Charles University in Prague

Faculty of Social Sciences
Institute of Economic Studies

MASTER THESIS

Croatian accession to the European Union: impact on the agricultural sector

Author: **Bc. Kristýna Ducháčová**

Supervisor: **PhDr. Ondřej Glazar**

Academic Year: **2013/2014**

Declaration of Authorship

The author hereby declares that he compiled this thesis independently, using only the listed resources and literature, and the thesis has not been used to obtain a different or the same degree.

The author grants to Charles University permission to reproduce and to distribute copies of this thesis document in whole or in part.

Prague, July 28, 2014

Signature

Acknowledgments

I am grateful to PhDr. Ondřej Glazar for his kind advice and time he sacrificed in order to help me make this thesis better. I would also like to thank my husband Tomáš who have always supported me.

Abstract

The diploma thesis studies the short-term impact of Croatian accession to the EU on its agricultural sector. This is done by discussing current literature in the field, studying Croatian accession process, analysing Croatian economic indicators and agricultural sector, utilizing Slovenian experience with accession, and using econometric analysis. Both the empirical evidence and results of model estimation show that Croatia is better off after the accession with regard to the agricultural trade. Early post-accession data show no evidence of serious adverse effects on employment or volume of trade. There is much stronger agricultural export decrease to the CEFTA countries in 2013 than to the EU countries, shifting the ratio of export in favour of the EU. A significant increase of imports from the EU is registered after the accession but imports from the CEFTA countries remain unchanged. The results show that the EU accession has positive impact on Croatian agricultural trade.

JEL Classification	F14, J51, Q17
Keywords	Croatia, agriculture, EU, accession

Author's e-mail	kristyna.sarkova@seznam.cz
Supervisor's e-mail	ondra.glazar@seznam.cz

Abstrakt

Diplomová práce zkoumá krátkodobý dopad přístupu Chorvatska do EU na jeho zěmědělský sektor. Toho je docíleno pomocí diskuze současné literatury v oboru, studia chorvatského přístupového procesu, analýzy chorvatských ekonomických indikátorů a zemědělského sektoru, využití slovinské zkušenosti s přístupem a použitím ekonometrické analýzy. Jak empirické důkazy, tak i výsledek odhadovaného modelu ukazují, že Chorvatsko, co se týče zěmědělského obchodu, je na tom lépe po vstupu do EU. Čerstvá data po vstupu neodhalují žádný důkaz, který by poukazoval na vážné negativní důsledky na zaměstnanost nebo objem obchodu. V roce 2013 dochází k mnohem výraznějšímu poklesu vývozu do zemí CEFTA než v případě zemí EU, což mění poměr vývozů ve prospěch EU. Po vstupu je evidován výrazný nárůst dovozu z EU, zatímco dovoz z CEFTY zůstává nezměněn. Výsledky ukazují, že vstup do EU má pozitivní dopad na chorvatský zemědělský obchod.

Klasifikace F14, J51, Q17

Klíčová slova Chorvatsko, zěmědělství, EU, přístup

E-mail autora kristyna.sarkova@seznam.cz

E-mail vedoucího práce ondra.glazar@seznam.cz

Contents

List of Tables

List of Figures

Acronyms

ASEAN	Association of Southeast Asian Nations
CACM	Central American Common Market
CAN	Andean Community
CAP	Common Agricultural Policy
CARICOM	Caribbean Community and Common Market
CEFTA	Central European Free Trade Agreement
COMESA	Common Market for Eastern and Southern Africa
EC	European Commission
EEC	European Economic Community
EP	European Parliament
EU	European Union
EUR	Euro
FTA	Free Trade Agreement
GVA	Gross Value Added
ICTY	International Criminal Tribunal for the former Yugoslavia
LAIA	Latin American Integration Association (LAIA)
MERCOSUR	Mercado Común del Sur
NAFTA	North American Free Trade Agreement
PPML	Poisson Pseudo-Maximum-Likelihood estimator
SAA	Stabilization and Association Agreement
SACU	Southern African Customs Union
SIT	Slovenian Tolar

Master Thesis Proposal

Author:	Bc. Kristýna Šárková
Supervisor:	PhDr. Ondřej Glazar
Defense Planned:	June 2014

Proposed Topic:

Croatian accession to the European Union: impact on the agricultural sector

Topic Characteristics:

Croatian accession will represent yet one another enlargement of the European Union. The inclusion of the country is likely to have inferior influence on the union as a whole but the impacts on the Croatian economy are questionable. Therefore, it is instrumental to study the impacts of the integration and the consequences of the introduction of the common market. The thesis will focus on the agricultural sector since it is one of the areas in which the country feels unsecure and endangered. According to the integration theories there are various results of the accession. It can either lead to increased cooperation going hand in hand with economic benefits or to significant specialization of production in the light of the theory of comparative advantage, which results in feeble integration and ultimately economic downfall. This could also lead to the reduction of Croatian farmers due to the loss of competitiveness. With regards to the mixed anticipations of the accession on the agricultural sector, both import and export will be studied and various scenarios will be estimated. The results are expected to provide additional insight into what will happen with Croatian farmers, how the trade balance will shift and what changes are expected to be seen in the structure of Croatian trade partners, especially with relation to CEFTA members.

Hypotheses:

1. The number of Croatian farmers will diminish due to the accession and accession process.
2. Croatian farmers will not be ready to apply for the CAP dotations.
3. Croatia will increase the amount of trade of agricultural products with EU members in the short-term after the accession.
4. The impact of the EU accession on both import and export of agricultural products will not be that significant because of gradual market orientation towards the EU during the negotiation process.
5. The amount of agricultural trade with non-EU members will diminish after the

accession.

Methodology:

The work will focus on the issues associated with the integration of Croatian agricultural sector. This thesis will depart from historical background of Croatian accession process, will build on the changes of the main economic indicators of the Croatian economy and proceed to the empirical analysis. The impact on the number of farmers will be studied both using the available data and using the empirical evidence of chosen members of the EU, which had to face the same issue. The readiness of the farmers to reach the EU dotations will be evaluated on the basis of absolute extracted funds and comparison with the amount of dotations drawn by other EU countries. The impact on the amount of agricultural trade will be estimated using the econometric modelling. The constructed model will utilize theoretical foundations of integration theories. The model will use time series data and it will estimate the impact of Croatian accession on the balance of trade in the agricultural sector. A dummy variable will be included in order to capture the influence of accession and to model the different scenarios. Finally, the Croatian case will be confronted with Slovenian data and empirical experience. The shift of the market towards the EU away from its former trade partners will be evaluate based on the available data provide by the Croatian National statistical office and EUROSTAT.

Outline:

1. Introduction
    a. motivation, hypotheses, methodology, introduction of data
2. Theories of integration
    a. literature review, aspects of integration, trade balance
3. Croatian accession process
    a. history, negotiation, issues, influence on the number of farmers
4. Croatian agricultural sector
    a. Historical and present state, general facts
5. Estimation of trade balance of agricultural sector
    a. theoretical background, model specification, estimation using time series data estimators, comparison of accession and no-accession scenario, evaluation of both import and export separately
    b. evolution of the structure of trade partners
6. Comparison with Slovenian case
    a. comparison of impacts on agricultural sector and labour market
7. Conclusions
    a. Summary, policy recommendations

Core Bibliography:

1) Baltagi, B.H. (1995), Econometric Analysis of Panel Data. Chichester: John Wiley and Sons

2) Baas, T. and Mechthild, S. (2005), The Eastern Enlargement of the EU – An Initial Assessment: Growing Imports to the New Member States from the Euro Zone, German Institute for Economic Research, Weekly Report, Vol. 1, No. 18

3) Baourakis, G., Lakatos, C. and Xepapadeas, A. (2008), Economic implications of the EU accession of Bulgaria and Romania: a CGE approach, TradeAG, Working paper 08/1

4) Brücker, H., Damelang A. and Wolf, K. (2007), Labour mobility within the EU in the context of enlargement and the functioning of the transitional arrangements: Forecasting potential migration from the New Member States into the EU-15: Review of Literature, Evaluation of Forecasting Methods and Forecast Results, Institute for Employment Research (IAB).

5) Franić, R. and Žimbrek, T. (2003), PREMISES FOR THE INCLUSION OF AGRICULTURE IN THE PROCESS OF CROATIAN ACCESSION TO THE EUROPEAN UNION, Katarina Ott (ed.), Croatian Accession to the European Union: Economic and Legal Challenges, volume 1, chapter 7, pages 159-179

6) Judson, R.A., A.K. Owen (1999), Estimating dynamic panel data models: a guide for macroeconomists, Economic Letters, 65, pp. 9-15.

7) Kiss, J. (2011), Some impacts of the EU accession on the new member states' agriculture, Eastern Journal of European Studies, Vol. 2, Issue 2

8) Möllers, J., Zier, P., Frohberg K., Buchenrieder, G. and Bojnec, S. (2009), Croatia's EU Accession: Socio-economic Assessment of Farm Households and Policy Recommendations, Leibniz Institute of Agricultural Development in Central and Eastern Europe, MRPA, paper No. 17365

9) Perić, R., Odobaša, R. and Konjić, E. (2009), FINANCIAL MEASURES AND INSTRUMENTS FOR ADJUSTMENT OF AGRICULTURE FOR EU ACCESSION, Faculty of Economics in Osijek, Croatia, vol. 5, pages 771-780.

Author **Supervisor**

1 Introduction

The impacts of forming customs union were for quite some time considered to be purely beneficial for the countries involved. However, in 1950s Jacob Viner developed a counter argument proving that there are also negative effects present and so in order to assess the true effects of the customs unions these effects have to be analyzed and compared. This is especially valid in the case of the countries that significantly engage in trade with parties that are not to be included in the customs union.

The Republic of Croatia is the newest member of the EU. The republic is relatively young since it gained independence on the 8th of November in 1991 by separating from Yugoslavia. As a result, Croatia entered the world market and began trading, primarily with the EU and Balkan countries in the region. It also started to negotiate with political elites. It took 10 years for Croatia to sign the Stabilization and Association Agreement in October of 2001. The treaty came into force in 2005. Besides negotiating Stabilisation and Association Process (SAP), Croatia succeeded to join CEFTA in 2003 and in the same year on the 21st February of 2003 applied for the EU membership. The accession process took long ten years but in the end Croatia successfully completed all the tasks required by acquis communautaire and joined the EU on the 1st July of 2013, therefore becoming the 28th member state of the European Union. Croatia joined the EU in the wake of financial crisis, which certainly played its role. It could have weakened Croatian farmers, which would have negative consequences on their survival rate among the EU competition. In the nearest future no other enlargements are expected. After several large enlargements, for the second time in the EU history there was an accession of only one state.

The objective of this thesis is to identify the effects of Croatian accession to the EU on Croatian agricultural trade. With regard to the theory of trade-creation and trade-diversion it will be analyzed if the accession to the EU free market increased the overall agricultural trade or not. Furthermore, the composition of Croatian trade partners will be addressed because it is likely to be affected by the collapse of tariff barriers and use of new external tariffs of the EU. Finally, this thesis will address the situation of Croatian farmers. Agricultural products with prices above the EU levels

may cause some farmers to go out of business. On the other hand, the direct CAP payments may improve their situation. In sum, the development of the number of farmers is worth investigating. The topic of agriculture was chosen because it was one of the few topics which Croatian farmers feared that might be negatively affected by the accession to the EU The thesis will try to find answers to the hypotheses stated in the research proposal. The hypotheses were constructed as follows:

1. The number of Croatian farmers will diminish due to the accession and accession process.
2. Croatian farmers will not be ready to apply for the CAP dotations.
3. Croatia will increase the amount of trade of agricultural products with EU members in the short-term after the accession.
4. The impact of the EU accession on both import and export of agricultural products will not be that significant because of gradual market orientation towards the EU during the negotiation process.
5. The amount of agricultural trade with non-EU members will diminish after the accession.

In order to fully investigate the hypotheses the work will start with discussion of literature, follow with historical background of Croatian accession process, then move on to the changes of the main economic indicators of the Croatian economy, compare the Croatian process with Slovenian empirical evidence and finally proceed with empirical econometric analysis. The impact on the number of farmers will be studied both using the available data and empirical evidence of chosen members of the EU, which had to face the same issue, namely Slovenia. The readiness of the farmers to reach the EU dotations will be evaluated on the basis of absolute extracted funds and by comparison with the amount of dotations withdrawn by Slovenia. The impact on the amount of agricultural trade will be estimated using the econometric modelling. The constructed model will utilize theoretical foundations of integration theories. The model will use panel data and it will estimate the impact of Croatian accession on the export of the agricultural goods, more specifically a gravity model will be created and estimated. A set of dummy variables will be included in the model in order to capture the influence of accession and to model the different

scenarios of Croatian institutional membership. Throughout the thesis, the Croatian case will be confronted with Slovenian data and empirical experience.

The shift of the market towards the EU away from its former trade partners will be evaluated based on the available data. They will be provided mainly by the Croatian Bureau of Statistics online database, World Bank online database, and EUROSTAT online database. The econometric analysis will be performed using Generalized Least Squares method correcting for serial autocorrelation and heteroscedasticity. The chapter focused on literature review and discussion will mainly use sources for academic online database such as JSTOR, EBSCOHOST, and REPEC. Information used in the chapters describing historical development and accession process originates mainly from authors own knowledge or various websites of European institutional bodies (Commission, Parliament, etc.).

The thesis will consist of six parts, including introduction. The second chapter of the thesis reviews the theory of customs union and discusses the literature dedicated to the topic of Croatian accession with the focus on agriculture. It discusses trade effects of customs unions, aspects of integration process, and challenges for Croatian agricultural sector. Further, it reflects predictions and fears of various authors. Second part studies impact of the accession process on the agricultural sector to a higher detail and reviews the main issues during the process.

Third chapter focuses on the historical development of Croatian integration efforts. It summarizes Croatian EFTA membership, accession process to the EU, and main issues encountered on the way.

Fourth chapter describes the Croatian agricultural sector. Overview of the main macroeconomic indicators, agricultural statistics and general information about the sector form a core of this chapter.

Fifth chapter uses the available data from the Croatian Bureau of Statistics and estimates the model of export of Croatian agricultural products. This chapter gives a brief theoretical background of the model, describes development of the model and issues encountered during modelling, and focuses on the composition of Croatian trade partners. Throughout the chapters, the collected findings are

confronted with the empirical evidence of Slovenia. This brings some illuminating evidence to light and allow making predictions about future development.

The sixth and last chapter will conclude, by summing up the findings of the thesis. It also describes the outcomes of the hypotheses testing and future expectations. Lastly, limitations of the work noted and prospects for further research identified.

