The Microeconomic and Macroeconomic Impact of the Common Agricultural Policy

on the Hungarian Agrarian Sector

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Since the overthrow of Kadarism Hungary has long sought after a permanent member status in the European Union (EU). Hungarian policy makers have argued that with a membership, the Hungarian national economy would strengthen through the removal of tariffs, the permitting of unrestricted labor migrations, and the available external financial subsidies. Although the psychological and social benefits of such a marriage are additionally immeasurable, the impact of an accession on the agricultural sector is a topic of extreme controversy. Since the early 1990s, Budapest and Brussels have signed various agreements to facilitate the eventual merge, but at the present moment, it seems that the EU would still gain more from the bilateral agreements than its counterpart. This paper tests this preliminary observation on both the microeconomic and macroeconomic levels through eight case studies and three political scenarios, respectively.

Introduction

In the years following the collapse of the Iron Curtain, Hungarian foreign policy makers have been forced to seek a political substitute for the Warsaw Pact (WP) and an economic replacement for the Council for Mutual Economic Assistance (COMECON). This drive would quickly translate into a decade of intense negotiations on one front with the North Atlantic Treaty Organization (NATO) and on another front with the European Union (EU). Along with the Czech Republic and Poland, Hungary entered the ranks of permanent members of NATO in March 1999, and since then, despite Kosovo and Iraq, Hungarian policy makers have praised this development as positive and the guarantee of a Western military assistance as beneficial. Similarly, these leaders have argued that with a membership in the EU, Hungarian economy would strengthen through the removal of tariffs, the permitting of unrestricted labor migrations, and the accessible external financial subsidies.

Despite these seemingly advantageous developments, Hungary still needs to determine whether the benefits of an EU membership will outweigh the guaranteed setbacks in virtually all the agrarian sectors, from plum brandy to ground paprika to apple concentrates. Preliminary examinations reveal that the current domestic marketing structures and available qualities involved in the various meat industries–beef, pork, and poultry–do not complement the demands and standards pre-established by Brussels. The vegetable industry is facing similar obstacles; those involved in the fruit markets, especially the apple farmers of Szabolcs, could also fall prey both directly and indirectly to the Common Agricultural Policy (CAP).

The structural changes in the Hungarian economy in the past decade have included a decline in the significance of the agrarian sector in the national economy. In 1989 agriculture contributed to 13.7% of the gross domestic product, generated 22.8% of the export revenues, and employed 17.4% of the workforce. Currently, the figures have dropped to as low as 4.7%, 8.0%, and 7.1%, respectively.[78] Although these numbers mirror the figures of several EU member states, it is nonetheless important to understand the underlying causes for this negative development. One important factor contributing to this phenomenon is the linear decrease in both the quantity and the quality of agricultural production and the log arithmetic decline in livestock following the reshuffle of the external market and economic conditions. Although Hungarian crop production levels have stabled since the tumultuous drop in the early and mid 1990s, animal husbandry has yet to provide evidence of a substantial recovery.

As Hungarian policy makers continue to negotiate with the EU, they hope that with an accession the country will establish growing and steady markets, develop market access, and utilize all EU resources maturely. However, despite these seemingly logical objectives, the EU leaders have their own concerns to address and agenda to fulfill. The issue for Brussels is whether the organization will authorize unrestricted market access and adopt new members that bring to the table the potential to jeopardize the western European agricultural market equilibrium. At the same time, as the EU becomes less competitive on the world agricultural markets, the organization must develop its own untapped market access while minimizing its financial sacrifices. Brussels is also reluctant to pocket the costs of an enlargement despite the looming potential for expanding markets. The Hungarian and the EU basic production and marketing infrastructures, however, do not complement; on the contrary, they are competitive.

It is evident that Hungary and the EU both carry different agendas and perspectives with regards to agricultural accession, and

78Statistical Handbook of Agriculture and the Food Industry, Budapest, Central Statistics Office, 1989-1999.

unfortunately, the latter holds more control in negotiating terms. And now having established the relationship between Budapest and Brussels, this paper will seek to identify the impact of the CAP on both the microeconomic and macroeconomic levels with regards to the fundamental principles of the trade liberalization agreement.

