

**The CAP and national priorities
within the EU budget
after 2020**



INSTITUTE OF AGRICULTURAL
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The CAP and national priorities within the EU budget after 2020

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19. The Hungarian and Polish agricultural trade in the light of CAP budgetary restrictions

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Abstract

Agriculture plays an important role in both the Hungarian and Polish economy. Although Hungary has significant agricultural trade plus far before the accession to the EU, while Poland turned to be net exporter only in 2003, right before it joined the Union. Its trade surplus has remarkably increased and stabilized around 7-9 billion USD in the last couple of years (WTO database).

The agricultural sector is heavily dependent on CAP supports, especially on 1st pillar sources, most notably on direct payments. However direct payments are strongly criticized for their unfair distribution and leakage (driving up land prices). Taking into consideration the anticipatory CAP budgetary restrictions, it is a question of how Hungarian and Polish farms/farmers are able to deal with productivity and competitiveness issues with lower support level.

Keywords: Common Agricultural Policy, agricultural production, agricultural trade

JEL codes: E23, Q17, Q18

19.1. Introduction

The Common Agricultural Policy (CAP) was established almost 60 years ago. Although it has changed significantly during these years, mostly by more or less effective reforms, but it still plays a vital role in the European agriculture. It still affects the life of 8.6 million farmers [Eurostat, 2018]. From agricultural trade aspect, the most important characteristics of the CAP are its main principles. They were set out at the Stresa conference in 1958 [Shucksmith, 2005]:

- community preference, which basically means market protection against third-country imports by common border and border protection (tariffs, quotas, etc.).
- financial solidarity is an important idea behind the European Union (or European Community that time), where each country must contribute to the common budget and developed countries (or regions) help the less developed ones.

- market unity has two major elements. First of all, it covers the so-called custom union where there are no internal barriers to trade meaning free intra-community trade. Its other element was the single market achieved in 1992. It made possible the “four freedoms”, the free movement of capital, goods, labour and services. From the trade aspect, free movement of goods matters most.

International examples show that trade agreements accelerate trade between the members and reduce it with other countries outside the ratifying countries. One of the major findings of Jayasinghe and Sarker on NAFTA (North American Free Trade Agreement) was that it has resulted in substitution effect in case of the six analysed agri-food products [Jayasinghe and Sarker, 2004]. NAFTA members traded among each other more and reduced their import from the rest of the world. They have proved accelerated trade within the NAFTA members. It was the initial expectation with the European Single Market¹. By using an extended gravity model, they have received the same results for the European Union’s six major agri-food products where intra-EU trade has increased at the expense of the third countries outside the EU [Sarker and Jayasinghe, 2007]. However, Coughlin and Novy [2012] found that domestic border effect can be higher than international one. They have built an own dataset that combined within county, county-county and county-foreign country trade flows. Informal trade barriers or bureaucracy can be the bottlenecks of free trade even on the European Single Market [Román et al., 2014]. But undoubtedly, trade declines dramatically with the distance [Leamer, 2007]. It is especially true for agricultural bulk products, e.g. wheat or corn.

Hungary and Poland have accessed the European Union (EU) together in 2004 as a part of the Eastern enlargement. Since then, it is often used two country blocks at EU level, EU-15 for the old member states (OMS) and EU-12 (or EU-13 with Croatia) for the new member states (NMS). It was already proved that trade connections have been tightened with the start of the integration process in every new member state [De Santis et al., 2005].

The chapter 18.2 deals with methodological issues and introduces data sources used for the calculations. It also describes the analytical framework of the study.

The chapter 18.3 gives a detailed overview of the importance of the Hungarian and Polish agriculture. Indicators used for this are the share of agricultural employment within the total workforce, the agricultural value added as a share of GDP and the share of agricultural trade value within the total export revenues on the country level.

¹ The European Single Market consists of 32 countries, EU-28 plus Iceland, Liechtenstein, Norway and Switzerland.

The chapter 18.4 is about the trade characteristics of the Hungarian agriculture, followed by the same analysis for the Polish agriculture in the following chapter 18.5. It includes trade balance broken by the world, EU and country level (Poland for Hungary and Hungary for Poland). These chapters also consist of the TOP5 agricultural export commodities on HS-2 level.

The chapter 18.6 compares the most important characteristics of the Hungarian and Polish agricultural trade. It is finished by the evolution of cross-country trade balance.