2 Literature review

The following chapter will be theoretical. It will discuss basic theories and economic concepts which are relevant to the topic. Mainly the trade creation and diversion concept will be introduced in order to demonstrate why customs union may cause ambiguous effects. Moreover, current literature studying the possible impact of the Croatian accession to the EU on its agricultural trade will be reviewed and contrasted. Since the topic is quite new there is not a vast amount of literature to be covered. Although majority of the studies share similar hopes and concerns there are different anticipations.

2.1 Trade creation and trade diversion

Canadian economist Jacob Viner (1950) in his book *The Customs Union Issue* firstly distinguished between trade-creating and trade-diverting effects of custom unions. His customs union theory builds on some strict assumptions, such as perfect competition in commodity and factor markets, no transaction costs etc. As mentioned, the union induces both positive and negative effects. Trade-creation was defined as a shift from high-cost production in the domestic country to the cheaper production in a partner country. Alternatively, trade-diversion describes the event of shifting from foreign low-cost producers to more expensive local ones. The creation of customs union causes both of these effects and they represent positive and negative welfare effects respectively. They emerge mainly as a result of removal of some import and export tariffs. The ultimate impact upon the population is determined by relative sizes of these effects. It is beneficial for a country to join a customs union if trade-creation effect is higher than trade-diversion effect, which results in net welfare gain for the population. Otherwise, it is economically logical to stay outside of the union.

The theory was subsequently developed and commented by many authors. (Meade 1956, Gehrels 1956-57, Lipsey 1957, Cooper and Massell 1965) Lipsey (1957) made a significant contribution by distinguishing the effects of customs union to production and consumption effects. He argued that under such framework one

should be careful about framing trade-creating effects as good and trade-diverting effects as bad. He showed that it is possible to obtain an increase in welfare from the creation of a customs union which results only in trade diversion.

Gehrels (1956-57) states that while production effects can either lower or raise the welfare, consumption effects always causes the welfare to rise. As such, he criticizes the original approach proposed by Viner because it underestimates the chances of customs union to generate increase in welfare.

Cooper and Massell (1965) propose to split the welfare effects for the analytical purposes into tariff reduction component and pure trade diversion component. The tariff reduction component is the sole source of any gain in consumers' welfare counting for both trade-creation and trade-diversion. Cooper and Massel claim that Viner gives no indication why a customs union should be preferred in comparison to appropriate non-preferential tariff policy. The latter always results in a better alternative since the country can reduce the tariffs and achieve the gains without the offsetting costs of customs union. The authors therefore propose to devote more attention to the analysis of relative efficiency of customs union and (non) preferential tariff agreements. They conclude that customs unions may be more beneficial for countries who seek to protect their domestic markets at fewer sacrifices in income.

Johnson (1974: pp. 5) suggests to make a different separation of the effects in order to make them more analytically elegant. He prefers to define 't*rade diversion as diverting initially existing trade and trade creation as involving additional trade, even if it is new trade in an existing product whose source is switched as a result of customs union. Then trade diversion is always welfare-reducing, trade creation always welfare-increasing, and the net effect of customs union depends on the balance of trade diversion and trade creation*'

The original Viner's contribution in *The Customs Union Issue* demonstrated for the firm time that welfare effects of customs union can be ambiguous and not necessarily welfare increasing. The simplified model builds on the assumptions of perfect competition in commodity and factor markets, perfect factor mobility within the individual countries, but not among the countries, full employment and foreign

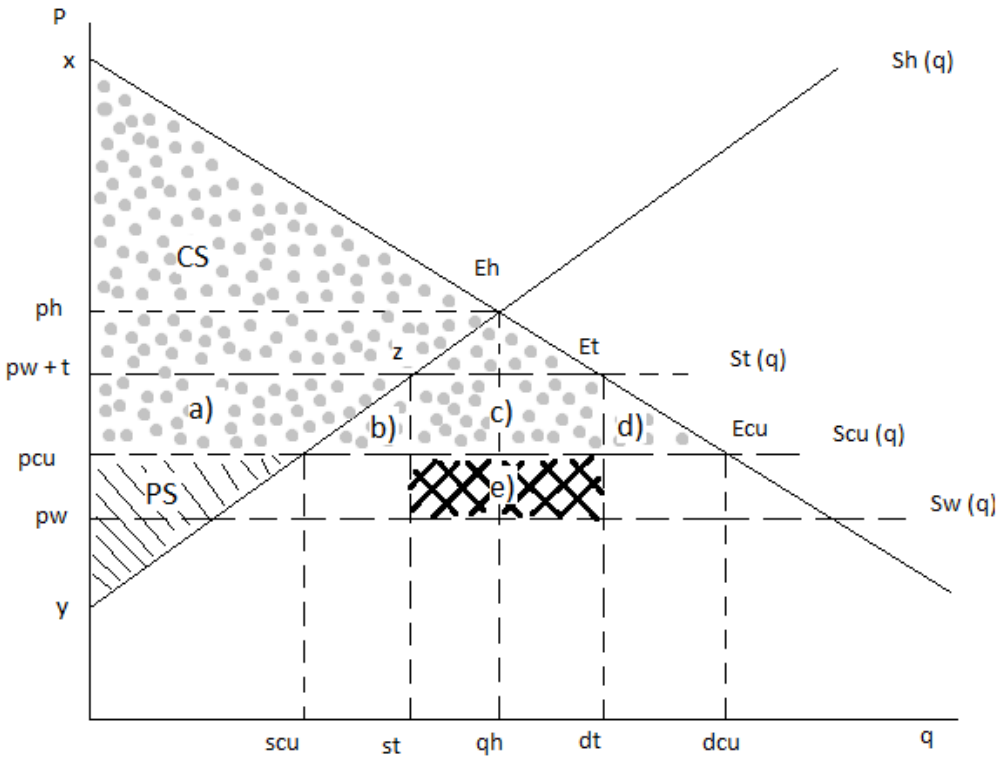
trade equilibrium, perfectly price elastic supply on the world market, and neglects economies of scale and transaction costs. The market needs of at least three participants, home country H, partner country P, and world economy.

Figure 2-1 illustrates the partial equilibrium model. *Sh(q)* is domestic supply, *Dh(q)* is domestic demand, *pw* is the world price, *ph* is closed economy equilibrium price, *pw+t* is world price plus tariff protection, *pcu* is the price established when countries H and P form a customs union. Eh, Et, and Ecu represent respectively partial equilibria under closed economy, open economy with tariff protection, and open economy with customs union.

Before the customs union is established countries protect their markets with active tariff measures. Domestic supply of country H is *st*, domestic demand is *dt*, and import from the rest of the world at price *pw+t* equals *dt – st*. Country H's welfare is equal to consumer surplus (CS), depicted by triangle *x-pw+t-Et*, producer's surplus (PS), depicted by triangle *y-z-pw+t*, and areas c)+d). The areas c)+d) represent tariff revenues of country H. When the country considers creating a customs union with country P it faces the following dilemma. The union will result in lower price *pcu* due to the elimination of tariffs between the two countries. Under such price CS enlarges to triangle *x-pcu-Ecu* and PS reduces similarly. Domestic supply changes to *scu* and domestic demand expands to *dcu.* Regions a) and c) does not represent welfare gain or loss, it is merely an internal redistribution of welfare. Regions b) and d) represent positive welfare effects of customs union for country H but there is also a negative welfare effect equal to the loss of part of tariff revenue equal to region e).

This forms the central point of the analysis. If the regions b) and d) are bigger than region e), the customs union is going to have trade creating effects for country H. If the opposite holds, the customs union will be trade diverting. This leads to the finding that one can make no general judgements about the effects of a customs union.

Figure 2-1: Welfare effects of customs union of small and big country



Source: Viner 1950, own drawing

The issue of whether customs unions are beneficial for the joining countries became increasingly important during the second half of the previous century when the European Community began to develop and expand. However, the EC was not the only emerging customs union. Southern African Customs Union (SACU) was formed already in 1910, Andean Community (CAN) in 1988, Southern Common Market (MERCOSUR) in Latin America in 1991 and others followed. It looks important to study these effects especially in the case of the EU because it is based not only on the economic cooperation but also on political goals. Under such circumstances it is possible that some states may temporarily sacrifice economic benefits in order to become part of the regional political development. Croatia is an interesting country in this regard because of its historical struggles in the region. The country may have strong non-economic incentives to become part of the Western Europe and escape the problematic relationships with its neighbours.

Sun and Reed (2010) evaluate agricultural trade-creation and trade-diversion effects of some of the most important free trade agreements (FTAs). Using Poisson

Pseudo-Maximum-Likelihood estimator (PPML) they find large increases in agricultural trade among the members of the ASEAN-China, EU-15, EU-25, and Southern African Development Community FTAs. The authors find significant trade diversion in most of the FTAs. In many cases trade creation appeared in the beginning of the FTAs and disappeared later on. Sun and Reed finish their study by saying that they did not find much evidence to support the claim that FTAs lead to multilateral lowering of trade barriers. The same method is employed by Muhammad and Yücer (2010) who show big variability of regression estimates for studied FTAs. Trade creation is documented for CAN, CARICOM, CACM, and MERCOSUR but is insignificant in the case of NAFTA and LAIA. Trade diversion is associated mainly with LAIA, NAFTA, and MERCOSUR.

Korinek and Melatos (2009) study these trade effects in the agricultural sector on the cases of ASEAN, MERCOSUR, and COMESA FTAs. Using a gravity model they discover trade-creation between the members of the FTAs but no robust evidence for trade-diversion with respect to imports from countries not in the FTAs. In sum, they observe these FTAs as net trade creating but there is no robust evidence of trade creation with non-member states.

Agriculture is very important sector for Croatia and so it is necessary to inspect what impacts the accession will have on it. While the effects of Croatia on the EU are expected to be marginal, if any, there are several expectations what the EU regulation and free trade might cause for the Croatian economy. Croatia has to accommodate the EU tariff regulations which might result in a dramatic change of Croatian trading partners and trade effects. The price levels of many agricultural products in the EU are historically much above the world price level due to the EU's protection of domestic farmers and higher costs of labour. The CAP of the EU and external tariffs create rigidities on the market of agricultural products. All of this casts doubts about the competitiveness of Croatia farmers and their ability to cope with the change of the regulation. These and other issues in the agricultural sector, which Croatia has to face in its new historical era, will be discussed in detail in the following section. The discussion of literature is also going to serve as a motivation for the study of this topic.

2.2 Economic impacts of Croatian accession

The following section is going to discuss the economic effects that the EU accession might induce on Croatia based on the views of emerging literature on the topic. At first, general economic effects will be discussed and after that the discussion will focus more on the agricultural sector. Both the immediate changes and predictions are to be addressed.

Overall, it is expected that gains to the Croatian economy will outweigh the costs, although some sectors of the economy might be more impacted than others (Lejour, de Mooij 2001). Looking at the issue from the other point of view, Croatian accession is unlikely to cause any major implications on the EU market. If one considers the small size of Croatian economy coupled with already high rate of trade cooperation with the EU the impact of Croatian accession is likely to be marginal. This is confirmed by a recent study of Boulanger et al. (2013) who does not observe significant impact on the GDP of EU-27. From the perspective of the EU budget, the enlargement in 2013only incorporates one state and so the additional costs are not that high. For the sake of clarity Figure 2-2 lists the states that belong to the CEFTA.

Figure 2-2: Member countries of the CEFTA in 2014

Source: own preparation

Richter (2008) tries to predict the additional expenses for the CAP in the case of accession of six Balkan countries – Albania, Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, and Serbia. Using some simplifying assumptions and past data he arrives at the following figures: under the assumption that the six countries would join the EU in 2004, in 2013 the direct payments and rural development expenditures on these 6 new countries would be around EUR 1.5–3 billion which would represent around 3%-6% of all the CAP expenditures. Croatia alone would be given around EUR 0.6-1.2 billion, which not that high amount. Because of this the further literature discussion will be oriented on the impacts on Croatian economy.

Radulescu (2012) perceives the following main economic challenges for the Balkan countries via the EU membership: acquiring a new model of growth orienting more on domestic sources of investment instead of foreign direct investment, need for structural reforms, improving the speed at which the reforms take place, increase in wages, and focus on education. He concludes strong by claiming that deeper economic integration in the EU structures is the only feasible economic policy in the long run.

Lejour et al. (2009) predict increase in Croatian consumption per capita by 2.6 percent just by participation in the EU free market and GDP increase by 8 percent, conditional on successfully undergoing institutional reform. Boulanger et al. (2013) confirm positive expectations, observing small-scale increase in Croatian GDP. Lejour et al. (2009) expect balance of trade between the EU and Croatia to rise. Additional financial stimulus is expected from Cohesion and Structural Funds from which Croatia will be able to withdraw funds. Between years 2009-2012 the EU provided Croatia all together more than EUR 620 million. Similar amount is promised to come after the accession in the first six month. Moreover, Croatia is promised to be net receiver with respect to the EU budget for at least six years. Producers can additionally ask for subsidies. Croatian government is aware that many of the producers are unaware of the possibilities they have and are unprepared to withdraw the money. The government therefore tries to inform public and actively participate in the dialogue. Lejour and Mooij (2001) distinguish two major economic effects of the accession. They attribute the first one to becoming part of the EU free market and the second one to a set of policies, such as changes of external tariffs,

reduction of trade barriers, and changes to the labor market. They expect the former to be much more influential than the latter.

Holzer (2013) studies the impact of Croatian accession on regional trade. Using the Global Simulation Model he reaches a conclusion that since Croatian tariff protection changes by non-significant amount, there are not to be any major changes in prices or output for CEFTA members. Both Croatian overall consumer prices and output might fall by around 0.4% each in the short run. In the long run, these negative effects are to be offset by incoming EU funds. Focusing solely on export size, he predicts the Croatian exports towards the EU to rise by 2.2%, while the exports with rest of the world and the CEFTA countries to decrease by 1.5% and 0.7% respectively.

The research on the impacts on the agricultural sector does not yield so straightforward expectations. Majority of Croatian farmers work on small-sized agricultural land usually not more than units of hectares. Most of these farms operate only on the part-time basis and their returns are low. According to Mollers et al. (2008) Croatian farmers do not share positive feelings about the accession and anticipate it with doubts. Many of them are uncertain if they will be able to stay in business. As a result, only few of the farmers plan to expand their businesses while most of them plan to shift to other types of income. A different source of worries stems from the fact that Croatian agricultural products are often quite expensive in comparison to those of the EU. With respect to that farmers fear that their products will become uncompetitive in the new free market. Additionally, the structure of farmers is not disadvantageous only for efficiency reasons but also because of the CAP dotations. The empirical evidence shows that large farms are privileged in the EU and receive unequally high subsidies through the CAP.

