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## Imre Fertő: Agri-food trade between Hungary and the EU<sup>1</sup>

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This is one of the first books that is based on in-depth analytical research and which, in a scientific and comprehensive way, analyzes agri-food trade between East and West. In the wake of the now defunct Soviet era COMECON trade organization, it also deals with the post-Soviet implications for European Union (EU) integration. More specifically, the book represents ground-breaking in-depth analytical research work on agri-food trade between Hungary (a former COMECON socialist country) and its attempt at integrating with the West, and the EU-15. The analyzed period between 1992 and 1998 focuses on the opportunities stipulated by the 1991 Association Agreement between Hungary and the EU-15. During the transition period, the Hungarian food sector was significantly restructured through foreign direct investment, a likely driving force toward increasing the agri-food sector's international competitiveness. For Hungary, then an EU candidate, the year 1998 marked the end of the transition period and was followed by a more intense adjustment period. Endowed with excellent trade theory knowledge, the book's author, Imre Fertő, delves into empirical trade theory, methodology and approaches for in-depth investigation of trade patterns. Fertő does this through continual market share analysis, and through revealing comparative trade advantages, and discussing intra-industry trade. The author illustrates its further decomposition on horizontal and vertical intra-industry trade through explanations touching on specific countries' determinants in intra-industry trade. The book is rich in agri-food trade theory and empirical trade analysis.

Therefore, the book thoroughly examines the agri-food trade pattern between Hungary and the EU-15 during the transition period's initial stage encompassing pre-enlargement adjustments towards EU membership. The author employed various theoretical trade concepts and tested them empirically using as yardsticks various trade shares, comparative trade advantages, intra-industry trade, and some other trade methods. Using statistical and econometric methods, the results are investigated in relation to various partial or multiple determinants in terms of their changes. Fertő's book presents a concise combination of theory, methodology, employed data, and empirical results along with their policy implications.

The book has eight chapters. First is an introduction which comprises opening statements, theoretical background, and concepts to explain trade, particularly in agricultural and food products. Both traditional and emerging new trade theories are utilized to explain agricultural trade. The first chapter also presents research questions and explains the book's structure.

In the second chapter Fertő looks back on the Hungarian economy and agriculture during the nineties to analyse Hungarian agri-food trade with the EU-15. The focus is on main economic indicators, and trade policy environment. Also examined are the economic importance of agriculture and the food industry as well as government support for agriculture. The chapter also studies Hungarian agriculture's competitiveness and the economic environment's synthesis of changes. Among the main economic indicators analyzed are sectoral output and employment, earnings, unemployment, and productivity. Also examined are consumer and agricultural prices and trade terms. To further examine Hungary's transition

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to a market economy, the author focuses on foreign exchange rates and other main economic indicators and their potential impact on the agricultural and food sectors as well as on trade patterns. To illustrate the extent of changes in trade policy the writer gives special attention to Hungary's Association Agreement with the EU-15 and the subsequent agricultural concessions. Also discussed are concessions stemming from the European Free Trade Agreement, the Central European Free Trade Agreement, and the Uruguay Round Agreement. These policy and trade changes are reflected in the level and size of government support for agriculture, measured by the producer subsidy equivalents. The authors uses calculations gathered by the Organization for Economic Cooperation and Development (OECD) to study Hungarian individual arable crops and livestock. The competitiveness section on Hungarian agriculture actually defines competitiveness and presents different concepts and methodologies for measuring national, industrial, and corporate competitiveness as well as presenting studies and facts on the evolution of Hungarian agricultural competitiveness. Chapter two provides a context for analyzing Hungarian agri-food trade with the EU-15, underlining changes in international trade, macro-economics and in various sectors and the changes' subsequent impact on the agri-food sector and on agri-food trade.

The third chapter analyzes Hungarian agricultural trade with the EU-15. The analysis is conducted for total Hungarian agricultural trade in terms of main product groups, geographical distribution and individual EU-15 member states. Besides analyzing Hungarian agri-food trade structures with the EU-15, Fertő uses Herfindahl-Hirschman indices to analyze trade similarity and trade concentration

Employing a constant market share analysis, the fourth chapter evaluates Hungarian agricultural trade sources with the EU-15. The author summarizes the various constant market share models and calculation procedures. The empirical results are based on one and two-stage constant market share models in terms of product groups and in terms of the EU-15 member states. The results using the constant market share models are conducted first for Hungarian exports and then imports, and then separately for EU-15 exports and later imports. Applied are the alternative specification and alternative desegregation procedures. At the first level the constant market share model is decomposed by market size effect, market composition effect, competitive effect, changes in export/imports, structural effect, residual effect, and second-order effect. At the second level the constant market share model is decomposed by growth effect, market size effect, pure residual effect, static structural residual, pure second-order effect and dynamic structural residual. To test the results' stability, a sensitivity analysis is conducted using varying assumptions that consider, respectively, variations due to the commodity aggregation, variations due to end of year changes, and variations due to changes in reference market. Constant market share analysis indicates that Hungarian competitiveness in agri-food trade with the EU-15 deteriorated.

