

ASSESSING THE COMPARATIVE ADVANTAGE OF OLIVE OIL PRODUCTION IN ALBANIA

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1. Problem statement

The transition of Albanian economy from a centrally planned to a market economy is associated with the implementation of a considerable number of structural and institutional reforms necessary for a sustainable market economy. At the beginning of the economic reform period, Albanian authorities paid special attention to strengthen the macroeconomic environment by implementing appropriate monetary and fiscal policies to decrease the budget deficit. In addition, trade liberalization policies were implemented with the goal of stabilizing the Albania currency oscillations. Price controls were also eliminated as the economy was decentralized to balance the supply and demand of goods and services.

Despite the progress made, especially in terms of macroeconomic and financial stability, Albania continues to have one of the lowest levels of income per capita in Europe (Civici, 2003). In addition, there is a big income gap between rural and urban areas. Since the agricultural sector is about 59% of total labour force and 25% of Albania GDP, Albania's economic growth and political stability can be achieved through strengthening the agricultural sector. The current political stability along with the climatic, geographic, and cultural advantages as comparable to neighboring countries provide the opportunity for a fast and sustainable growth of the agricultural sector.

Since the 90s, Albania has gone through a series of political and socio-economic upheavals which adversely affected productivity of agricultural production and the agro-industry. This period had also impacted the balance of the foreign trade for agricultural products. Imports increased substantially followed by a considerable reduction of exports creating a huge trade deficit of 9 to 1 for the period.

Like many of the other agricultural products, the major supply of oil (vegetable and olive) in Albania comes from imports. This is because of the inconsistent and unreliable supply of local raw material needed for the oil processing industry. In addition, the distribution infrastructure linking to the markets is also poor. With current prices and expected yield, the farmers do not have the incentives to grow oil-bearing plants because of the low economic returns. Furthermore, many processing plants had been destroyed after the 1990s. However, if Albania reaches an average yield similar to that of her neighboring countries (Greece and Italy), there will be a great potential for Albania to develop an olive industry comparable to her neighbors which has similar climatic and soil conditions. In order for that to happen, olive productivity has to increase along with a favorable marketing climate conducive to exports.

2. Objectives

This study aims at:

- ✓ evaluate the economic returns of producing olive.
- ✓ identify the comparative advantages of olive oil production in Albania under price and productivity changes.

The main objective of this study is to evaluate the comparative advantage of the olive oil production in Albania. For the fulfilment of the research objectives, the Private Cost Ratio (PCR) and Domestic Resource Costs (DRC) ratio for olive oil production was estimated within the framework of the Policy Analysis Matrix (PAM).

3. Procedures

Data was collected from 126 processing plants using a face-to-face survey (Agolli, 2002). The central and south-western parts of the country are selected for the study area as most olives and plants are located there. Primary and secondary data were used for achieving the objectives of the study. The primary data comes from questionnaires from interviewing the 126 olive oil processing plants.

PAM is the conceptual approach used to analyze the data. PAM is a stylized general equilibrium and policy-oriented simulation model (Khachatryan, 2002). The model used here is of a static nature. The greatest advantage of PAM is that it allows the disaggregation of any production activities and thus their costs. The cost components are straightforward and can be at a very detailed level depending on the data. In as sense, PAM modeled at the plant level is quite close to a partial equilibrium analysis. In the PAM framework the indicators for policy scenarios and economic efficiency are estimated and introduced exogenously in the model resulting in relatively reliable outcomes. The PAM also allows testing of a wide range of policy options for the estimation.

In this study only two of the indicators in the PAM structural model are evaluated - Private Cost Ratio (PCR) and Domestic Resource Cost (DRC). The estimation of these two indicators will help us to see if the olive oil production in Albania is profitable and also whether the she has a comparative advantage with neighboring countries.

Because productivity and prices change, sensitivity analysis was carried out. Sensitivity analysis is a good tool for revealing the changes in the comparative advantage, when specific parameter changes. It can be used to assess the effects of possible changes or errors in the evaluation of technical coefficients of the production plant budgets, or errors and fluctuations in the market prices. The sensitivity analysis parameters for this study are yield and production and world reference prices of olives. The DRC ratio was calculated changing the values of the basic model parameters (prices and production) of plus and minus 20% to assess the impact of possible changes due to fluctuation of those parameters.

4. Results

Albania is one of the few countries in Europe, and the only country in the Central-East Europe, that has favorable climatic and geographical conditions for olive cultivation. The olive cultivation history in Albania is as old as in the other Mediterranean countries. In the process of transitioning the Albanian agriculture sector, the olive and olive oil production will be one of the major emphases in the agro-food industry. Some of the main reasons that will sustain the potential contribution of the olive sector in the development of the country's economy are:

- Albania is one of the few countries in Europe where olive can be widely cultivated due to its favorable climatic and soil conditions.
- Albania farmers are familiar with the cultivation of olives, and ancestors have passed on good successful practices to the current generation.
- The olive culture is a huge national treasure.
- The demand for olive oil and table olives in the domestic market is very high. Furthermore, with technological improvement in the olive processing industry, this product could be traded in the international market.
- Olive farming is seasonal: in January and the winter months of the year. During this period other agricultural activities requires little labor. This situation makes it advantageous to produce other products during the olive off-season generating more income.