With the accession to the EU Croatia had to exit CEFTA. Croatia traded under CEFTA scheme since 2003 where preferential trade benefits were ensured bilateral preferential tariff agreements. For example, the trade between Croatia and Bosnia and Herzegovina amounted for EUR 1.9 billion in 2010, making it the second largest importer of Croatian goods at 15% of total volume. (EconomyWatch 2010) Once part of the EU, tariffs to CEFTA will rise, which could mean that farmers will have to find new demand for their products. This holds especially for Bosnian market

where Croatian export will have to face tougher competition. Considering other economy sectors, since Croatian industrial producers will have to face higher tariffs to the CEFTA countries, it is expected that Serbia will aim to take place of Croatia, as a leader of CEFTA trade. Therefore, some Croatian producers may find themselves uncompetitive. Having this in mind some Croatian producers have started to move their production to the CEFTA countries.

Kiss (2011) studies the evolution of exports and imports of new member states after their accession. Using actual data from EUROSTAT she concludes that economic situation of farmers improves after joining the EU. Another observed fact documents that new member states create new important market where products from the EU can be sold but the same is not true for the exports from the new member states. Although the EU provides market for these products, agricultural imports from the EU increase much more. This leads to the decrease of trade balance in agricultural products of the new member states.

Boulanger et al. (2013) supply early evidence about the reaction of the Croatian agricultural sector to the accession. Agricultural production seems to expand by 1 percent but food production contracted by 5.5 percent. Total exports of the agricultural products are to increase by 7.4 percent, out of which export of food products decrease by 2 percent. As far as import is concerned, the total amount of agricultural products is expected to fall by 6.1% and total import of food products is going to rise by 11.2%.

In sum, there is not a unanimous agreement among the researchers about the effects of the accession on Croatian economy. Some authors suggest there are serious concerns connected with the loss of Balkan trading partners or that accession will have uneven impacts on different sectors of Croatian economy. However, most of the authors expect positive outcomes. The major concerns are raised with regard to agricultural sector across the researchers.

3 Croatian accession process

This chapter will briefly comment on the Croatian road towards accession. It will cover the CEFTA period, beginnings of the EU accession negotiation, and main issues encountered on the way.

3.1 History of accession process

Before proceeding to the EU accession process, a brief history of political development of Croatia is going to be discussed. The declaration of independence in 1991 was not an immediate end to the armed conflicts. It took four more years and the help of the United Nations to definitively liberate the country from Serbian troops that were remaining in the country. After the troops abandoned the country, Croatia focused its political attention towards integration. The negotiations were successful and soon the country signed important economic and political agreements. Croatia became member of the United Nations and negotiated economic cooperation with the European Economic Community (EEC) in 1992. The cooperation with the EEC that was transformed into the EU in 1993 culminated in the SAA. The agreement was ratified by Croatia and the European Parliament (EP) in December 2001. The agreement had to be further ratified by all the EU member states. This process took another three years, Italy being the last member to acknowledge the treaty on the 8th October 2004. Finally, the agreement entered into force at the beginning of 2005. The SAA was of a great importance for the future heading of the Republic. By successfully negotiating the SAA Croatia made a big step in Stabilization and Association Process preparing it for the EU membership. The SAA established considerable regional cooperation, trade liberalization, and financial cooperation. (www.mvep.hr)

During the ratification process of the SAA, Croatia applied for the EU membership on the 21st February 2003. Following the recommendation of the EC the European Council made Croatia a candidate country in June 2004. However, the condition for the start of the negotiation was Croatian cooperation with the

International Criminal Tribunal for the former Yugoslavia (ICTY) so that the war crimes committed before 1991 could be investigated (www.euractiv.cz). The accession negotiations opened in October 2005 after the ICTY confirmed cooperation of Croatia.

In the same year as Croatia applied for the EU accession process it became a member of the Central European Free Trade Area. This union was founded in 1992 in Krakow by Poland, Czechoslovakia and Hungary and it was a first step towards the European integration. Moreover, the Association agreement with the EU expanded by the declaration about the future membership in the EU was the essential criterion of the CEFTA membership. But by the time Croatia was acceding most of its other members were already leaving for the EU, so only Romania and Bulgaria stayed in the CEFTA with Croatia. While the Macedonia joined the CEFTA in 2006, Romania and Bulgaria had been already preparing their abandonment for the EU. This led to the expansion to the south-east Europe and the criteria were diminish to allow new members access. Even though Macedonia, Serbia and Montenegro are now considered as candidate countries, the rest of the CEFTA members are only potential candidates, so the criterion was simplify only to any Association agreement with the EU. Therefore the CEFTA lost its role as a preparation for the EU and became more permanent trading partnership.

Croatia happened to be the first country that left the CEFTA while not being joined by its significant trading partners. The previous members of the CEFTA left for the EU jointly, transferring their CEFTA trade partners with them, basically just changing the union. This is why the Croatian accession is so unique and hardly comparable with any other cases. Nevertheless, it is important to investigate this case as its consequences may give a strong signal to the remaining Balkan countries aiming for the EU membership sometime in the future.

For Croatia, as for the other future anticipated members, the acquis consisted of 35 chapters. The number of chapters has been increased from traditional 31 in order to split the most difficult chapters and unite some of the easier ones. Croatia managed to close all 35 chapters but there were some difficulties on the way - namely in chapters Judiciary and Fundamental rights, Financial control (due to a high level of corruption), or Social Policy and employment. Another issue in the accession process

was the border dispute with Slovenia. The chapter Agriculture and Rural Development was opened in October 2009 and closed in April 2011. The negotiations were concluded on 30th June 2011 and after successful Croatian referendum where 66% of participants voted in favor of accession, Croatia signed the Accession Treaty on the 9th December 2011 and the accession date was set on the 1st July 2013. The ratification process in all the member states was finished in June 2013 and so Croatia joined the EU as planned. By becoming a member Croatia had to leave Central European Free Trade Area (CEFTA) which it was part of since 2003.

3.2 Border dispute with Slovenia

The major diplomatic obstacle that stood in way of the accession to the EU (and also to the NATO in 2009) was the border dispute with Slovenia. Apart from land border disagreements, the main issue was the maritime border. Slovenian part of the Gulf of Piran is directly neighboring to Italian and Croatia waters, therefore having no access to international waters. While Slovenians wanted to readjust the border in order to gain corridor to the international waters, Croatia claimed large sea based on the Article 15 of the United Nations Convention on the Law of the Sea. The dispute originates to the dissolution of Yugoslavia when both countries delimited their borders. In the first version of delimitation draft both countries agreed on the shape of the border cutting the Gulf of Piran in the center. A year later, Slovenia decided to change the draft and claim the whole Gulf of Piran as Slovenian sovereign area. Both states tried to solve the issue diplomatically. Prime ministers of the countries signed Drnovšek-Račan agreement in 2001 and Bled agreement in 2007 but all of the attempts failed to resolve the matter to the satisfaction of both parties. The inability to find a compromise resulted in problems mainly for Croatia because Slovenia was ahead in integration processes of international pacts.

At first, economic relations of both countries hid the issue to the background but it become more apparent the closer Croatia got to the accession to the EU. In the end of 2008 Slovenia decided that the matter should be dealt with before the Croatian accession. The negotiations come to a deadlock for nearly a year when Slovenia finally agreed not to use the dispute against Croatia as leverage for the EU accession.

Nevertheless, the dispute still remained unresolved. Although Slovenia showed a good will and removed the border dispute out of the way Croatia was still unable to close the acquis because Slovenia did not permit the opening of chapter on foreign security and defense policy. It took 7 more months before both parties agreed to delegate the decision in the matter to international arbitrators. On the Slovenian side the decision had to be supported by referendum. It took place in June 2010 with very close 51.5 percent of votes agreeing to the arbitration. Finally, in May 2011 both countries submitted the case to the UN. It was decided that the arbitral tribunal will not be dealing with matter until Croatia signs the accession to the EU. At the moment, the tribunal is assessing the claims of both countries.

4 Agricultural sector in Croatia

The following part gives a description of the Croatian agricultural sector. It discusses economic characteristics, main products, farm structure, foreign trade, and changes after the EU accession that are visible in available data. Firstly, general facts about historical development are described. Secondly, economic performance and labour force in the sector are discussed. Lastly, the third subchapter focuses on foreign trade, structure of exports, and impacts of the accession. The findings in this chapter pave the way towards the technical section of thesis, where an econometric model is created.

4.1 General facts

Croatia has very high biodiversity. Owing to its geographical location the country has lowland regions with a significant amount of arable land, mountainous terrain, and coastal areas. The agricultural production has developed in accordance with climate and location. Lowland parts produce mainly wheat, corn, sugar, and oilseeds, mountains are used as pastures for livestock and represent a source of milk pork, and beef, and in the coastal areas there are good conditions for viticulture, fruit, and olives. The northern part of the country is the richest with respect to agricultural production. The region has continental climate and is characterized by arable land, and technologically advanced farming and livestock production. Central part is mountainous with the prevalence of small farms. Typical agricultural production comprises of livestock, forestry, clay mining, and wood processing. Finally, the coastal part of the country focuses on fruit production. Table 4-1 shows chosen basic economic indicators for Croatia in 2013.

The farms are usually small with low-scale production. The land is mostly privately owned. While the number of medium-sized farms grows, Croatia is still characterized by small number of large-scale holdings and majority of small-sized farms up to 2.5 ha. The average farm size in Croatia is 2.4 ha. Furthermore, majority of the small farms have their farming lots scattered away from each other. The

fragmented and small-sized farming land is the reason why the agricultural production does not achieve high efficiency. The goods of these small farms are either produced for own consumption or sold at local markets. (EIU 2006, Volk 2010, EC 2009)

Table 4-1: Croatian basic economic indicators, 2013

2013	Croatia	Slovenia
GDP, million EUR	43,127.9	35,274.9
Population	4,262,140	2,058,821
Export of goods and services in % of GDP	43.3	78.1
Import of goods and services in % of GDP	42.4	71.5
Share of agriculture on GDP	4.8	3.1
Share of agriculture on total export	13.5%	4.5%

Source: Eurostat, Croatian Bureau of Statistics, Statistical Office of the Republic of Slovenia 2014

The agricultural sector was severely damaged during the war in the first part of 1990s. According to EIU report (2006), wheat production fell by more than 60%, cattle was reduced to half of around 500 thousands heads and sheep numbers decreased as well, but not so drastically. The sector began to recover in the first decade of the new century, but it was rather unequal. Cattle headcount stayed on the half of the pre-war 1990s levels and yields lagged behind the EU. However, there were observable improvements in production technology leading to higher yields in non-livestock production.

4.2 Economic characteristics

Agricultural sector forms a significant part of the Croatian economy and keeps its share in the economy above 5%. The data in Table 4-2 show somewhat

volatile but decreasing trend in share of population employed in the agricultural sector and its contribution to the gross value added in the economy (GVA). These data suggest that Croatia is converging towards the developed member states of the EU and shifting its economic orientation. There still is high percentage of people working in the agricultural sector, being at 13.7% in 2012.

There is in total 1.3 million hectares of cultivated land in Croatia which represents 23% of the total land area (Volk 2010). Plough land and gardens occupy 66%, permanent pastures are on 27% of the land, orchards, vineyards, and olive grows account for 7%, vegetables are grown on 0.4% of land, and finally 0.1% remains for plants. (Croatian Chamber of Economy 2013)

In 2009 the EU was the main trading partner of Croatia. In total, 63% of Croatian imports originated from the EU and 61% of Croatian exports headed to the EU. (EC 2009) The proportion changed to roughly 60% in 2011. (Boulanger 2011) Nevertheless, the neighbouring non-EU countries also represent significant trading partners – mainly Bosnia and Herzegovina and Serbia. Approximately 10% of the value of Croatian trade was obtained from Western Balkans in 2011. Although the country has a favourable climate, it is a net importer of agricultural and food products since 1994. Croatia imports tropical and Mediterranean fruits, coffee, live pigs, cattle, cocoa, and oil crops.

Food and drinks processing industry is a crucial part of the economy. Exports of food products accounted for 74% of overall agricultural and food exports in 2009.

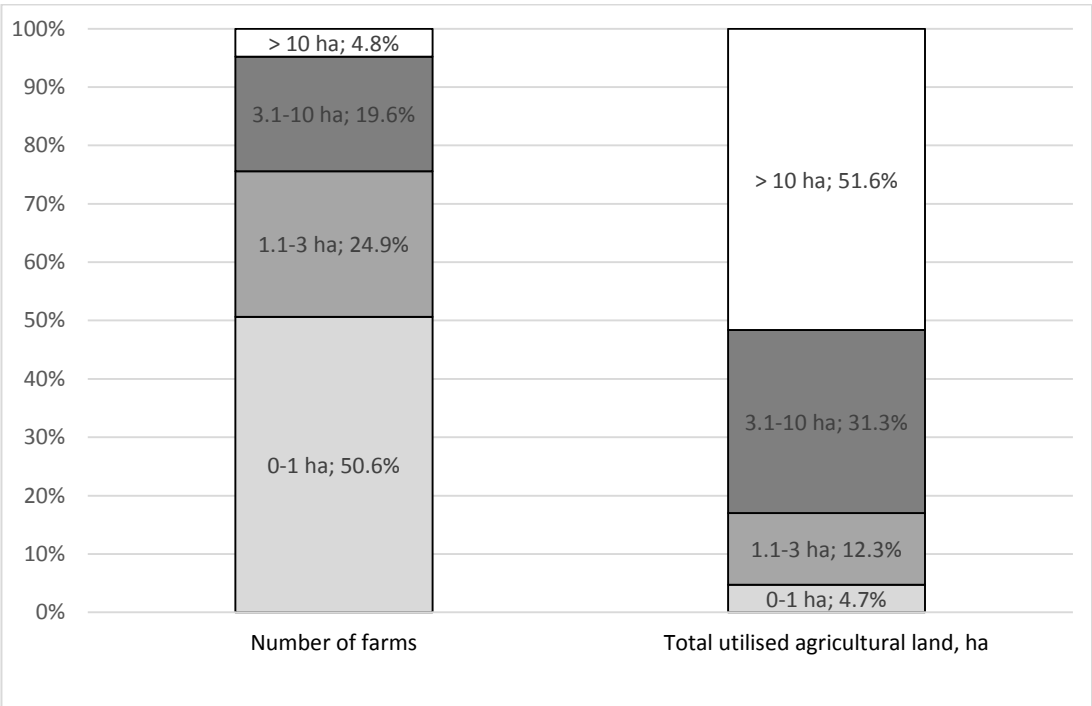
Table 4-2: Employment and gross value added, Croatia, 2002-2012, in %

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Share of pop. employed in agriculture	n/a	n/a	16.4	17.2	14.2	13.0	13.4	13.9	14.9	15.4	13.7
Share of gross value added by agri. (basic prices)	6.4	5.2	5.6	5.0	5.2	4.9	5.0	5.6	5.7	n/a	n/a

Source: Croatian Bureau of Statistics, Statistical Yearbooks – various issues 2014, EUROSTAT 2014

It was mentioned earlier that majority of the farms in the country are small-sized. Figure 4-1 shows the number of farms with respect to the amount of land each single farm cultivates. This can be seen in the left side of the figure. Over 50% of all the farms in Croatia cover area smaller than 1 hectare. Another 45% is represented by farms within the range of 1 to 10 hectares and only around 5% remains for large-scale production of the size of more than 10 hectares. The right side of the Figure 4-1 shows that out of all the cultivated land approximately 52% is controlled by large-size farms, leaving 48% for farmers with small businesses.

