-supply curves will intersect at PE. While we do not consider transport costs yet, the q21 (q21 = qS2 – qD2 = qD1 – qS1) will be transported from market 2 to market 1.

The net welfare in country 1 can be defined as the difference between the integral from zero to qD1 under the demand curve and the integral from zero to qS1 under the supply curve. Similarly, the net welfare for the country 2 is the difference between demand and supply curves form zero to qD2 and qS2 respectively. The triangles A+B equal to A´+B´, is the gain welfare of producer and consumer surplus.

Introducing the transport costs

The above discussed case of trade between countries without transport case is obviously an oversimplification. There are positive costs involved in the transfer of a commodity from one country to another. It follows that trade will not completely equalise commodity prices; instead the prices in two markets will move toward each other until they differ exactly by the costs of transportation. The changes in equilibrium price, when transport costs are inserted are shown in Figure 4.

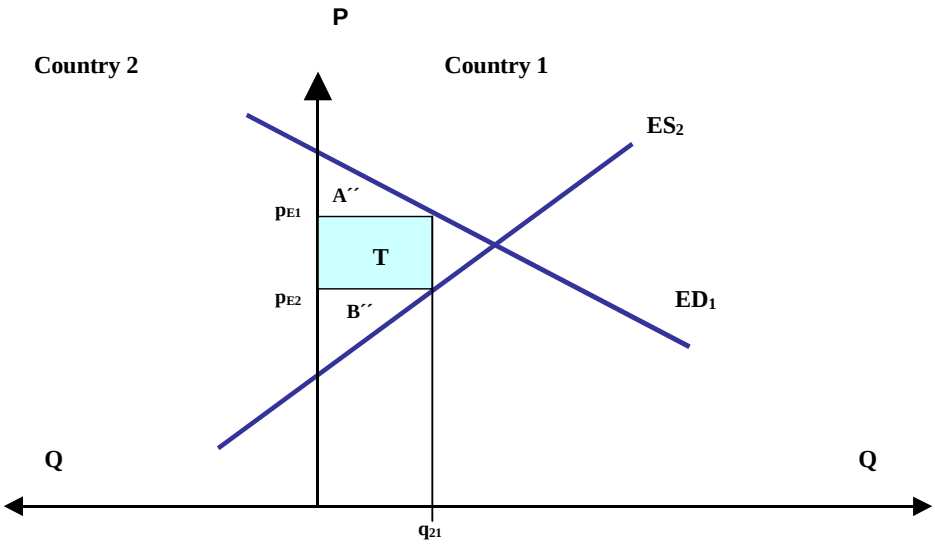

Figure 4. The effects of transport costs on prices and on the net welfare

When the transportation costs incorporated in the graphic of ES2 and ED1 we arrive at two equilibrium prices instead of one (PE) – the new supply price PE2 and the new demand price PE1. The difference of these prices is the transportation cost: T 21 > PE1 - PE2. The social net welfare will decrease; the rectangle area, which can be derived by multiplying the transportation cost by the quantity of transported commodity, will be subtracted from the net welfare gain (A´+B´) in Figure 3, leaving the area equal to A´´+B´´ in Figure 4.

4.2. Empirical model of Interregional Trade of Vine and Wine Sector

The spatial equilibrium model ITVW is applied to get the optimal allocation of domestic resources in Argentinean regions for grapes production and processing into wine and CGM.

Season 2004-2005is considered as the reference year, because it is a representative season after the crisis of 2001, when the prises and quantities were stabilized.

As Figure 5 demonstrates the model includes 4 supply regions and 6 demand regions; the raw product grapes is being processed into two final products- either into wine or into CGM.

Each supply region is represented by produced quantities of grapes and their corresponding prices. Similarly the demand regions are defined through the consumption quantities of wine and CGM, as well as their corresponding prices. The data were obtained from the National Institute of Vine and Wine of Argentina. Processing costs for wine and CGM were obtained from the wine makers association. Transport costs have been provided by transport associations. The supply and demand elasticities of 0,32 for grapes and of -0,89 for wine and CGM are adopted from a similar scientific research done in Chile by Abraham et al (2007).