The final chapter gives an overview of the results together with conclusions.

19.2. Methodology and data sources

The fundamental tool of the research is the time series analysis. In order to catch the so-called “accession effects”, the time horizon starts from 2000 to the latest available year in the most commonly used databases, which is 2017. Importance of the agriculture is measured by the most commonly used indicators, such as share of agricultural employment or the agricultural value added (VA) as a share of gross domestic product (GDP). It is followed by the share of agricultural export within the total export for both countries. Major data sources used for the first chapter is the World Bank’s World Development Indicators (WDI) database.

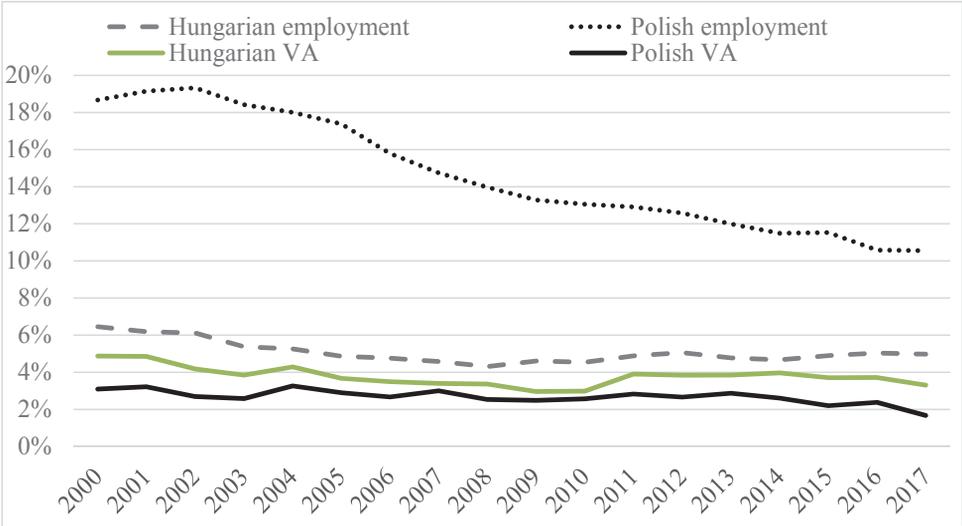
Analysis of the trade characteristic is based on the analysis of trade relations starting from the world, via the European Union to the other country’s level (Poland and Hungary in case of Hungary and Poland). The major data source for trade issues is the World Bank’s World Integrated Trade Solution (WITS) database at HS-2 level between 2000 and 2017 on agricultural products, chapters 1 to 24. The list of the product categories can be found in the Appendix.

The framework of the study is given by the present Common Agricultural Policy (CAP) and its most probable future path. In order to employ the most up-to-date version of the future CAP, the latest communications of the European Commission will be used. Basically it means two documents. The first one is “The Future of Food and Farming”, which contains mostly general issues, however, the future directions can be perceived [EC, 2017]. The second one is a regulation on the financing, management and monitoring of the Common Agricultural Policy, which was issued on 1st of June, 2018 [EC, 2018a].

19.3. Importance of the agriculture

Importance of the agriculture can be measured and demonstrated by different indices. The two most commonly used are the share of agricultural employment within the total workforce and the agricultural value added as a share of GDP. Figure 1 shows these two indicators for Hungary and Poland.

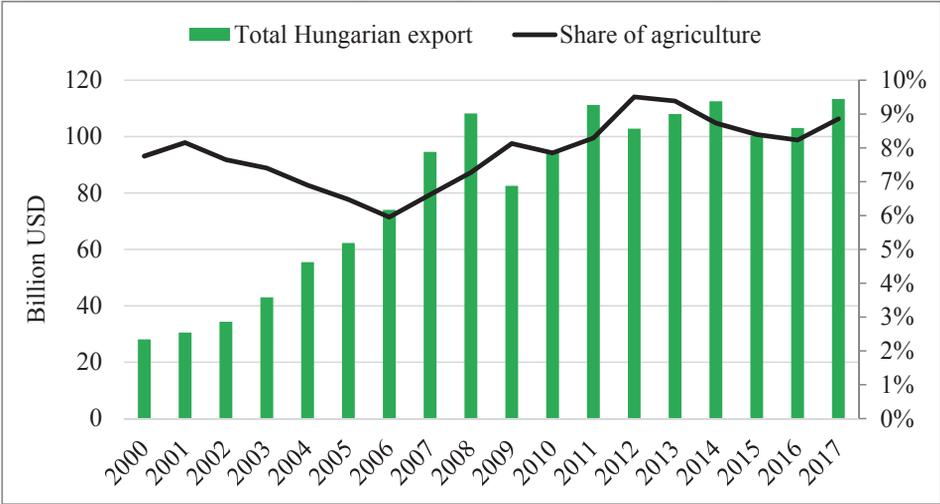
Figure 1. Evolution of the agricultural employment and value added in the analysed countries (%)



Source: author’s composition based on the World Bank’s WDI [2018] database.