Figure 4-1: Farm structure and utilized agricultural land by size classes, Croatia, 2003

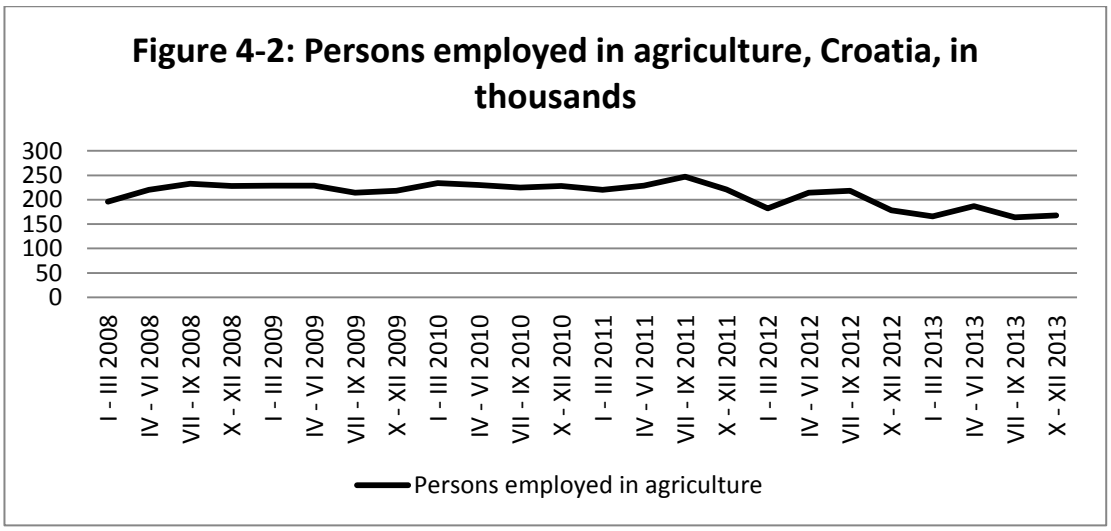


Source: Croatian Bureau of Statistics 2014

4.3 Croatian farmers and employment

This subchapter will briefly discuss the conditions of Croatian farmers and comment on the development of number of persons working in the agricultural sector of the economy. Comparisons will be made with other European states in order to better assess the situation of Croatia.

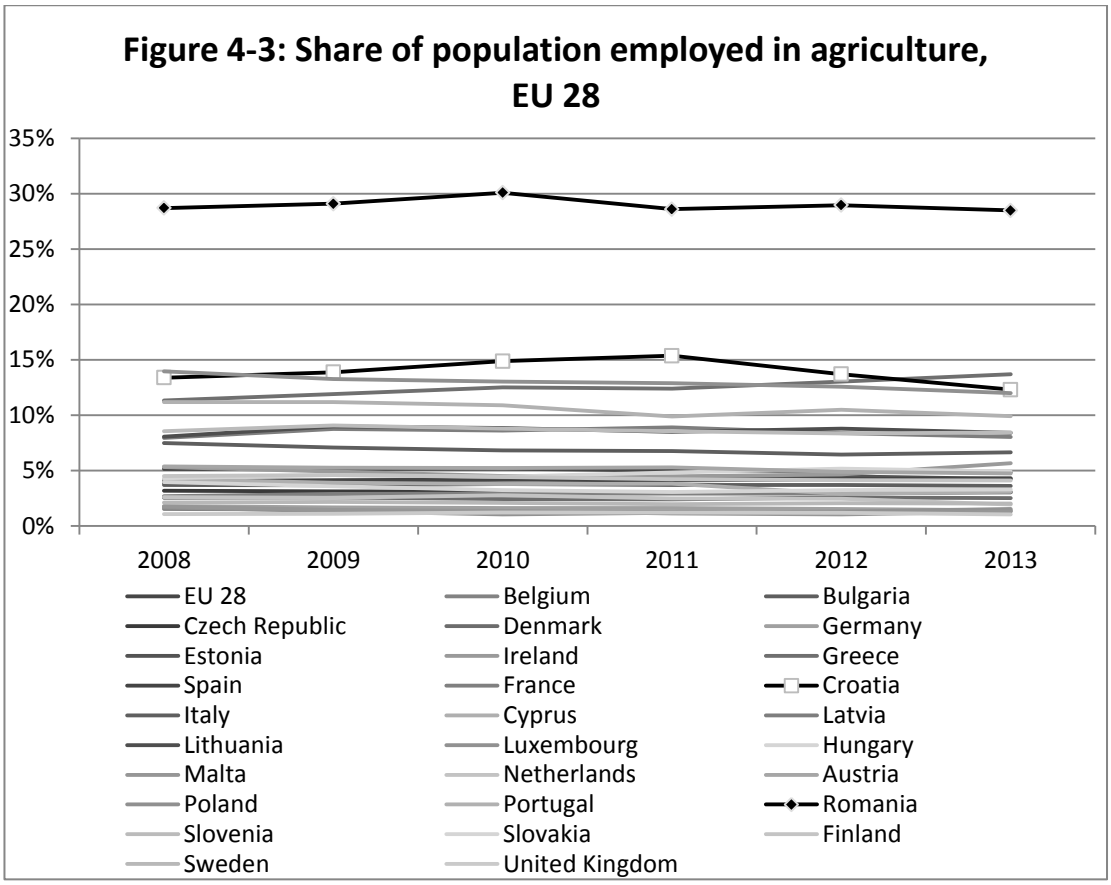
The number of persons working in the agricultural sector was steadily rising over time, reaching nearly 247 thousands in 2011. However, this number reduced to 168 thousand by the end of 2013 as depicted on Figure 4-2. Moreover, the percentage of people working in the agricultural sector lowered to 12% in 2013, while it was 15% in 2011. This is demonstrated by Figure 4-3.



Source: Croatian Bureau of Statistics 2014

The numbers seem to indicate a decline in the Croatian agricultural sector although the accession promised supportive measures for the farms improving their situation. New direct funding was promised to crowd out the old market-distortive elements; support for small farmers became available in order for them to be competitive in the economy, and focus was put on support of rural development which is the area where the CAP is heading these days. Nevertheless, the farmers seem to be fleeing the field.

When comparing Croatian employment with other EU member states in Figure 4-3, it is clear that it belongs in the group of countries with the highest employment in the sector over the long run. The only two countries with higher agricultural employment rates in 2013 were Romania and Greece.



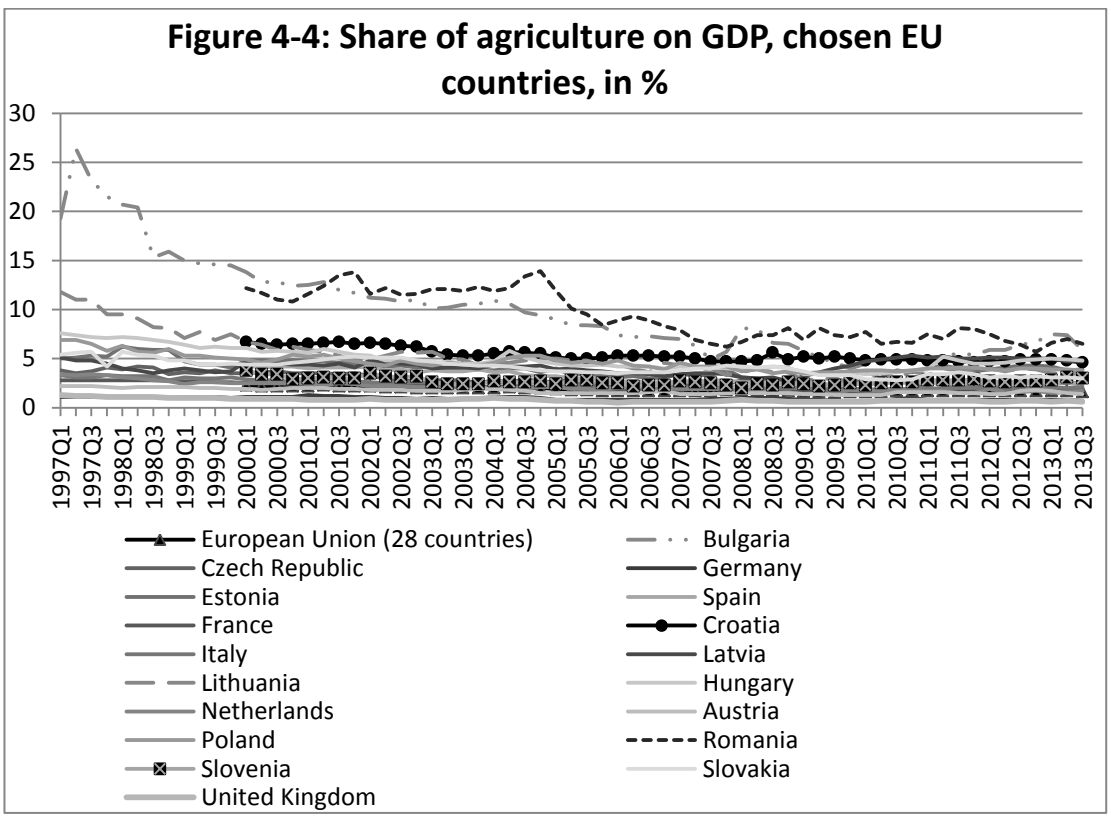
Source: Eurostat 2014

Croatian farmers have long tradition in manufacturing local food specialties, e.g. pršut ham. Interestingly, the industry is also characterized by long term lack of basic production inputs. For example the manufactures of the ham lack high quality domestic pork and so they must rely on the foreign import. Croatia also imports milk, beef, and vegetable oils. (Bozic and Meth-Cohn 2013)

The increased competition which Croatia is facing in the EU market is likely to influence employment. Croatian farmers are especially worried about their product being competitive among the high quality products in the already functioning EU market. However, it is not the only country affected. Bosnian export is likely to face severe difficulties as well since Croatia belongs among their most preferred trading partners. The Bosnian governmental inability to adjust domestic agricultural standards to meet the EU standards in order to open new markets for Bosnian products caused Bosnian exporters to have tied hands. Chicken farm near Sarajevo may serve as an example. The farm in the hills of Visoko produces 100 thousand chickens every forty days and the whole production is sold to Croatia. When Croatia

entered the EU the trade could not happen anymore because Bosnia cannot export to the EU since its products does not meet hygiene codes. (Ronalds-Hannon 2013)

Another way how to assess the magnitude of the sector is to look at the percentage of the agricultural output share on the total GDP. Figure 4-4 shows the quarterly data of all the European member states. Average values for 2013 display 4.8% share for Croatia, 3% share for Slovenia, and the whole EU 28 average is only 1.7%. Regarding this measure, Croatia has a long term non-increasing trend from 5.3% in the end of 1997 to 4.6% in the third quarter of 2013. Slovenia shares a similar trend with the EU accession having no severe impacts of this measure. Generaly, all the countries converge to lower values over time, being consistent with the low value average of old EU member states.



Source: Eurostat 2014

In sum, absolute value of people employed in the agricultural sector, share of people working in the agricultural sector, and share of agricultural products on the

total output slowly decreases. Croatia farming is uniquely characterized by the huge share of small farms on the total number.

4.4 Trade fluctuations after the EU accession

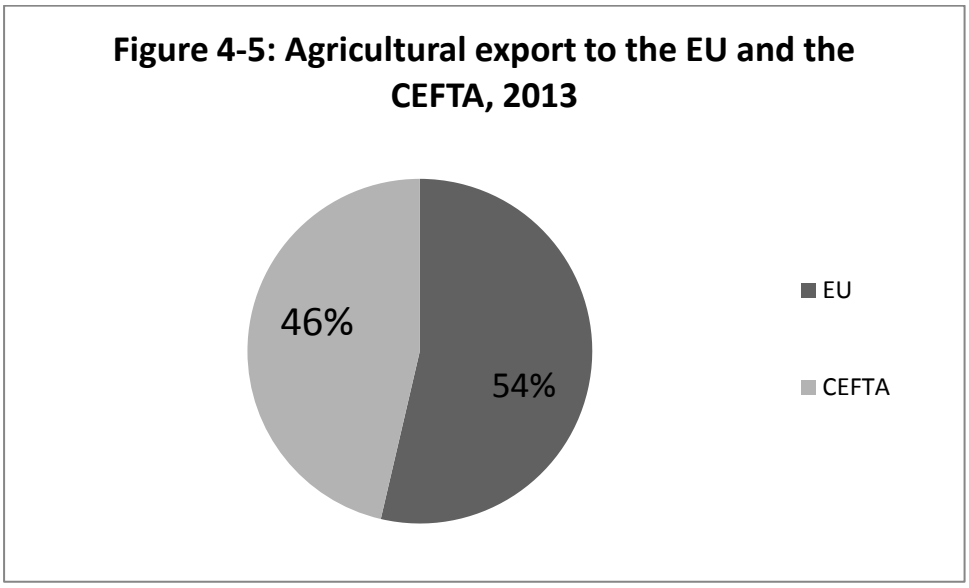
This section will describe how Croatian trade flows with the European and CEFTA members evolved after the accession. This analysis is done mainly to verify one of the stated hypotheses, which anticipates increase in trade relation with the EU states. Trade with all 27 member states is examined. The data used for this analysis come from the online database of the Croatian Bureau of Statistics.