From the PAM analysis we have the following results:

Private Cost Ratio

The private cost ratio (PCR) estimates the ratio of domestic factor cost (C) to the value added which is revenues minus tradable input costs (A-B). This ratio depicts the ability of the production system to cover the cost of the domestic factors and continue to be profitable. This ratio is important for investors because they can optimize their profits by minimising the costs of tradable inputs and factors.

$$PCR = [\text{Cost of Non-Tradable Inputs} / (\text{Revenues} - \text{Cost of Tradable Inputs})]^1$$

From the calculation of the collected data, the following results were obtained:

$$PCR = 2,292,596 \text{ ALL} / (8,575,000 - 5,314,416) \text{ ALL}$$

$$PCR = 0.703$$

¹ Evaluated with market prices

The result indicates that olive oil production in Albania is profitable because the ratio is between the intervals {0-1}.

Domestic Resource Cost

To estimate the comparative advantage of a commodity, in this case the production of the olive oil, this study estimates the DRC using PAM as described by Monke and Pearson (1989). DRC is the ratio of the opportunity cost of domestic factors of production per unit of value added in world prices.

The DRC ratio is calculated using the formula:

$$\text{DRC} = [\text{Cost of Non-Tradable Inputs} / (\text{Revenues} - \text{Cost of Tradable Inputs})]^2$$

From the calculations using the survey data, the DRC ratios are:

$$\text{DRC} = 3,897,996 \text{ ALL} / (4,645,526 - 2,890,997) \text{ ALL} = 2.2$$

The DRC ratio equals to 2.2 which shows that Albania currently has no comparative advantage in the olive oil production. The estimated DRC ratio indicates that the value of domestic resources used in the production of olive oil is more than the value of foreign currency earned.

Sensitivity analysis

The sensitivity analysis has been carried out to illustrate how the PCR and DRC ratios for olive oil production react to various parameter changes. This analysis is carried out to evaluate the effects of changes in parameters such as how the olive production and olive oil prices can alter the degree of the PCR and DRC ratios. Based on the results above and assuming that is the real situation of these parameters in Albania, we change the parameters by + or -20%.

In the Table 1, it can be seen what the changes in the PCR and DRC ratios are when the production quantity parameters were changed by 20%, in both directions. As it can be seen from the results we have an improvement in the first scenario (+20%), where the PCR ratio is still in the interval {0-1} so the product is still profitable if production increased by 20%. However, the DRC ratio has decreased considerably, from 2.2 in 1.45, but still not at the range of {0-1} where it has a comparative advantage. When changing the production by -20%,. Albania olive production is not profitable to farmers and of course do not have a comparative advantage.

² Evaluated with social prices

Table 1: Sensitive analysis by changing the olive oil production quantity.

		<i>PCR</i>		<i>DRC</i>	
<i>Parametres</i>	<i>Changes in %</i>	<i>Changes</i>	<i>Base Scenario</i>	<i>Changes</i>	<i>Base Scenario</i>
Olive oil production	+20%	0.46	0.703	1.45	2.22
	-20%	1.48	0.703	4.7	2.22

Source: Adapted from Nguen, 2004, computed data.

The results of a second scenario of simultaneously changing the olive oil price (+20%) and the olive price (-20%) can be seen in Table 2. A result where the DRC ratio is 1.0 suggests that when olive prices increased by 20% Albania olive industry has a comparative advantage with other countries. Table 2: Sensitive analysis by changing the olive oil and olive prices simultaneously

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Changes	Changes in PCR	<i>Base Scenario PCR</i>	Changes in DRC	<i>Base Scenario DRC</i>
Olive oil price (+20%)	0.39	0.703	1.0	2.22
Olive price (-20%)				

Source: Adapted from Nguen, 2004, computed data.

5. Conclusions

Currently Albania is importing majority of the food fats needed for the domestic market, even though it has considerable potentials to be self-sufficient. In year 2006-2007 the acreage planted with olives is 42 thousand hectares, with a total number of olive trees of 3.6 million. Because of the suboptimal care and management towards the olive tree, its production has a very slow growth rates and with a very high yield fluctuations when compared to her neighboring countries. The insufficient olive supply affects the olive oil processing industry resulting in small output and low quality of olive oil.

According to the data taken from the 126 olive oil processing plants, the results using PAM analysis indicates that olive oil production is profitable. The Private Cost Ratio was estimated measured and the ratio was 0.703, meaning that the production is profitable for the private enterprises.

The results of DRC analysis indicate that Albania does not have a comparative advantage in olive oil producing industry in the production year 2005-2006. The calculations resulted in a DRC = 2.2. This means that it is not socially desirable to produce and expand olive oil production in Albania, as the use of domestic factors is not efficient in economic terms.

According to the sensitivity analysis, parameters like olive oil quantity and olive and olive oil price are very important in the final analysis of private and social profitability of the olive oil production in Albania.

6. References

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