As it can be seen from the figure above, the share of agricultural employment has been decreased in both counties. At the beginning of the period, it was a bit above 6% in Hungary and by a slight decrease, it has stabilized around 5% at the end of the analysed period. It has almost reached 20% in Poland, but decreased rapidly after the accession. Despite this remarkable reduction, agricultural employment is still above 10%.

Figure 2. Evolution of the Hungarian export and the share of agriculture



Source: author’s composition based on the World Bank’s WITS [2018] database.

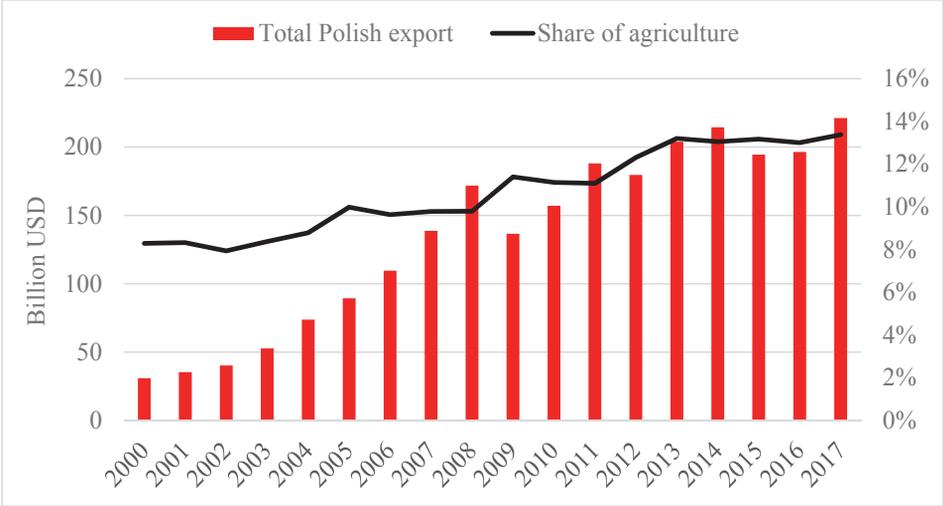
Regarding agricultural value added as the share of GDP, the sector has played and still plays a more important role in Hungary. From its initial value (4.9%), it went back to 3.3% by 2017. In Poland, it gave only 1.7% of the total value added in 2017.

From the trade aspect, the share of agricultural trade value within the total export revenues is also a general index of measuring the importance of the agriculture. It is illustrated in Figure 2.

Total export is measured in billion USD on the primary Y axe. From the initial 28.1 billion USD, it has increased fourfold to 113.4 billion USD. As it can be clearly seen in Figure 2, this growth has been accelerated after the EU accession. The global crisis resulted in a decline from 2008 to 2009, however, the export reached that level again within two years. The other drop in 2015 is caused mostly by the sanctions against the Russian Federation. Taking a look at the agricultural export revenues as a share of total export, it went down to 6% after the accession and then fluctuated between 8 and 10% (secondary Y axe).

As a matter of Poland’s export and agricultural export share, they are demonstrated in Figure 3. Export revenues show the same patterns as it was seen in the Hungarian case: rapid growth after the accession with two declines in 2009 (global crisis) and 2015 (Russian embargo).

Figure 3. Evolution of the Polish export and the share of agriculture



Source: author’s composition based on the World Bank’s WITS [2018] database.