Historically, Croatia has established very strong trade relations with local CEFTA members, especially Bosnia and Hercegovina. Both industrial and agricultural products were traded in large amount with the country. While the trade in industrial goods will not be much affected the story is quite different for agricultural products. Change in tariff regime will cause Croatian prices of meat, fruit, vegetables, and milk products to rise in Bosnia and Hercegovina and other non-EU countries. Bosnian export will suffer as well, especially export of beef, sugar, wine, and fish. Additionally, *"…recent negotiations between BiH* [Bosnia and Hercegovina] *and Croatia concluded that there will be only two official export border crossings and this is going to increase transportation costs for many Bosnian producers, lowering the competitiveness of their products in the Croatian market.*" (Radovanović 2014)

The top three importers of Croatian goods in the EU are Italy, Slovenia, and Germany in the order. The amount of agricultural imports to Italy reached 133 million EUR in 2013, which is 12% of total Croatian export of such products. Slovenia and Germany imported agricultural products in the amount of 95 million EUR and 62 million EUR, which constitute 8% and 5% of total Croatian agricultural export respectively. The main non-EU importers are CEFTA members Bosnia and Hercegovina and Serbia (including Kosovo). The two countries imported goods in the amount of 292 and 107 million EUR, which represented 31% and 11% of total Croatian exports in 2013. (Croatian Bureau of Statistics 2014)

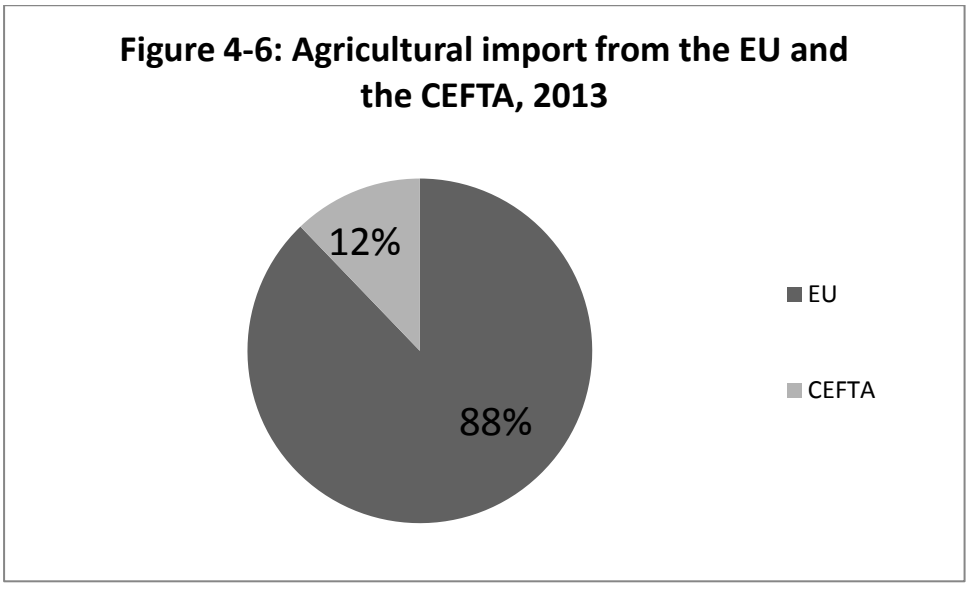
Figure 4-5 and Figure 4-6 show the comparison of imports and exports to the EU and the CEFTA at the end of 2013. Figure 4-7 shows the structure of exports to

the eleven most substantial trading partners. A clear message of the graph is that Bosnia and Hercegovina has been by far the biggest importer of Croatian agricultural products. As already mentioned above Italy, Slovenia, and Serbia are the following highest importers. However, the most important conclusion of the graph is that we can see that while export to Bosnia and Hercegovina (and Serbia) decreased after Croatia entered the EU, at the same time the exports to European countries started to rise.

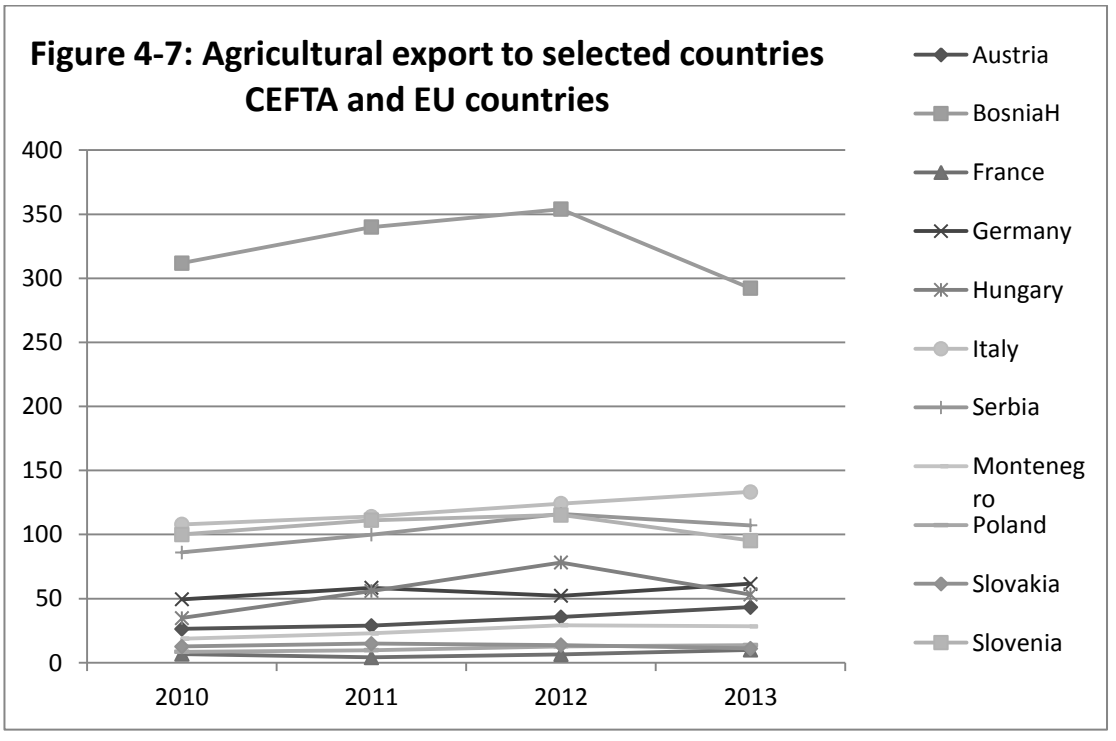


Source: Croatian Bureau of Statistics 2014

The very important fact that is worth mentioning is that the total trade with non-EU members was higher than the trade with the EU in the period 2010-2012. The change occurred in 2013 where the ratio shifted in favour of the EU member states. The former significant amount of trade with Bosnia and Hercegovina, Serbia (including Kosovo), and Montenegro makes very clear why Croatia was unsure about the effects of accession. The prospects of losing such important trading partners were unsettling. This is shown in Figure 4-7.



Source: Croatian Bureau of Statistics 2014



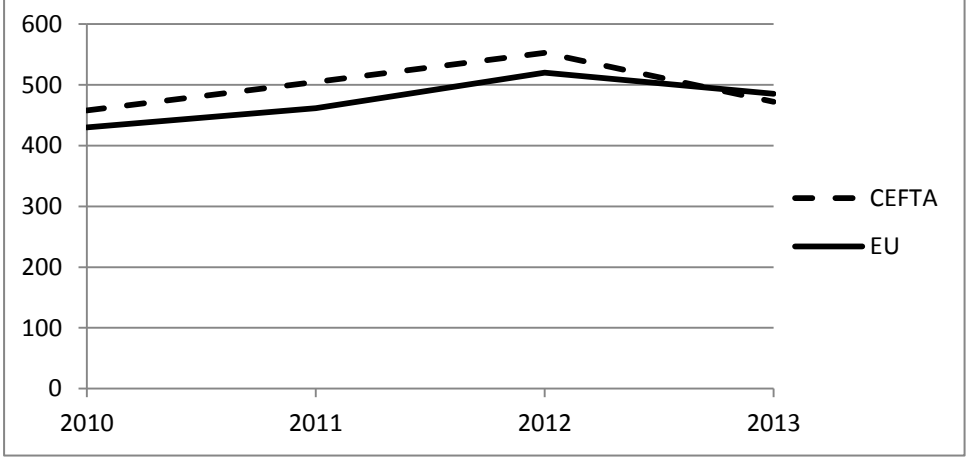
Source: Croatian Bureau of Statistics 2014

The Croatian agricultural export to Bosnia and Hercegovina declined from 35% of total exports in 2010 to 31% in 2013. Expressed in the total value it dropped from 312 to 292 million EUR. The main reason why the EU imports exceeded the CEFTA imports in 2013 was the 60 million EUR worth drop in exports to Bosnia and Hercegovina. (Croatian Statistical Office 2014) While exports to both the CEFTA

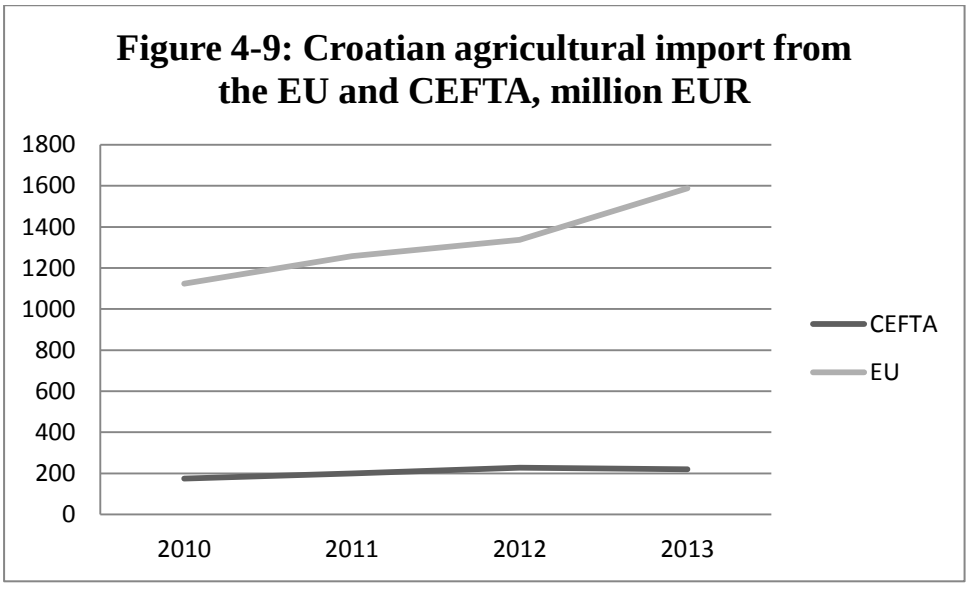
and the EU dropped from 2012 to 2013, exports to CEFTA staggered much more. The trend depicted in Figure 4-8 is consistent with the switch in trade flows in favour of the EU and beginning of the decrease of importance of exports to CEFTA.

Another interesting view is offered by studying agricultural import data. Figure 4-9 shows the evolution of agricultural imports from EU and all CEFTA countries. While older data demonstrate growing imports from both unions the newer data offer different picture. Import from the EU rises rapidly in 2013 while import from the CEFTA remains stagnant. It is safe to conclude that either the EU imports were stimulated by the accession (the EU products were encouraged to enter Croatian market in bigger volumes) or some part of the CEFTA imports were replaced by the at the time cheaper EU imports.

Figure 4-8: Croatian agricultural export to the EU and CEFTA, million EUR



Source: Croatian Bureau of Statistics 2014



Source: Croatian Bureau of Statistics 2014

In sum, the analysis above gives rise to expectations that Croatian export patterns are likely to change with the EU membership. Collapse of trade barriers is likely to encourage additional trade with the EU members on the expense of former trade patterns, e.g. Bosnia and Hercegovina. Similar conclusion can be drawn from the development of agricultural import, which also shows increasing preference for the goods originating from the EU. The real question is whether the change of orientation will be beneficial for Croatia. The Croatian goods are likely to face stronger competition and augmented standard requirements. The answer to this question is going to be looked for in the fifth empirical chapter. Relative welfare effects of the CEFTA and the EU membership are going to be compared.

4.5 Pre-accession and post-accession financial assistance – comparison with Slovenia

This chapter will focus on financial assistance provided to Croatia during the accession process and after the accession itself, also reviewing the future financial flows from the CAP policy. The ability of Croatia to withdraw funds from the EU will be compared with the ability of Slovenia.

The structure of the European funds dedicated to financial help to the future member states was shaped through time. The first programme that financed part of

the Croatian transformation expenses to meet the EU standards was the CARDS programme (Community Assistance for Reconstruction, Development and Stabilisation). The programme was running from 2000 to 2004. The programme was linked to the previous funding of 6.8 billion EUR from various sources spent since the beginning of 1990s on the assistance for Balkan countries. The goal of the programme was to support participation of the Balkan countries (Albania, Bosnia and Herzegovina, Croatia, Serbia, Montenegro, Kosovo, and Macedonia) in the Stabilisation and Association Process. The main areas on which the CARDS programme was targeted were support to refugees, trade, investment, and social cohesion, crime prevention, boarder management, reform of public administration and environmental issues. (Delegation of the European Union to the Republic of Croatia 2014a)

Another programme focused on applicant states was PHARE (Pologne Hongrie Aide à la Reconstruction Économique). It was designed by the European Union in order to assist the applicant countries of Central and Eastern Europe in their efforts to future membership in the EU. When Council of Ministers formally invited these countries to submit their application for the EU membership in 1993, the programme became centred towards these ends. The measure included significant boost of funds for infrastructure investments. While PHARE started to be oriented more on the acceding countries since 1993, the complete focus was not put forward until 1997 when enlargement process initiated. Since then the programme's only priority was helping the accession countries to meet the goals desired under Accession Partnership and those pinned down in the Road Maps Partnership. The main goals of PHARE programme were to strengthen efficiency of public administration and other institutions so that they were prepared to function once inside the EU, to promote the country's adoption and implementation of acquis communautaire to speed up the process, and to support economic and social cohesion. (Delegation of the European Union to the Republic of Croatia 2014a)

Next, the Instrument for Structural policies for pre-accession (ISPA) was created to finance infrastructure projects specified in the Accession Partnerships and address environmental issues. ISPA was established in 1999 by European Commission's proposal to ameliorate economic and social cohesion in the CEE

countries for the period of 2000-2006. The goals were thus similar to those of PHARE programme The main objectives of the programme were to finance major environmental and transport projects, to help accession counties with the understanding of at the time present EU policies and procedures, and to connect the countries to the trans-European transport networks. The fact that ISPA focused on the above described topics it allowed PHARE to address different aspects of economic and social cohesion. (Delegation of the European Union to the Republic of Croatia 2014a)

Lastly, the EU introduced SAPARD programme (Special Accession Programme for Agriculture and Rural Development). It was created to assist the accession countries to implement the acquis. Further, it involved efficiency and competitiveness enhancing measures to improve the situation of domestic agricultural sectors of accession countries. It encompassed strategies to help farming sector and achieve sustainable level of development in rural areas. The programme served its purpose until 2006.

In 2007, the pre-accession assistance programmes were merged into Instrument for Pre-accession (IPA). It was a financial instrument for the purpose of accession processes in the period of 2007-2013. The merger of all the previous instruments into a single one resulted in wide scope of the new programme. Having a variety of goals it provided assistance in multiple areas including agriculture.