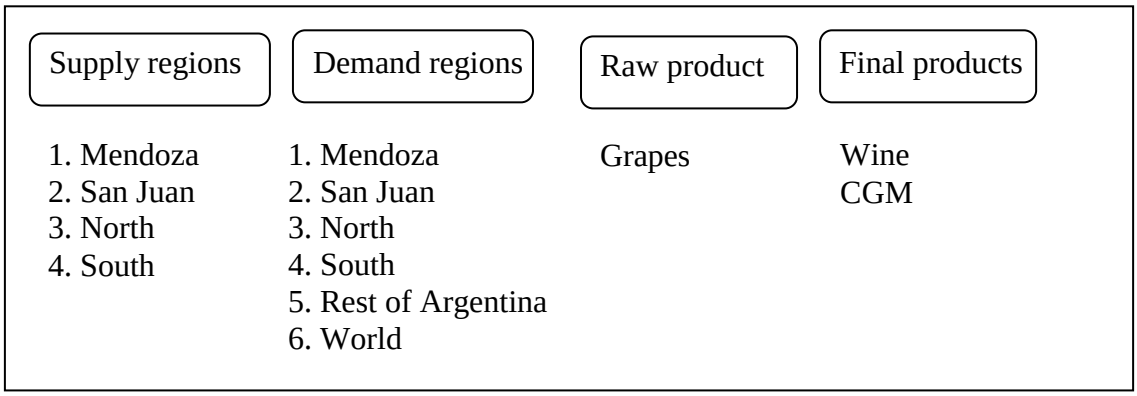

Figure 5. Model specifications[2].

4.3. Discussion and interpretation of results of the empirical model

The qualitative analysis presented in previous paragraphs demonstrates that the diversification policy could not attain the set objectives and was not efficient.

The qualitative analysis of the VW sector under the policy in question has revealed, that the policy had a) no impact on the grape segment, b) a positive impact on grape must production (a 14% increase of grapes going to must production), and c) expected yet modest impact on the domestic wine supply (20% decrease of domestic supply of wine).

The quantitative analysis results gained though the model also confirm that the policy affected largely the optimal recourse allocation process. Thus, the policy forces the wine makers in province Mendoza to produce grape must, even though its production is not profitable, given the agro-climatic conditions. Whereas in province San Juan the wine makers gain highly from production of grape must. These results are supported also by the findings of the empirical ITVW model. They revealed the comparative advantage of grape must production in San Juan. According to the principle of comparative advantage and free reallocation of scarce domestic resources, this province should specialise on grape must production, whereas province Mendoza should sharply decrease grape must production and meet its demand from supplies coming from San Juan province. This in its turn will encourage the producers in San Juan province to intensify their production investing in advanced technologies. Similarly Mendoza will specialize in wine production and intensify it. Due to advanced technologies the regions will meet also the demand of wine and grape must on the world market.

Unfortunately such favourable development is not possible under the current policy.

Moreover, whereas the policy could not meet its highly aspired objective to reach increase in wine and CGM exports, the empirical model demonstrates considerable increases (30%) in exports due to the specialisation and intensification effects.

To a certain extent the positive developments of CGM industry can be attributed to the diversification policy, whereas in total it should be evaluated as highly inefficient. Also the experts confirm that the CGM segment gained in importance considerably due to the policy.

The rather long duration of the policy, despite its inefficiency could be explained with the “infant industry argument”. However CGM is consolidated, so that the further protection of this segment will kill the competitiveness and cause heavy stagnation in the industry.

5. Conclusions and recommendations

The qualitative analysis of Argentinean VW industry under the policy in question has demonstrated that diversification policy could only partially achieve the aspired objectives and should be evaluated as ineffective and inefficient.

The set goal of the policy to increase grapes and grape must prices could not be met. The desired decrease of wine supply on the domestic market and increase of grape must production should not be attributed

alone to the effect of the policy. The certain role of other factors, causing the desired tendency of decreasing wine supplies in favour of grape must long before the policy was launched, should not be ironed.

The favourable development of CGM segment benefiting from “infant protection” role of the policy is the only positive outcome of this enduring government intervention. However this positive development will turn into stagnation, hindering the competitive development of this emerging industry and discouraging investments for advanced technologies.

The findings of the empirical ITVW model prove the hypothesis about the hindering role of the government intervention on the competitive and optimal allocation of the recourses. Thus the diversification policy should be eliminated to let the free market reallocate the resources optimally.

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