The fifth chapter reveals comparative advantageous measures for Hungarian agriculture. This chapter further develops theories and methodologies for measuring revealed comparative advantage. These theories and methodologies were initially formulated by Bela Balassa and various other authors. The book's author is cognizant of methodological issues for measuring revealed comparative advantage and new trends in literature on methodological issues related to measuring. Fertő is also familiar with empirical models and procedures for measuring revealed comparative advantage. This is tested and further developed in the form of alternative approaches for measuring revealed comparative advantage as it pertains to Hungarian agriculture. Fertő carried out different consistency tests and stability measures

for calculated bilateral revealed comparative advantage measures. Other than Hungarian agriculture's bilateral revealed comparative advantages, Fertő also analyzed regional and global revealed comparative advantages in Hungarian agriculture by employing the three different benchmark markets as comparisons. As with bilateral comparative advantages, and also with regional and global revealed comparative advantages, consistency is also evaluated through testing (cardinal test: correlation coefficients of paired indices, ordinal test: rank correlation coefficients of paired indices, and dichotomous test: shares of matching indices). In order to form conclusions and to examine the implications for Hungarian agriculture and the food sector, tests are also done to measure stability. The stability testing entails the following: correlation indices' coefficients, empirical distribution of indices, the Jarque-Bera test, and changes in trade structure and indices' transition probabilities. Revealed comparative advantage indices for the transition period indicate that Hungary experienced comparative export and trade advantages in livestock and arable crop products, but otherwise lost ground. The approaches used in the book are not only relevant for other countries in the region and in general go beyond analysis of agricultural and food sector comparative advantages.

The sixth chapter is devoted to theoretical and methodological issues for measuring intra-industry trade. Also presented in this chapter is the intra-industry trade concept coupled with its most common measures and various approaches for measuring it. Stress is on measuring static intra-industry trade and its decomposition on vertical and horizontal components. Measuring static intra-industry trade entails the trade imbalance problem, the categorical bias and the geographical bias as a possible means for improvement when measuring the degree and level of intra-industry trade. Besides measuring static intra-industry trade, plus the degree and level of intra-industry trade and their vertical and horizontal components, also described are recent advances in the concept of dynamic or marginal intra-industry trade with associate adjustments costs.

The seventh chapter also discusses intra-industry trade, but in a applied empirical manner. Here the author empirically analyzes intra-industry trade between Hungary and the EU-15 in agri-food products. As an introduction to empirical calculations of intra-industry trade patterns between Hungary and the EU-15 in agri-food products, Fertő provides an overview of the empirical studies dealing with intra-industry trade and hypothesis testing for determinants of intra-industry trade in agri-food products. Following this, intra-industry trade patterns between Hungary and the EU-15 in agri-food products are presented. The static traditional Grubel-Lloyd intra-industry trade index and other methods of its decomposition on horizontal and vertical intra-industry trade is provided as is dynamic marginal intra-industry trade with associated adjustment costs. Also evaluated are categorical bias and ranking of the EU-15 in terms of their intra-industry trade level in agri-food products with Hungary. During the 1990s intra-industry trade in agri-food products between Hungary and the EU-15 was found to be weak indicating low external integration of the Hungarian agri-food sector with the EU-15 markets. This is because in the early 90s the EU-15 market for Hungary was in its infancy following the stipulated Association Agreement. Over the examined period an increase in intra-industry trade in agri-food products between Hungary and the EU-15 indicates an increase in external market integration. This trend is consistent with trade liberalization efforts and Hungarian agri-food sector restructuring. It also meshes with the economic growth which is behind the increase in bilateral matched trade flow in similar products. More in-depth results indicate that this was not a uniform pattern as the results vary by product group. This also varies for individual EU-15 member states. In agri-food products different bilateral trade integration patterns between Hungary and the