The degree of financial help provided was scaled by the progress achieved by a relevant country in the accession process. The beneficiary countries were divided into three categories based on their progress. The first group was in fact Croatia, which was the only acceding country. The second group consisted of candidate countries, listing Iceland, Macedonia, Montenegro, Serbia, and Turkey. The third group were potential candidates to the EU membership – Albania, Bosnia and Herzegovina, and Kosovo. The goals of the IPA programme targeted the harmonisation and implementation of the acquis and preparation of the countries to be able to withdraw structural funds. Due to efficiency reasons the IPA is divided into five components

- Component I – Assistance in transition and building of institutions

- Component II – Cross-border cooperation
- Component III – Regional development
- Component IV – Human resources development
- Component V – Rural development (IPARD)

First and second group of countries can apply for funds from all of the components but the third group is eligible for the help of only the first two components. This is because the components III-V focus on management of the EU funds after accession. (Delegation of the European Union to the Republic of Croatia 2014b)

Croatia managed to extract significant amount of financial assistance from the pre-accession funds. From the pre-2007 period it obtained the highest financial help from the CARDS programme in the amount of 278.8 million EUR in the period 2000-2004. In the next two years Croatia withdrew 167 million EUR under PHARE, 60 million EUR under ISPA, and 25 million EUR from SAPARD. In total, Croatia was awarded, around 490 million EUR from the pre-2007 funds. In the period 2001-2006 Croatia has extracted the highest amount of assistance from pre-accession funds, 127.1 million EUR. Finally, the IPA financial allocation in the period 2007-2013 was over 1 billion EUR. The highest amount was received from component Regional Development, followed by Transitional Assistance and Institution Building (Delegation of the European Union to the Republic of Croatia 2014a)

Let us now turn to the case of Slovenia. The country also used its rights for pre-accession and post-accession financial support, based on the statute of an accession country. Slovenia began to draw financial help from the EU in 1992 by the means of PHARE instrument, only half a year after declaring its independence on the Soviet Union. Therefore, it is clear that PHARE programme became one the priorities for the new Slovenian government after its emergence. In the first months after gaining international recognition it started its way towards European integration by creating the Inter-ministerial Co-ordination for Foreign Technical Aid, which was governed by domestic Ministry of Science and Technology. The established department was solely responsible for managing all kinds of foreign assistance programmes, including the PHARE funding. The first year's funding reached 9

million EUR. On 7th October 1992 the Skeleton Agreement was signed with the European Commission that introduced additional supportive measures in financial and other areas. Financial assistance was focused mainly on the restructuring of Slovenian economy in the early years of function of the programme. Slovenia channelled the money into privatisation of public companies, remnants of the Soviet era, sanitation of public deficits, banking sector, improvement in infrastructure, education, technology, environment, energy, and tourism.

As the country proceeded towards the EU membership the assistance reoriented on convergence with respect to the EU standards and requirements. Several reforms and legislative harmonisation occurred. Within the new framework the focus was aimed at strengthening of the state administration in order for it to be able to efficiently cooperate on the EU level, getting Slovenian inhabitants familiar with the EU and its policies, and supporting the domestic parliament. Slovenia started to draw additional funds from the Cross-border Co-operation Assistance programme because its economy became significantly intertwined with some of the EU's member states' economies. The cooperation was initiated with Italy, Austria, and Hungary in the mid-1990s.

The next period from 2000-2006 was characterized by extensive focus to meet the Acquis requirements. Financial assistance became extensive during the period, reaching all together around 420 million EUR. Around 175 million EUR came from PHARE programme, including around 50 million EUR from PHARE Cross-border Co-operation programme with Italy, Austria, and Hungary, around 60 million EUR from horizontal inter-state programmes, some 45 million EUR from the SAPARD programme, and around 140 million from the ISPA instrument. (Delegation of the European Union to the Republic of Croatia 2014b)

A significant factor influencing the utilization of the EU funding policies was the absorption capacity of the state and its ability to match finances. Although Slovenia managed to sustain a very high degree of absorption capacity the total amount of pre-accession assistance was one of the lowest among the acceding countries. Overall, across all pre-accession programmes, Slovenian withdrew around 450 million EUR in the period 1992-2003. (Office of the Government of the Republic of Slovenia for Development and European Affairs 2014)

While Slovenia reached for support in the amount of about 450 million EUR over 12 years, Croatia was given more than 1 billion EUR in funding over 13.5 years. When comparing Croatia and Slovenia, the former country managed to extract about twice as much as the latter but this could be well attributed to Croatia being twice of a size of Slovenia. Nevertheless, the evidence showed that Croatia was at least as good in extracting funds as Slovenia and so there is no basis for pessimistic expectations.

4.6 Slovenia pre- and post-accession experience

This chapter will compare the case of Slovenian accession and its impacts on its agriculture. Various economic indicators are going to be compared with Croatian development.

Slovenia began to strive for accession shortly after its independence and succeeded in 2004 accession wave, after 12 years. Accession to the EU has significantly changed the structure of agricultural support for Slovenia. Direct payments became the most important element of the support. Together with CAP reform it meant gradual decoupling from agricultural production. The decoupled direct payments ensure a safety measure for farmers in the form of income support not dependent on the amount of the produced goods. This ensures that they react to the market forces in order to maximize profits and do not receive perverse economic incentives to expand production all the time. Additionally, direct payments in combination with cross-compliance with the EU environmental and animal safety regulations lead to the provision of positive public goods. This leads to sustainable environment friendly farming.

Incomes of rural farmers increased under DP scheme in comparison to the situation before the accession (application of the schemes). The farms with more intensive production the positive effects of the scheme were higher. (Erjavec et al. 2005)

Slovenia had nearly no change in land use when comparing years 2003 and 2005 and 2007. The productivity in cereal yields increased by approximately 0.75 tons/ha between periods 2000-2003 and 2004-2007. Agricultural and beverages exports in 2007 were 165% of 2003 value. Before the EU accession Slovenia

exported mainly processed agricultural products. This changed significantly with the accession when Slovenia began to focus more on the export of raw materials in the agricultural sector. Similarly to Croatia, Slovenia also experienced quite significant increase of imports of agricultural products. In 2003, Slovenia imported products of value 675 million USD and by 2007 the figure rose to 1501 million USD. (Csaki 2009)

The price of cereals remained generally unchanged between 2003 and 2007, the meat priced raised by 26%, milk prices increased by 3%. Similarly to Croatia, Slovenia also has a very large share of small farmers. In 2007, 18 590 farms were below 2 ha and 44 990 farms were in the range of 2-10 ha, out of total 75 300 farms (94% of farms were below 100 ha). Between 2003 and 2007, the total number of farms decreased by 2%.Slovenia is quite unique in this regard with comparison to the other NMS who had significantly lower number of such small farms. (Csaki 2009)

Share of agriculture to the total GDP remained rather unchanged in the period 2003-2010, being among 2.39 to 2.5 %. However, when comparing the size of agricultural holdings, there is a significant increase in the number of bigger farms and decrease in the number of smaller farms. Around 220 more farms above 50 ha and 170 new farms in the range 20-50 ha have emerged in the period since 2000 up to 2007. Since the accession there has been an increase in the area used for organic farming.

Overall, the accession had positive impact on the agricultural sector. It had no adverse impact on production; lead to higher current prices and at the same time increase in the amount of both exported and imported goods. Moreover, the income of farmers increased. The membership resulted in significantly higher amount of subsidies which were granted to the farmers but the support was not evenly distributed. The large and more intensive farms have always benefited from the scheme. (Driouech 2014)

5 Empirical framework

5.1 Model description

In order to study the impact of Croatian accession to the EU on its agricultural sector the thesis will use gravity equation approach. Gravity model is one of the most utilized empirical frameworks for studying international trade relations. The first researcher who used such framework to perform an analysis of FTAs was Tinbergen (1962). Since then the gravity model approach has developed into widely used tool to assess trade creating and trade diverting effects of FTAs.

Sun and Reed (2010) mention two recent issues inherent to gravity models. The first problem is presented by potential endogeneity of the FTAs so that there is potential reverse causality between higher trade volumes and FTAs in the model. *"The higher level of trade between two countries might lead to a higher probability for the establishment of an FTA. In addition, there remain many unobserved ties between nations (except where the countries speak the same language and have a common colonial relationship) that both increase trade and make regional agreements more likely. Thus, the coefficient estimates are biased because the error term is correlated with the FTA dummy variables."* (Sun and Reed 2010, pp. 1352) The second issue is linked to the presence of zero observations in case of double logarithm model which is the most common gravity specification.

Most of the gravity model specifications depart from the general multiplicative form which can be described as:

$$X_{ijt} = e^{(\sum \beta_i D_i)} GDP_{it}^{\beta_1} GDP_{jt}^{\beta_2} \times POP_{it}^{\beta_3} POP_{jt}^{\beta_4} sDIS_{ij}^{\beta_5} v_{ijt} \qquad (5.1)$$

where X_{ijs} is the amount of exports from country i to j at time t. $GDP_{it}^{\beta_1}$ *and* $GDP_{jt}^{\beta_2}$ represent respective GDPs of exporting and importing countries; $POP_{it}^{\beta_3}$ *and* $POP_{jt}^{\beta_4}$ respective populations of given countries; $sDIS_{ij}^{\beta_5}$ stands for distance between the two countries; D_i values are dummy variables (their number and types vary); and

finally υ_{ijt} is error term. Dummy variables are usually employed to denote similarities and differences between two countries, such as common language or colonial history, but most importantly to distinguish whether there are members of the same FTA or not.

By taking the logarithm of equation (5.1) it is commonly transformed to:

$$\begin{aligned}\ln X_{ijt} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln POP_{it} \\ + \beta_4 \ln POP_{jt} + \beta_5 \ln DIS_{ij} + \beta_6 Coml_{ij} \\ + \beta_7 Comcol_{ij} + \beta_8 boarder_{ij} + \sum_m \gamma_m FTA_{ijt}^m \\ + \sum_m \varphi_m FTA_{jt}^m + \sum_m \rho_m FTA_{it}^m + \varepsilon_{ijt}\end{aligned} \tag{5.2}$$

where the previously described variables remain the same, $Coml_{ij}$ is dummy variable for common language, $Comcol_{ij}$ is a dummy variable standing for common colonial ties, $boarder_{ij}$ is a dummy variable which is equal to 1 if countries are neighbouring each other, and lastly the three sums represent dummy variables to distinguish the memberships of two selected countries in different FTAs. The number and type of dummy variables can vary, depending on researcher intentions.

For example Lejour et al. (2001) used gravity equations to evaluate the accession impact for Central and Eastern European countries (CEEs). They found that accession to the internal market was of much more importance than the elimination of bilateral trade barriers and introduction of common external tariffs. They construct the following model:

$$X_{ijs} = \alpha_s Z_{ijs} + \beta_s D_{ijs}^{EU} \tag{5.3}$$

where dependent variable X_{ijs} is logarithm of exports from country *i* to *j* in industry *s*. Vector Z_{ijs} comprises various explanatory variables, such as GDP per capita of the exporting and importing countries, the distance between the capitals of countries, tariffs between countries, and various dummies. D_{ijs}^{EU} represents the dummy that

equals one if both countries of interest are members of the EU at the time of measurement.

Muhammad and Yucer (2010) study trade creation and trade diversion effects of various FTAs around the globe. Their model is characterized in the following way:

$$\ln m_{ijt} = \alpha_{ij} + \alpha_t + \beta_2 \ln Y_{it} + \beta_3 \ln Y_{jt} + \sum_{k=1}^{6} \left(\beta_{RTA_{tc}}^{k} RTA\_tc_{ijt}^{k} + \beta_{RTA_{td}}^{k} RTA\_td_{ijt}^{k}\right) + \varepsilon_{ijt} \tag{5.4}$$

where α_t is the time dummy and α_{ij} are country pair characteristics effects which are constant over time. The dummy variables in the bracket serve the same purpose as in the previous examples, to distinguish the effects of memberships of the two countries. It is apparent from the gravity model studies that the general idea is to incorporate distance variable into the equation and dummies for studying the effect of accession. The number and type of other dummies is researcher-dependent and varies across studies.

5.2 Gravity equation model for Croatian case

This section is going to discuss the actual model specification used for the study of Croatian trade balance. Based on the wide literature usage of gravity equation framework for similar topics and more or less consistent consensus on the structure of such models the thesis will establish a similar model for Croatia. The key parts of the model are going to be kept, while composition of the used dummies will be altered. Only three dummies will be included in the regression because the main focus of the study is to detect possible trade creation of trade diversion effects of the EU. The model is constructed as follows:

$$\begin{aligned}\ln X_{jt} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln POP_{it} \\ + \beta_4 \ln POP_{jt} + \beta_5 \ln distance_{ij} + \beta_8 boarder_{ij} \\ + \beta_9 EU_{ijt} + \beta_{10} CEFTA_{ijt} + \beta_{11} EU_{it} + \varepsilon_{ijt}\end{aligned} \tag{5.5}$$

where index *i* always stands for Croatia, index *j* stands for one of the counterparties, which will be listed further in the chapter. GDP is GDP in a given country at time *t*, *POP* is population in given country at time *t*, *distance* is distance between Zagreb and capital of country *j*, and *boarder* is a dummy variable that is equal to 1 if country *j* shares common border with Croatia. EU_{ijt} is a dummy variable that equals to 1 if both countries (Croatia and given country) are both in the EU. If one of the countries or both are not members of the EU at time *t* then the dummy variable is equal to 0. $CEFTA_{ijt}$ is a dummy variable that is equal to 1 if Croatia and the given member state are both in the CEFTA at time *t*. Otherwise it is 0. The dummy variable EU_{it} equals to 1 if Croatia is a member of the EU and the other country is not. Otherwise the dummy variable is equal to 0. This setting allows us to study the pure effects of the CEFTA and the EU memberships while also being able to compare the magnitude and significance of effects.

The main sources of data are internet statistical databases and publications. Data for the GDP and population levels are obtained from EUROSTAT online database. During the data assembly it was discovered that EUROSTAT does not have relevant data of GDP for Bosnia and Herzegovina and Serbia. Therefore, for these two countries the GDP data was obtained from national statistical offices online websites. The data were in local currencies and so had to be recalculated to Euro currency. End of the year exchange rate was applied to all of the data entries. The data for the population of Bosnia and Herzegovina wasn't available on EUROSTAT so the population data was obtained from Bosnian national statistical office. The population data are on yearly basis only. Therefore, the figure for any given year is used in the dataset for each quarter of the given year. Main source of agricultural data is Croatian Bureau of Statistics. It provides data for various period lengths and allows working with the data decomposed to individual agricultural sectors. The data for agriculture are composed of 24 groups based on the Customs Tariff (CT 2) groups.