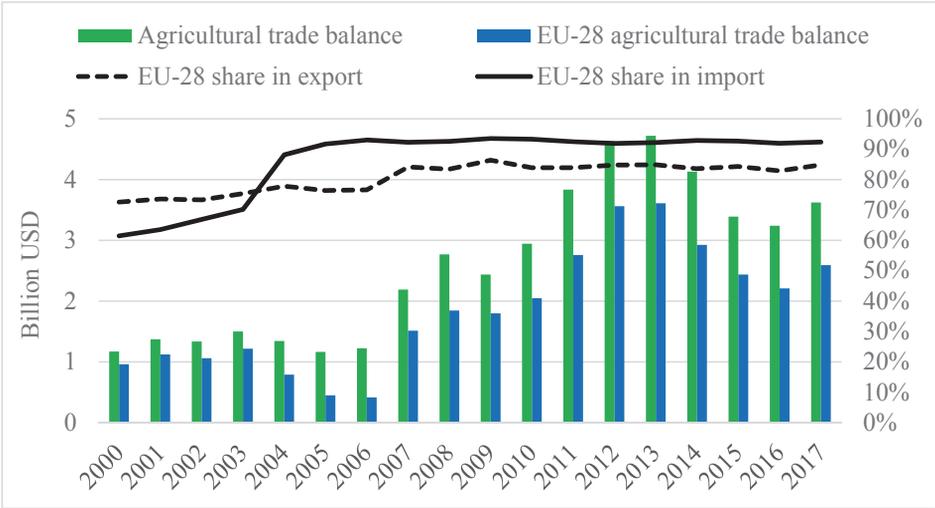
However, it should be mentioned that the growth of the Polish export during this 18-year period was almost double of the Hungarian one. Compared to the four times higher Hungarian export, the Polish one became 7.2 times higher.

The share of agriculture fluctuated between 8 and 10% in the first half of the period and started to increase rapidly during the global crisis and it was above 13% in 2017. While the growth of Hungarian agricultural export was broadly the same as the growth of total export, the Polish agricultural export growth was even higher than the total export's one (11.5 compared to 7.2 times).

19.4. Trade characteristics of the Hungarian agriculture

Historically, the European countries are the major export partners of Hungary, especially because of the production structure: it is dominated by raw materials, mostly cereals. These kinds of bulk products cannot be transported to far distances due to high transportation unit cost². Figure 4 gives an overview of the Hungarian agricultural trade markets.

Figure 4. Destinations of the Hungarian agricultural trade



Source: author's composition based on the World Bank's WITS [2018] database.

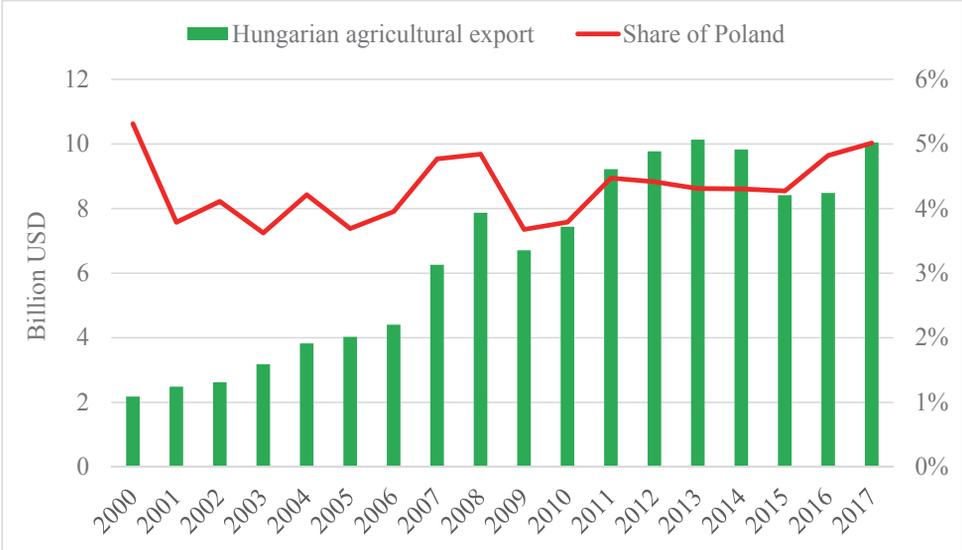
Even before the accession, Hungary has been traded with the present members of the EU. As a matter of EU-15, accession does not result in significant changes in the Hungarian export, the share of OMS was about 50% even before 2004. However, it was not the case with import. Before 2004, Hungary imported 48-52% of its agricultural needs from the EU-15, but since 2005, it fluctuated between 55-64%. It can be seen on the black line which has increased significantly from 2003 to 2004. In agricultural terms, it basically means that, due to the enlargement, OMS were able to find new markets for their agricultural commodities in Hungary.