Fundamental Principles of the Trade Liberalization Agreement

To understand accurately the relationship between Hungary and the EU, it is essential to detail the negotiation status between the two parties first. The fundamental pre-accession agricultural trade dialogue was established by an agreement on trade liberalization, which in general terms can be divided into four elements–the "double zero," the "quadruple zero," the classical list, and the processed products principles. The "double zero" principle, the first component, reciprocally eliminated taxes on over six hundred agricultural products with no quantitative restrictions.[79] The second component known as the "quadruple zero" principle abolished export refunds to include 3500 tons of cheese, 50,650 tons of pork, 101,250 tons of poultry, and 400,000 tons of wheat. This regulation, however, would also impact Hungarian imports of 3500 tons of cheese, 25,000 tons of pork and 15,000 tons of poultry.[80]

The "classical list" principle, the third component, provides further tariff reductions and quota increases without fully eliminating the taxes. This regulation would increase the Hungarian wheat export preferential quota from 290,000 tons to 400,000 tons, maize export preferential quota from 2000 tons to 100,000 tons, and tariff concessions from 80% to 100%. The quantitative restrictions on honey would be abolished and the tariffs would decease from 16% to 6%. However, in exchange, the EU would enjoy a duty-free benefit quota for 40,000 tons of rice and 100,000 tons of rye. Additional yields include apple juice, ground paprika, honey, mushrooms, and plum juice for Hungary and apples, cut flowers, and tomatoes for the EU.[81]

The fourth component contained the concession on processed agricultural products. This regulation abolished the industrial element, while granting the EU a 30% concession on the agricultural element, which will increase to 80% according to agreements. This element would translate to duty-free treatment of sweet corn, which currently stands as one of the most important Hungarian export items. In exchange, Hungary would have to reduce tariffs on agricultural product imports by 20% in the first year and 10% annually subsequently.[82]

It should be noted that this detailed trade liberalization agreement does not pertain to wines or spirits. Regulated by a separate contract, 400,000 hectoliters of wine have already received duty-free treatment as of January 1, 2000; however, these figures only reflect he miniscule benefits enjoyed by this industry with regards to tapping the western European markets. Preparations for more extensive agreements are currently under negotiations.[83]

Consequently, through the trade liberaliza-

79 "Földmûvelésügyi és Vidékfejlesztési Minisztérium," http://www.fvm.hu.

80 Ibid.

81 Ibid.

82 "Földmûvelésügyi és Vidékfejlesztési Minisztérium," http://www.fvm.hu.

83 A personal interview conducted by the author with Szabó Csaba in October 2002 reflected the Eger vineyard owner's frustration with the seemingly higher tariffs imposed on Hungarian wine. Szabó noted that certain products such as the Békés plum spirits and the Szabolcs apple spirits receive special benefits as a "protected food."

tion agreement just outlined, more than three quarters of Hungarian agricultural exports can enter the EU market free of duty compared to the previous quarter. However in exchange, more than half of EU agricultural exports may enter the Hungarian market duty-free compared to the earlier 10%. According to initial estimates, the agricultural agreement on trade liberalization will increase Hungarian agricultural exports to the EU by €80-100 million, notably in the cheese, poultry, and wheat markets. An additional HUF 5-6 billion will be saved in export subsidies according to the “quadruple zero” principle, and Hungarian firms will also gain HUF 10 billion by the elimination of EU tariffs.[84]

Despite all these positive figures from the trade liberalization agreement, these advantages simultaneously translate into EU products also gaining easier access to Hungarian markets, which will inevitably prove detrimental for some domestic products. Although the EU has technically eliminated export refunds, the policy only applies to 9% of its agricultural products to Hungary, and thus, the organization sill maintains a competitive strength via export subsidies. According to preliminary estimates, Hungary’s agricultural imports from the EU may increase by as much as €40 million a year. The presence of products sold at lower prices is anything but beneficial to domestic producers, such as the rice and the vegetable oil producers. Both fear the imports of 40,000 tons of duty-free rice and the 10,000 duty-free vegetable oil quotas will prove too competitive for their own businesses.