In the model, all of the variables are of quarterly periodicity. The covered time period ranges from 2010 to 2013, therefore making time dimension of 16 periods. Last two periods are of especial use because this is the time where Croatia is already member of the EU and so the dummy variable has a different value. Unfortunately, due to data availability, no previous or successive periods could be added.

Due to unavailability of quarterly data for the export of agricultural products for majority of periods, the yearly (or half-yearly in the case of year 2013) data were divided based on the absolute quarter aggregate agricultural export to a given country and so this is the way how the quarterly data were estimated.

Number of cross-country units is 30 because the dataset includes 27 EU member states and 3 countries from CEFTA partnership. Only Bosnia and Hercegovina, Serbia, and Montenegro are included in the dataset because the share of Croatian trade with the rest of CEFTA countries is marginal and therefore considered unimportant. There are no missing observations in the dataset set and so it is strongly balanced. Altogether, the dataset includes 480 observations (16 time periods times 30 cross-section units).

As was described in chapter 3, the most important trade partners in agricultural sector are member states of CEFTA and member states of the EU. Therefore, the model will estimate the trade between Croatia and each of all 27 members of the EU and between Croatia and countries from CEFTA that were important for Croatian agricultural before Croatian accession to the EU. The three CEFTA states were also chosen because of the possibility to acquire the necessary data for this model; specifically the quarterly data for GDP were not available for the rest of the CEFTA countries. The data of Serbia includes also Kosovo as Serbia does not acknowledge Kosovo's independence. Due to the unavailability of specific data it was impossible to separate them in the model.

The statistical software used for all the regression estimations was STATA. Initially, the model was estimated using Pooled Ordinary Least Squares method (POLS). This method was chosen because of its simplicity and good predictability given the assumptions of the method are satisfied. In order to justify the selection of the method, the model was tested for autocorrelation using Wooldridge test for

autocorrelation in panel data written for the Stata software by David Drukker. The null hypothesis of the test, stating that there is no autocorrelation, could not be rejected with p-value being very close to 0. Consequently, estimation technique was switched and Generalized Least Squares (GLS) framework was introduced. The model was estimated using GLS for panel data. This estimation process provided results that satisfied homoscedasticity and no autocorrelation properties. Looking at the statistical significance of the variables, some of them were observed to be insignificant. Variables GDP_{it}, POP_{it} and the dummy variable *border* had t-values equal to 1.36, -1.30, and 0.48 respectively, so they were gradually excluded from the model. The removal of a single or combination of two above stated variables did not improve the significance of the model or the p-values of other variables and so all three were discarded. The final model was eventually constructed in the following form:

$$\ln X_{jt} = \beta_0 + \beta_1 \ln GDP_{\mathrm{jt}} + \beta_2 \ln POP_{jt} + \beta_3 \ln distance_{ij} + \beta_4\, EU_{ijt} + \beta_5\, EU_{it} + \beta_6\, CEFTA_{ijt} + \varepsilon_{ijt}$$

where GDP_{jt} is GDP in given partner country *j*, POP_{jt} is population in given partner country *j*, *distance* is distance between Zagreb and capital of country *j*, EU_{ijt} is a dummy variable that equals to 1 if both Croatia and partner country are both in the EU at time *t*. EU_{it} is a dummy variable that equals to 1 if only Croatia is a EU member at time *t*, and $CEFTA_{ijt}$ is a dummy variable that is equal to 1 if Croatia and given partner state are both members of CEFTA at time *t*.

Based on logical reasoning, coefficient of the *GDP* variable is expected to be positive. Higher GDP means bigger market allowing for more imports. The sign of the *population* variable estimate is expected to be positive because of higher population translates into higher demand. The *distance* coefficient is supposed to be negative since higher distance brings increased transaction costs. The dummy variables EU_{ijt}, EU_{it} and $CEFTA_{ijt}$ are expected to be positive but the relative strengths of the effects is not to be judged beforehand.

5.3 Results of the model

This section is going to describe and explain the results of the model. Only the GLS estimation will be discussed as the previous modelling frameworks were eliminated during the estimation process.

The export from Croatia to the counterparty (dependent variable on the left side of the equation) is dependent on the GDP and population of the counterparty, distance between their capital cities and dummy variables representing countries' membership in the EU or CEFTA. The Table 5-1 shows the results obtained by the estimation of the final model.

Table 5-1: Results of the gravity equation model

	Estimate	Standard errors	t-value	p-value
lnGDP	- 0.7745985	0.1311824	- 5.9	0.000
lnPOP	1.683788	0.1434768	11.74	0.000
lndistance	- 2.284035	0.1219969	- 18.72	0.000
EU_{ij}	0.4255817	0.2516769	1.69	0.091
EU_i	1.69957	0.7420678	2.29	0.022
$CEFTA_{ij}$	1.495415	0.3608577	4.14	0.000
cons	10.15461	1.509314	6.73	0.000
N. of observations	480			

Source: own results

The essential variable of the gravity model is the variable *distance*. As reported in Table 5-1 the coefficient of distance is negative and equal to -2.284. This is consistent with general expectations that the higher is the distance between the trading countries, the smaller is the export from Croatia to the counterparty. This is simply caused by increased transportation costs. This variable has coefficient with the p-value close to 0 and so it is statistically very significant. The same holds for three other variables that are also were statistically significant: *GDP*, *POP* and $CEFTA_{ijt}$. Despite of the anticipation that with higher GDP there would also be higher export, the negative sign of the *GDP* coefficient shows that with 1% increase in the GDP of

the counterparty, the export from Croatia to this country is 0.7746% lower. This could be explained by the fact, that the biggest Croatian exporters are countries of CEFTA, Slovenia and Italy especially for their favourable distance. Except for Italy, these countries have average or rather low levels of GDP in comparison to other countries in the sample. Additionally, high GDP of a country may be correlated with stronger completion on the domestic market, resulting in lower profit possibilities for new market entrants. On the other hand, the anticipation of a positive sign of the *population* variable was proven to be correct. With the 1% positive increase in population of the counterparty, the export to this country from Croatia increases by 1.684%.

Two coefficients have the p-value not that close to 0. The first one is the EU_{ij}, which is statistically significant at 10% level of significance according to the p-value that equals to 0.091. Although this coefficient estimate is not as significant as the rest of the coefficient estimates, the 10% level of significance is still quite reasonable. Moreover, the dummy variable EU_{ij} is an important part of the regression because it shows both the effect of the Croatia's membership in the EU and along with other dummy variables it allows comparing various institutional memberships with situations without any partnership. By doing so it is possible to evaluate every single possible outcome given there are two unions. The second one is the EU_i, which is statistically significant at 5% significance level according to the p-value that equals to 0.022.

The most important variables for this thesis are the dummy variables dealing with participation of Croatia and the other countries in the EU and CEFTA. The three dummy variables cover all four situations that could possibly occur before and after Croatian accession to the EU. Croatia was in the CEFTA together with Bosnia and Herzegovina and Serbia until July 2013. At this point of time the only dummy variable that equals to 1 is $CEFTA_{ij}$ for the cases of trade of Croatia with CEFTA countries. Its coefficient is equal to 1.495 which can be added to the intercept. On the other hand, in this time period Croatia was not in the EU, so the other dummy variables equal to zero therefore there are not additional effects that increase the export to the countries inside the EU.

After the Croatian accession to the EU and leaving the CEFTA, the situation is different. For the case of trade with CEFTA countries, the dummy variable $CEFTA_{ij}$ changes from 1 to 0 and the dummy variable EU_i changes from 0 to 1. The third dummy variable remains still zero. The coefficient of EU_i variable equals to 1.699 which shows that the Croatian accession to the EU did not cause diminishment of export to the CEFTA countries. Even though the export to CEFTA countries was smaller in the 2013, the model shows that the membership of Croatia in the EU can also have positive effect on the export to the countries of CEFTA. Lastly, Croatia became a member of the same union as the countries of the EU after the July 2013. Therefore the dummy variable EU_{ij} changes from 0 to 1 in the case of trade with an EU country and the other dummy variables are zero. The coefficient of the EU_{ij} variable equal to 0.42 and it shows that there is also a positive effect caused by Croatian membership in the EU.

If we compare the four mentioned alternatives depending on the Croatian EU or CEFTA membership and specific time period (before and after July 2013), we can see that the effects on Croatian export towards CEFTA and EU countries in the case of not being in the EU (therefore being member of CEFTA) are 1.495 and 0 respectively. These values are added to the intercept, making positive or 0 effect on the trade amount. The values of dummy variables that describe the effect of the accession to the EU are 1.699 and 0.42, respectively. By comparing these two situations, it is visible that the EU accession has only positive effect. The export to both EU and CEFTA states is ceteris paribus higher in the case where Croatia is an EU member. To put it differently, if we add the coefficient of the dummy variables to the intercept, for countries in the CEFTA the accession to the EU changes the value of the intercept by the difference between the coefficients of EU_i and $CEFTA_{ij}$, concretely the value increases by 0.204. For trade partners from the EU the value of intercept increases after accession by the value of the coefficient of the EU_{ij} dummy, which is equal to 0.42. In sum, it shows that even though both effects are positive, the effect of Croatian accession to the EU is higher for the export to the EU, as was anticipated (the positive effect on intercept changes from 0 to 0.42, which is bigger than change from 1.495 to 1.699). Therefore, the EU accession has positive effects on Croatian exports. Trade diverting effects of losing cheaper CEFTA imports are more

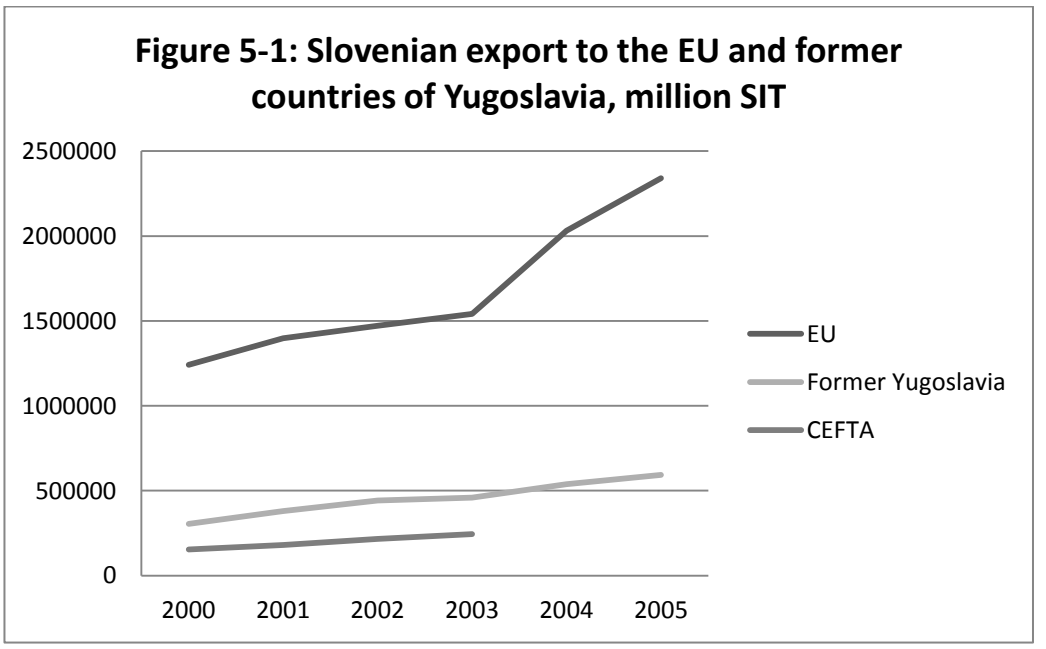
than mitigated by the trade creating effects of the new EU imports. The total welfare effect is in sum positive.

5.4 Comparison to Slovenian experience

Findings from the previous subchapter are little different from the expected results stated in the hypotheses in the introduction. Nevertheless, after the comparison with the Slovenian experience, the refusal of the fifth hypothesis is not so surprising. However, we have to deal with some limitations. In the Croatian case the thesis is focused on the agricultural part of import and export. This was chosen primarily for two reasons; firstly, the insecurity of Croatian farmers about their competitiveness and secondly, the significance of the agricultural sector in national GDP and foreign trade. In the Slovenian case, the agricultural share of the foreign trade before its accession into the EU was only between 3 and 4% in comparison with about 13.5% percent that Croatia had before its accession 9 years later. Even though it is possible to find the agricultural share of the total export, it is not possible to find the data divided according to destination countries. Therefore, the comparison with the Croatian case can be done only on the level of total export. This should not be a significant limitation since the proportion of the agricultural and total export is almost the same for all countries that trade with Croatia.

Other limitation is caused by the different former trading partners in the CEFTA. While Slovenia's trading partners in the CEFTA, except for Croatia, were the Czech Republic, Slovakia, Poland and Hungary, which left for the EU with Slovenia in 2004, and Romania and Bulgaria, that followed them to the EU in 2007, Croatia's partners in the CEFTA in the year of its accession to the EU were countries that acceded the CEFTA after Slovenia left and most of them were countries that emerged from Yugoslavia. Both Slovenia and Croatia have common history with former countries of Yugoslavia and therefore their trade has been also strongly oriented to this region. This means that when the CEFTA countries are supposed to be important and studied in the model in the Croatian case, the same countries have to be considered in the Slovenian case, but at the time they are called former Yugoslavia.