EU-15 suggest that the transition process remained incomplete. Also restructuring by different product categories and different business and trade relations between Hungary and the individual EU-15 countries could be due to a number of economic and non economic factors. These include transport costs for distant market outlets, common borders, and knowledge of foreign languages. Also noteworthy is that matched intra-industry trade is dominated by vertically differentiated products where the difference between export and import unit value is greater. Inter-industry trade's prevalence and the low extent of intra-industry trade in agri-food products are also confirmed by marginal intra-industry trade indices. For marginal intra-industry trade vertical intra-industry trade is again prevalent. Inter-industry trade prevalence and vertical intra-industry trade are more likely to be associated with higher adjustment costs necessary for restructuring and reallocation of production factors between industries or within the same industry. The authors contend that for matched two-way intra-industry trade vertical intra-industry's dominance implies that the Hungarian and EU-15 agri-food sectors have been developing in a complementary way which is reducing adjustment costs. Moreover, the obtained empirical results for various types of intra-industry trade as a dependent variable are tested in the regression framework employing the set of country-specific determinants or explanatory variables. The level of intra-industry trade is found as a more appropriate dependent variable than the degree of intra-industry trade. The country-specific determinants of intra-industry trade are tested to explain results obtained for total intra-industry trade, for horizontal and vertical intra-industry trade, and for marginal intra-industry trade. Among things considered for country-specific determinants or explanatory variables of intra-industry trade are: tests and differences in per capita income measured by per capita gross-domestic product between Hungary and its EU-15 trading partners, differences between partner nations' sizes, market size, and transportation costs. The national determinants' results for Hungarian intra-industry trade in agri-food products with the EU-15 imply that their country-specific determinants differ for intra-industry trade types of horizontal and vertical components.

The final chapter summarizes the empirical analysis's main results and draws conclusions that include main findings, plus implications and directions for future research. The last chapter contains the main findings for the each chapter. In this section there is also a comparative analysis of Hungarian agri-food competitiveness by combining all applied approaches: constant market shares, revealed comparative advantage, static Grubel-Lloyd intra-industry trade index and dynamic marginal intra-industry trade index. The comparison of the results is presented by two-digit Standard International Trade Classification groups. In another part there are also country-specific determinants for Hungarian agri-food intra-industry trade using regression framework. Fertő also outlines various weaknesses in his research which are explicitly designed as a guide for future research. These are trade distortions caused by government policies and intervention that affect different trade measures, comparative advantage, competitiveness, and trade types. Other than national factors in the pertinent literature, hypotheses are often tested using simultaneously both country and industry-specific factors explaining the various types of intra-industry trade. Due to lack of data, industry-specific factors in regression analysis are omitted. Finally, another goal for future research involves trade dynamics analysis using marginal intra-industry trade measures and updated analysis.

The book provides extensive references. These encompass general trade literature, relevant references for agri-food trade (still rather rare) plus references on agricultural and food transition and European integration. In the Appendix is a more detailed explanation and list of agri-food commodities than in the empirical analysis. Also included are more detailed results for bilateral, regional and global revealed comparative advantage indices for Hungarian agri-food products. Following that there is the degree of horizontal and vertical intra-industry trade and the Nilsson's measure for the level of horizontal and vertical intra-industry trade in agri-food products between Hungary and the EU-15. Finally, there are also descriptive statistics for variables in regressions for dependent variable (total intra-industry trade, horizontal and vertical intra-industry trade, respectively) and for explanatory country-specific variables.

The book offers more than a mere understanding of agri-food trade between Hungary and the EU-15. Fertő's book is well illustrated with trade literature overviews, theories, methodologies and different approaches to analyze patterns in trade structures, revealed comparative advantages, intra-industry trade and trade types. The author goes even further as he has developed several applications of different theories, methodologies and approaches for the real trade situation and trade analysis for Hungarian agri-food trade with the EU-15. Therefore, this work is becoming the key reference book for research, post-graduate and study material to examine trade, agri-food trade, transition and EU trade related integration processes in Hungary and the EU-15. This also holds true for studying other countries more closely associated with the EU, and the most recent new member states (including Hungary), and for EU candidate countries. Possible updates for the included research can provide comparisons for transition and pre-enlargement trade patterns. These comparisons can also deal with the most recent post-EU-accession developments which are associated with finalizing the Hungarian agri-food transition process, restructuring, the policy changes and trade shifts toward the borderless Single European Market. So far such post-EU-accession trade study is not yet available for any new EU member country. In the coming years this is likely an area for trade research and this particular book offers an excellent methodological and empirical background for such studies. Therefore, the book's strength is its innovative approaches for studying trade structures, revealed comparative trade advantages, intra-industry trade, and trade types. Fertő's work is pertinent for post-graduate education, in-depth trade research, and policy purposes. It is for those who are interested in static and dynamic trade analysis, agri-food trade and their subsequent relationship with agri-food trade and sectoral transition in Hungary and in other Central and Eastern European countries. The work focuses on transition related issues between East and West, and to adjustments and EU membership. For this reason it is also recommended for Western scholars in this field of study. This applies for those studying general trade, agricultural and food trade, transition economics and European integration.