Another aspect of pre-accession negotiation worth noting is the approach to and the application of the Special Accession Program for Agriculture and Rural Development (SAPARD). Access to the annual €38 million that Brussels has allocated for Hungary depends on three prerequisites: the institution of the appropriate establishments, the compliance, acknowledgment, and fulfillment of proper applications, and the development of co-financing capacity. Current plans calls for the Hungarian Ministry of Agriculture and Rural Development to administer the SAPARD funds.[85]

The exact impact of the CAP on Hungarian agricultural prices, production, and exports inevitably depends on the specific industry examined. Nonetheless, generally speaking the agrarian prices are all expected to increase in varying degrees upon accession with the exception of vegetable oil. This development would be the byproduct of adopting higher CAP prices. However, with increasing production prices, consumer prices will naturally reciprocate this trend. This phenomenon could prove detrimental considering one third of the average Hungarian income is already spent on food.[86] Therefore, while the farmer income would rise due to higher production costs, the average household income savings will drop. Although negative consequences can be counterbalanced with well-negotiated production quotas and carefully selected reference years, further agreements with the EU should be taken with great care as the detrimental impacts can potentially escalate and explode. An example is the delicate relationship between the beef and pork sectors; benefits enjoyed by the former are unfortunately at the expense of the latter. A detailed analysis of eight randomly selected food

84 “Földmûvelésügyi és Vidékfejlesztési Minisztérium,” http://www.fvm.hu.

85 Special Accession Program for Agriculture and Rural Development (SAPARD) Plan of Hungary 2000, Ministry of Agriculture and Regulation Development, p. 62.

86 Personal interview conducted by author with Somogyi Dora in September 2002, Budapest.

industries will seek to identify specific developments and establish general patterns in their prices, production, and exports as Hungary continues to negotiate with the EU. It should be noted that when applicable, only the higher CAP prices are applied to the figures referenced.

Microeconomic Impact Case Study #1: *Apple*

As with most agricultural sectors, the apple industry witnessed a sharp decline in the volume of production from the characteristic 1.2 million tons of the 1980s to less than 400,000 tons by the end of the 1990s. Despite this setback, apple production still contributes to nearly 60% of the total national fruit production, and apple harvesting accounts for more than 40% of the land used for farming. With already more than two-thirds of the yields going into industrial processing, an accession would further damage a suffering sector. An EU membership would further setback production to as low as 200,000 tons due to insufficient commodity stock, and more importantly, quality prescriptions that are currently too strict for Hungarian apple farmers to satisfy.[87]

Microeconomic Impact Case Study #2: *Cereal*

According to Marosine Roszika, a professor at Szent István University, the development of prices, production, and exports of cereal, maize, and wheat is complicated, but at the same time, evidence of an industry that has much to gain from an EU membership. The real prices of cereal would decrease slightly, although the CAP and the benefits of compensatory payments would artificially increase cereal prices through the year 2007. Prices are expected to stagnate after that point. However, with the introduction of higher CAP prices, Hungarian cereal production will increase from ten million tons to eighteen million tons, and exports figures will escalate from the present two million tons to ten million tons (without any external assistance, only seven million tons). Export expansion is expected to stagnate after 2007 due to the recovery of the animal husbandry and the increasing fodder consumption. Consequently, it can be stated that the impact of the CAP on the Hungarian cereal production and exports can be beneficial on a short term qualitative basis.

Microeconomic Impact Case Study #3: *Wheat and Maize*

As the CAP regulation does not specify the different types of wheat, maize will be dealt in the same category with wheat. Without an EU membership, the real price of wheat would slightly decrease to 15,000 HUF/ton; with an EU accession, however, the prices are expected to increase to 20,000 HUF/ton by 2007. Maize prices are expected to move in conjunction with wheat prices. As for production figures, both wheat and maize have much to gain with external subsidies. Marosine predicated that without the CAP, overall wheat production would increase from the current four million tons to six million tons; maize production, from five million tons to six million tons. However, with an accession, wheat and maize production would each top seven million tons from their respective four million tons and five million tons. Marosine cautioned, however, that there would be some negative consequences incurred with the CAP. If production control were to be ever imposed on Hungarian wheat and maize

87 Érdész Mária, "Situation of Apple Production, Possibilities of Development in the Preparation for EU Accession," *Studies in Agricultural Economics*, 1999, Agrárgazdasági Kutató és Informatikai Intézet, pg 81-88.

production, the numbers would be inevitably much lower as domestic producers would be forced to compensate their output financially.