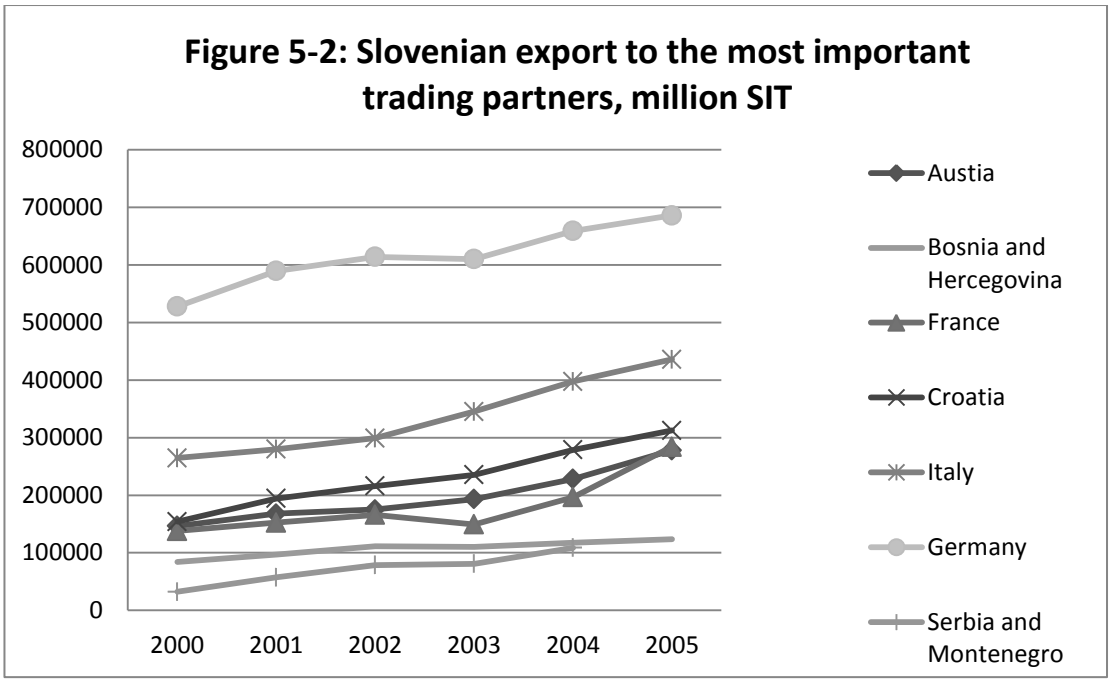
The last problem to be discussed is that Croatia entered the EU alone; on the other hand, Slovenia entered the EU with other nine countries. Therefore, in the Croatian case we can measure easily the effect of its accession because all other states stayed in the same union as they were before. In the Slovenian case, the export to the EU significantly increased after its accession but one part of the increase in the export can be explained by the plain fact that also other nine countries entered the EU and the export transferred with them. This is shown in the Figure 5-1 where we can see that in 2004 there is a large increase in the export to the EU. However, the EU 15 changed to EU 25 and so after 2004 the EU was the sum of the EU 15 and CEFTA (except for one tenth of the total export to the CEFTA, which equals to the trade to Romania and Bulgaria that remained in the CEFTA).



Source: Statistical office of the Republic of Slovenia

Nevertheless, the increase was 32% and it is evident that it exceeded the positive effect of other new members. This is also proven on the Figure 5-2 that shows the export to the most important trade partners. The significant increase in the export is also visible for the former countries of Yugoslavia. Moreover, the export to Serbia and Montenegro had the largest positive percentage change in the export, specifically 34%, and the change for Croatia was 18%, which was the third largest change after France. The data for the Slovenian export shows that the positive effect

of the EU accession on the export to both the EU and the CEFTA (meaning the former countries of Yugoslavia), as is in the Croatian case, was present also in Slovenian case ten years before.



Source: Statistical office of the Republic of Slovenia

From the model performed in the Croatian case and from comparison with Slovenian case we can see that the accession to the EU leads not only to higher trade with the countries of the EU, but also and maybe more importantly it does not lead to diminishment of trade with trading partners with which the above mentioned countries are historically linked through trade, share regional political development and for a long time formed a single country.

6 Conclusion

The purpose of the thesis was to analyse the impact of Croatian accession on its agricultural sector and deliver fresh evidence based on the recent data. At the time of writing of the thesis two quarters of post-accession data were available. The Croatian export of agricultural products was of the main interest and so it was studied more thoroughly using econometric framework. The choice of the topic was determined by its importance with regard to future widening of the EU. The information about Croatian accession impacts could provide other Balkan countries that head for membership with helpful suggestions about where to shift the focus of reforms and about problematic issues found in Croatian case. Comparison of this case and Slovenian accession was performed throughout the chapters of the thesis because both countries belong to the same geographical region, acceded to the EU, were members of the CEFTA, and have similar unique farming structure.

The first chapter being Introduction, the second chapter focused on theories of trade creation and trade diversion as well as on the current academic literature studying the Croatian agricultural developments. Original model of Jacob Viner and its extensions were discussed and graphically illustrated in order to show that customs union may not necessarily lead to welfare gains. By reviewing the current works on the Croatian accession and agriculture the section reached the following understandings. There is an agreement among the authors that the agricultural sector is considered to be one of the most (if not the most) vulnerable sectors of the economy with regard to the accession. Majority of authors also quote fears about the loss of competitiveness in the EU free market and subsequent shrinkage of the number of domestic farmers. The authors, however, do not have a uniform view on the welfare effects but it seems that prevalently they anticipate overall positive effects, especially when the EU funding is taken into account.

The fourth chapter was dedicated to extensive analysis of Croatian agricultural sector. It showed that farming structure is quite unique by having a very large number of small scale farms. This was found to be similar to Slovenian case.

The early data and Slovenian experience suggest that employment in the agricultural sector is not significantly adversely effected. There is a small decrease over time recorded in both Slovenian and Croatian case but nothing substantial. The expectation of the first hypothesis was therefore confirmed but the amount is so far not threatening. The share of agricultural production on the total output was generally lower in Slovenia but did not exhibit any major fluctuations after the EU accession. Therefore, similar results can be expected in the case of Croatia and early data confirm this observation. Both Slovenian empirical evidence and Croatian early data suggest that EU accession leads to significant increase in imports from the EU. The total amount of Croatian agricultural exports in 2013 was lower than in 2012 but this is not likely to be caused by accession. The increase in imports tends to be higher. The last two quarters of 2013 indicate that Croatian agricultural export to the EU has for the first time overtaken the exports to the CEFTA. It is mainly cause by significant decrease in trade with Bosnia and Hercegovina, to which the export fell by 14%. This confirms the expectations of the third and fifth hypothesis. The forth hypothesis seems not to be confirmed since there was quite immediate and significant decrease of CEFTA trade and also significant 20% increase in the value of imports from the EU. Through the history of accession Croatia was also able to extract nearly twice as much of the EU pre-accession financial assistance in comparison to Slovenia. This suggests that Croatia seems to be institutionally capable of handling the withdrawal of EU funds and should not face serious difficulties requesting CAP payments as asked by hypothesis number two.

The fifth chapter introduced the econometric model studying the effects of accession on Croatian exports. GLS modelling framework had to be used, since OLS method assumptions did not hold and fixed effects were not found significant. The model estimation results showed that the EU membership has positive effects on the volume of exports. If the four alternatives of Croatian institutional membership and specific time periods are compared, we can see that the effects of dummy variables, measuring the accession impact on Croatian export towards CEFTA and EU countries in the case of not being in the EU, (therefore being member of CEFTA) are 1.495 and 0 respectively. The values of dummy variables that describe the effect of the accession to the EU are 1.699 and 0.42, respectively. By comparing these two

situations, it is visible that the EU accession has only positive effect. Additionally, even the export to non-EU countries was discovered to be positively influenced by the EU membership.

In sum, the research demonstrates that Croatian agricultural sector is so far not showing any signs of significant detrimental effects caused by the accession. Additionally, the econometric analysis reveals only positive effects of the accession on the agricultural exports. The evidence provided should calm the fears of accession pessimists and present a valuable indication for both Croatia and other Balkan states that the EU accession does not endanger local economies.

Based on the results achieved in the thesis, the future development of the Croatian agricultural sector is likely to follow a similar path of Slovenia. Number of farmers will most likely diminish as the production will get more intensive and the structure of farms will slowly shift in favour of larger farm holdings because of the preferential treatment from the EU.

Lastly, it must be said that even though the new datasets provide post-accession data for econometric modelling, the time dimension is not extensive in order to register any long run effects. The conclusions reached above are a product of mixed past empirical experience and short run post-accession data and should be viewed as such. Naturally, there is going to be a space for future research as more data will become available in the future, allowing re-estimation using larger datasets.

Bibliography

Boulanger, P., Ferrari, E., Michalek, J., Philippidis, G., Vinyes, C. (2013): "Modelling the Effects of Croatia's Accession to the EU: Trade and Agricultural Policies." 135th Seminar, August 28-30, 2013, Belgrade, Serbia, European Association of Agricultural Economists

Bozic, M., Meth-Cohn, D. (2013): "Fertile Ground for Development: Making the most of EU membership for Croatia's rural areas." UNDP policy paper, *Printera Grupa d.o.o., Croatia*, ISBN: 978-953-7429-48-5, available at: http://www.kz.undp.org/content/dam/croatia/docs/Research%20and%20publications/local_development/UNDP-HR_2013_EN_web_08112013.pdf

Cooper, C.A. and Massell, B.F. (1965): "A New Look at Customs Union Theory." *The Economic Journal*, Vol. 75, No. 300: pp. 742-747

Csaki, C., Jambor, A. (2009): "The Diversity of Effects of EU membership on Agriculture in New Member States." *Policy Studies on Rural Transition No. 2009 – 4*, available at: http://www.fao.org/docrep/017/aq336e/aq336e.pdf

Croatian Bureau of Statistics (2014): "Statistical yearbooks", available at: http://www.dzs.hr/default_e.htm

Croatian Chamber of Economy (2013): "Agriculture." Agriculture, Food Industry And Forestry Department, available at: www2.hgk.hr

Delegation of the European Union to the Republic of Croatia (2014a): "PHARE." Available at: http://www.delhrv.ec.europa.eu/?lang=en&content=1285

Delegation of the European Union to the Republic of Croatia (2014b): "Instrument for Pre-accession Assistance - IPA." Available at: http://www.delhrv.ec.europa.eu/?lang=en&content=74

Driouech, N., Miličić, V. (2014): "Slovenian agriculture and rural areas in the post-accession period: achievements and challenges ahead." Available at: http://www.google.cz/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=19&ved=0CGcQFjAIOAo&url=http%3A%2F%2Fierigz.waw.pl%2Fdownload%2F15163-Dr_Vesna_Mili%25C4%258Dic_dr_Anton_Perpar_dr_Noureddin_Driouech_d

r_Hamid_El_Bilali_dr_Sinisa_Berjan__Slovenian_agriculture_and_rural_areas_in_the_pos.pdf&ei=chrJU4mGGOfG7AbLgYHABg&usg=AFQjCNGh8keNAw3OaY1QFfAVieE9lWZLfQ)

EC (European Commission) (2009): "Croatia - Agriculture and Enlargement." European Commission – Agriculture and Rural development, available at: http://ec.europa.eu/agriculture/enlargement/countries/croatia/profile_en.pdf

EconomyWatch (2010): "Croatia Trade, Import and Export." http://www.economywatch.com/world_economy/croatia/export-import.html

EIU (2006): "Croatia country profile." *The Economist Intelligence Unit Limited*, available at: eiu.com

Erjavec, E., Kavcic, S., Kozar, M. (2005): "Income Situation of Agricultural Households in Slovenia after EU Accession: Impacts of Different Direct Payments Policy Options." European Association of Agricultural Economists, available at: http://ideas.repec.org/p/ags/eaae05/24705.html

Euractiv.cz (2012): "Vztahy EU a Chorvatska." Available at: http://www.euractiv.cz/rozsirovani-eu/link-dossier/vztahy-eu-a-chorvatska-000070

EUROSTAT (2014): "Statistics.", http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

Gehrels, F. (1956-57): "Customs Unions from a Single Country Viewpoint." *Review of Economic Studies*, Vol. 24, No. 63

Holzner, M. (2013): "Impact of Croatian EU Accession on Regional Trade Patterns." The Vienna Institute for International Economic Studies, wiiw Policy Notes and Reports, No. 10, available at: wiiw.ac.at

Johnson, H.G. (1974): "Trade-Diverting Customs Unions: A Comment." *The Economic Journal*, Vol. 84, No. 335: pp. 618-621

Kiss, J. (2011): "Some impacts of the EU accession on the new member states' agriculture." *Eastern Journal of European Studies*, Vol. 2, Issue 2: pp. 49-60

Korinek, J., Melatos, M. (2009): "Trade Impacts of Selected Regional Trade Agreements in Agriculture." OECD Trade Policy Working Papers, No. 87, OECD publishing

Lejour, A., de Mooij, A. (2001): “EU Enlargement: economic implications for countries and industries.” CPB Netherlands Bureau for Economic Policy Analysis

Lejour, A., Mervar, A., Verweij, G. (2009): “The Economic Effects of Croatia’s Accession to the European Union.” *Eastern European Economics*, Vol. 47, No. 6, pp. 60-83

Lipsey, R.G. (1957): “The Theory of Customs Unions: Trade Diversion and Welfare.” *Economica*, New Series, Vol. 24, No. 93

Meade, J.E. (1956): “The Theory of Customs Unions.” Amsterdam: North Holland Publishing Company

Ministry of Foreign and European Affairs (mvep.hr) (2011): “The Ratification of the Stabilization and Association Agreement”, available at: http://www.mvep.hr/ei/default.asp?ru=228&sid=&akcija=&jezik=2

Mollers, J., Zier, P., Buchenrieder, G. (2008): Expectations, Strategies and Prospects of Farmers in View of Croatia's Pending EU Accession. *International Advances in Economic Research*, Vol. 14, No. 4, pp. 381-94

Muhammad, K., Yücer, A. (2010): “Impact of Regional Trade Agreements: Trade creation and Trade diversion in Western Hemisphere. ” Economics Papers from University Paris Dauphine, Paris Dauphine University, REPEC database

Office of the Government of the Republic of Slovenia for Development and European Affairs (2014): “Pre-accession Assistance.” Available at: http://www.arhiv.svrez.gov.si/en/areas_of_work/development_and_technical_assistance/archive/pre_accession_assistance/

Radovanović, M. (2014): “Croatia’s Accession to the EU and Changes in the Regional Trade.” Center for Security Analyses and Prevention, available at: http://www.cbap.cz/?p=1284&lang=en

Radulescu, A. (2012): “The Balkans: Between Economic Crisis and European Integration.” *Financial Studies* 2/2012, pp. 129-146, REPEC database

Richter, S. (2008): “Agricultural support: consequences of the eventual accession of the Balkan countries to the EU.” *Financial theory and practice*, Vol. 32, No. 2: pp. 181-193

Ronalds-Hannon, E. (2013): “Croatia’s EU membership spells trouble for Bosnia’s farmers.” *Deutsche Welle*, available at: http://www.dw.de/croatias-eu-membership-spells-trouble-for-bosnias-farmers/a-16849517)

Sun, L., Reed, M.R. (2010): “Impacts of Free Trade Agreements on Agricultural Trade Creation and Trade Diversion.” *American Journal of Agricultural Economics*, Agricultural and Applied Economics Association, Vol. 92, No. 5, pp. 1351-1363

Tinbergen, J. 1962. *Shaping the World Economy: Suggestions for an International Economic Policy*. New York: The Twentieth Century Fund.

Viner, J. (1950): “The Customs Union Issue.” New York: Carnegie Endowment for International Peace

Volk, T. (Ed.) (2010): “Agriculture in the Western Balkan countries ”, Studies on the agricultural and food sector in Central and Eastern Europe, No. 57, ISBN 978-3-938584-51-4, available at: http://nbn-resolving.de/urn:nbn:de:gbv:3:2-10874