Microeconomic Impact Case
Study #4: *Beef*

The beef industry is perhaps the most interesting food sector to forecast with regards to prices, production, and exports. Beef prices are expected to double over the next few years with an accession into the EU; such a development would exponentially increase beef production. Consequently, beef exports would increase dynamically from the present 1800 tons to over 60,000 tons in 2010.[88]

Microeconomic Impact Case
Study #5: *Pork and Poultry*

Although the detailed fate of the pork and poultry industries vary slightly, their current struggles against a strengthening beef market warrants similar concerns from those involved in both sectors. With external subsidies, pork prices are expected to escalate although the production numbers are predicted to drop to half of current levels by 2007. Poultry production are expected to decrease significantly well past 2007, causing a shortage to meet domestic demands; consequently, it will be inevitable to avoid importing such food products from the EU. This phenomenon facing the pork and poultry industries is due to the mathematical fact that the EU supports beef production at a much higher level.[89]

Microeconomic Impact Case
Study #6: *Eggs*

Despite the dismal outlook for the pork and poultry sectors, Arik pointed to the egg industry as a good example of a beneficiary should Hungary successfully negotiate EU membership. Without an accession, the prices of eggs would decrease to 120,000 HUF/ton, and this negative trend would continue even beyond 2007. However, with a membership, prices would explode to as high as 160,000 HUF/ton in 2007, followed by an expected drop. Arik was not able to provide production and export figures for further analysis.

Microeconomic Impact Case
Study #7: *Vegetable Oil*

Vegetable oil prices are perhaps the only statistics that are not expected to change significantly regardless of Hungary's application to the EU. However, production and export figures are expected to suffer drastically with an accession despite minimal changes in the price. Mészaros Andras, a consultant for Vénusz, outlined the two extremes in this particular industry. Without a membership, vegetable oil production can be expected to increase gradually from half a million ton to 1.5 million tons by 2010. In addition with this surplus, export figures could potentially grow from the present 132,000 tons to over 600,000 tons by 2010. However, with a membership the scenario is extremely pessimistic. Production would not only stagnate but eventually decrease due to import competition, and consequently, domestic shortages will cause a negative trend in exports beyond 2007.

88 In a personal interview conducted by the author with Újvarosi László in December 2002, the Kecskemét cattle rancher noted that even with an EU membership, milk production is not expected to increase due to low cattle stock; consequently, milk export would not prove conducive.

89 In a personal interview conducted by the author in November 2002, Arik István of Herchihus Kft noted the additional factor that maize export would continue to remain more profitable than pork export hurts the pig farmers.

Microeconomic Impact Case **Study #8:** ***Sugar***

The fate of Hungary's sugar industry is perhaps one of the biggest unknowns at the current negotiation status. Magyar Zoltan, a contact representative for Magyar Cukor, presented several key figures in an effort to describe the delicate balance between this sector and the EU. Although the real price of sugar is expected to increase from the current 70,000 HUF/ton to 100,000 HUF/ton by 2007 with an accession, the fate of production is more difficult to determine. Magyar admitted that although the quantitative output would increase from its present 437,000 tons regardless, the production would rise to 520,000 tons without an accession or 700,000 tons with an accession. With domestic sugar consumption expected to double as a result of a higher national gross domestic product per capita, sugar export trends will also increase to 135,000 tons in 2007. The biggest problem pertaining to this industry is whether the Hungarian sugar sector would be able to secure new markets successfully in a market that is already saturated.

Having illustrated the specific developments and the general microeconomic trend of an accession on several industries, the question to examine now is the exact macroeconomic impact on a macroeconomic level with regards to when and with whom Hungary enters the EU. It is definitely not an easy feat to predict the impact of accession on agriculture, considering neither the timing nor the political terms have been established definitely. The two aspects of timing and terms are strongly linked. Based on an outline drafted by Kiss Judit and further remodeled by Somogyi Dora, an attempt to identify three possible scenarios and their exact effect on the Hungarian agriculture will follow–a full first wave by 2004, a partial first wave by 2004, and an accession after 2004.

Macroeconomic Impact Scenario **Study #1:** ***Accession of the Full First Wave by 2004***

This scenario not only presumes that the negotiations for accession, the ratification process, and the referenda on accession will all be satisfactorily completed by May 2004, but more importantly that the EU will have enlarged to include the 5+1 countries (the Czech Republic, Estonia, Hungary, Poland, Slovenia, and Cyprus). The probability of this scenario is rather unlikely due to the EU's own current lagging internal conflicts with regard to the restructuring of the institutional system and of the agricultural policy, the infancy of the Euro, and the WTO negotiations. Differences in migration policy, agricultural supports, and regional parochial disputes make further assessments difficult to conduct.

Agriculture would still be the biggest loser in an early accession even if the aforementioned problems could somehow magically be solved by 2004. Under this scenario the EU would be willing to integrate the agriculture of all six candidate countries, including Poland, which has a 25% agriculture population, if one, the predicted costs do not exceed the 2000-2006 budget and two, the organization's own agricultural position is not compromised. Consequently, Hungary and the other first wave candidate countries would have to settle for lower compensatory payments, lower quotas, and less favorable reference years. All this would translate to production and growth far below expected potential, and in the subsequent years, Hungary and the other acceding

90 Personal interview conducted by author with Somogyi Dora, September 2002, Budapest.

countries would continue to remain in an unfavorable, disadvantageous position. Under this scenario preliminary estimates argue that Hungary would be denied of 3 1.2 billion in agricultural supports.[90]

Macroeconomic Impact Scenario

Study #2: *Accession of a Partial First Wave by 2004*

By accepting only the smaller first wave countries (the Czech Republic, Estonia, Hungary, Slovenia, and Cyprus), the EU would ease its financial burden and the public fears. This policy would also pose less threat to the internal cohesion of the EU, as only the more developed and prepared countries would gain accession. The weakened credibility of the organization would be strengthened and popular support for enlargement would increase. However, the exclusion of Poland, a politically and geographically critical candidate, would produce new tensions in the EU, in Poland, and in Central and Eastern Europe.

Yet under this circumstance, the EU would be expected to be more generous in its agricultural supports compared to the first scenario. Higher quotas would be provided, reference years more favorable to the candidates would be accepted, and compensatory payments could potentially be granted. Under such scenario, the impact of agricultural accession on production, exports, incomes, budget, and modernization would be more compelling than the first scenario.

The Hungarian Institution of Agricultural Economics and Information investigated the impact of an early accession. According to the modular findings, early accession would have a positive effect on producer prices, agricultural incomes, and agricultural exports. The degree of price, income and exports growth, however, would depend on whether Hungary received compensatory payments. Hungarian agricultural producer prices could increase as much as 11.5% in 2003 than in 2002, and the income of Hungarian agricultural producers would rise by as much as 20.3%. If all goes well, agricultural producers would react positively to the price increases. Hungarian agricultural production would increase as a result of price increases and the introduction of compensatory payments and other premiums. Membership in the EU would have a negative impact on animal husbandry, with the exception of the beef sector, which is highly in demand even under the stringent CAP.

Concerning the impact of accession on agricultural trade, the value of Hungarian agricultural exports would estimate to approximately 3 4 billion, with agricultural imports to approximately 3 2 billion. This would provide an agricultural trade surplus of 3 2 billion.[91]

Macroeconomic Impact Scenario

Study #3: *Accession after 2004*

Considering the EU has neither a definite enlargement strategy nor a detailed accession timetable, the policy to pursue is perhaps stalling. The EU is also further driven in this direction by the unresolved internal problems and the public fears of enlargement. The organization hopes to settle parochial disputes, strengthen internal cohesion, deepen integration, and allow Hungary and the other candidate countries to become more prepared and developed with the time it gains.

According to this accession scenario, Hungary and the other candidate countries

91 Kiss Judit, “Az EU Kôzôs agrárpolitikájának 1999. Évi reformja és hatása a magyar mezôgazdaságra,” Budapest, Institute for World Economics, Hungarian Academy of Sciences, 2000, page 6.

would encounter a different agrarian system. It is highly possible that the CAP will adopt a "more market and less support" policy due to external pressures from the United States and the WTO and for internal reasons, such as problems of competition, the budget, environmental degradation, and oversupply. These factors will significantly erode the conditions and the benefits that are currently being negotiated. The impact of accession on Hungarian agricultural production, exports, and incomes would consequently decrease quantitatively, although greater emphasis would be placed on rural development and environmental protection.

If accession were to occur after 2004, there are furthermore two possible developments for Hungarian agriculture. According to the optimistic variants, the governments in power in Hungary will recognize the economic and social importance of agriculture, increase efforts to place agriculture on an export-oriented development policy, and strengthen production by increasing producer prices and encouraging investment. These efforts could solve the production, profitability, competitiveness, financial, and employment crises in Hungarian agriculture, increase agricultural production, livestock and agricultural exports, and modernize the industry overall. The consequent strengthened agriculture would then increase the national bargaining power, and hence, the Hungarian government can demand for higher quotas, negotiate for more favorable reference years, and seek for additional concessions with fewer compromises. One main question that remains is whether Hungarian agriculture can develop maturely and expand into new markets beneficially without EU financial support and/or an accession into the organization. A second unknown variable is the direction in which the CAP will change in the meantime and how previously assumed concessions might change.[92]

According to the more pessimistic variant, the Hungarian government will fail to solve the agricultural problems with the country's own resources. This would translate to a deepening crisis where production stagnates or declines, farmers' incomes sink further, capital shortages endanger modernization and development, exports stagnate or decline while imports increase, the technical level and competitiveness of the national agriculture weakens, social problems intensify, and rural impoverishment continues to grow exponentially. Under such conditions, the Hungarian agriculture would depend on the EU agricultural financial supports even more; it is uncertain though by this point whether the country's bargaining power will be too weak to obtain any benefits from Brussels. Although this scenario seems miserable, at the same time, the EU would most certainly perceive Hungarian agriculture in such a disadvantageous position as less threatening. Irrespective of this possibility, the mounting internal social problems would still be a deterrent.[93]

Conclusion

It would obviously stand in Hungary's favor to enter the EU when the organization is willing to provide more concession and to require few reciprocal concessions. If the new member states are chosen for their lev-

92 Kiss Judit, "Az EU Kôzôs agrárpolitikájának 1999. Évi reformja és hatása a magyar mezôgazdaságra," Budapest, Institute for World Economics, Hungarian Academy of Sciences, 2000, page 7.

93 Kiss Judit, "Az EU Kôzôs agrárpolitikájának 1999. Évi reformja és hatása a magyar mezôgazdaságra," Budapest, Institute for World Economics, Hungarian Academy of Sciences, 2000, page 7.

el of preparedness and development, Hungary would stand a good chance of being one of the leaders. However, the question is whether a postponement of enlargement would slow the pace of preparation. It has already been established that the option of early entry with a second phase of agricultural integration in later years is not suitable. The various accession scenarios that have been detailed previously all predict a different fate for Hungarian agriculture. With an early accession, Hungary would enjoy EU resources in development and modernization. However, concurrently, it is uncertain whether with a weak agricultural component Hungary would be able to negotiate advantageously on quotas, reference years, and compensation payments.

It was a never-questioned assumption that the negotiations between Hungary and the EU on the agricultural front would be controversial. This paper sought to question the hypothesis that Brussels would still gain more than its counterpart from the trade liberalization agreements. It is evident from a macroeconomic perspective that Hungary has much to gain from either an early or late accession. What is has to lose, however, is on a microeconomic level. As seen from the case studies, many sectors will face intense competition, albeit domestically or abroad. This is where the EU holds the upper hand over Hungary with regard to the amount of financial assistance it is willing to allocate; naturally Budapest and Brussels do not see agree on the necessary figure. With the Hungarian national referendum just a couple weeks away, it will be interesting to see how this discrepancy in agricultural negotiations will affect the popular citizen's vote.

Bibliography

Érdész Mária, "Situation of Apple Production, Possibilities of Development in the Preparation for EU Accession," Studies in Agricultural Economics, 1999, Agrárgazdasági Kutató és Informatikai Intézet, pg 81-88.

"Földmûvelésügyi és Vidékfejlesztési Minisztérium," http://www.fvm.hu.

Kiss Judit, "Az EU Közös agrárpolitikájának 1999. Évi reformja és hatása a magyar mezőgazdaságra," Budapest, Institute for World Economics, Hungarian Academy of Sciences, 2000.

Special Accession Program for Agriculture and Rural Development (SAPARD) Plan of Hungary 2000.

Statistical Handbook of Agriculture and the Food Industry, Budapest, Central Statistics Office, 1989-1999.