² Hungary has no cheap, water-based routes.

Compared to the beginning of the analysed period, the Hungarian agricultural export increased appreciably, it became roughly five times higher by 2017 (Figure 2). Another important fact is that Hungary was able to maintain and increase its agricultural trade surplus in both directions (world, EU-28) by the end of the period. However, the accession had a negative effect on it which lasted for 3 years. The sign of the other two relevant factors (global crisis, Russian embargo) can also be seen on Figure 4.

If we look at country-level data, the Polish share within the Hungarian agricultural export has not changed notably between 2000 and 2017. It was mainly between 4 and 5%, despite the remarkable expansion in Hungarian agri-food export to Poland (from 120 to 500 million USD). Figure 5 summarizes it.

Figure 5. Poland, as a trading partner of Hungary



Source: author’s composition based on the World Bank’s WITS [2018] database.

The deeper analysis of the agricultural export requires product group level data. According to the methodology part, it was carried out on three different levels: world, EU-28 and finally Poland. Table 1 contains the five major agricultural export products, their export value and export share. Export share is the share of export value of the given product group divided by the total agricultural export.

The world and the EU-28 level are more or less the same, only there is one difference in the ranking of the TOP5 products: Hungary exports more meat and meat products to the world than to the EU-28. The high similarity in the export structure is not surprising, because EU-28 is the major trading partner of Hungary (Figure 4).

Table 1. The major Hungarian agricultural export products, 2017 (million USD)

Product group	Export value	Export share
World		
10	1 731	17.23%
02	1 096	10.91%
23	949	9.45%
22	721	7.18%
12	714	7.10%
Altogether	5 211	51.88%
EU-28		
10	1 519	15.12%
23	801	7.97%
02	784	7.80%
22	658	6.55%
12	646	6.44%
Altogether	4 408	43.88%
Poland		
23	59	0.59%
22	52	0.52%
20	49	0.49%
10	46	0.46%
21	43	0.42%
Altogether	249	2.48%

Source: author's composition based on the World Bank's WITS [2018] database.

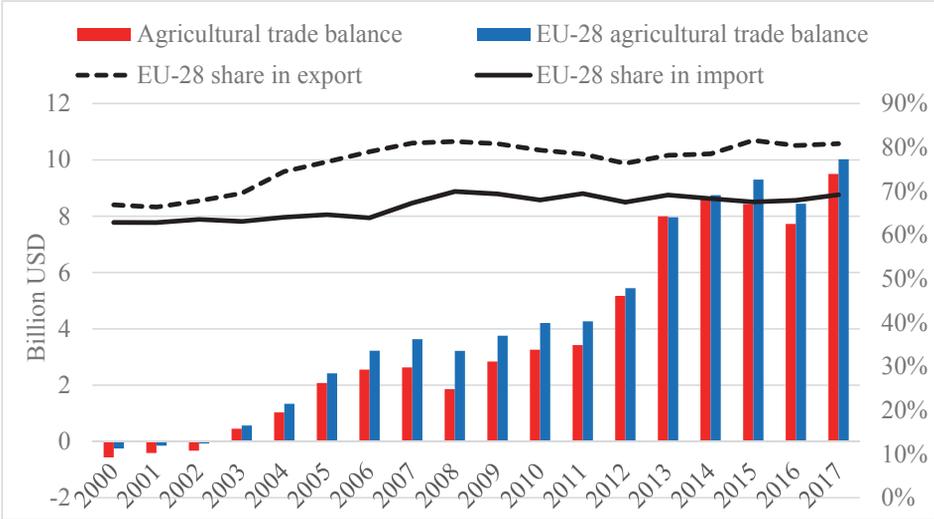
The most important export commodity is undoubtedly cereals; they give 17.2% of the total agricultural export. Cereals are followed by meat and meat offal (02), and residues and waste from food industries, prepared animal fodder (23). The last two items on the list are beverages, spirits and vinegar (22) and (mostly oil) seeds and fruit (12). The 5 major product groups out the total 24 give 51.9% of the total Hungarian agricultural export. 43.9% of export finds market in the European Union. In Polish relation, there is no big difference in volume as it is 59 million USD for the major product group (residues and waste from food industries, prepared animal fodder – 21) and 43 million USD for the last one (miscellaneous edible preparations). Apart from the last one, there is only one other item on the list which has not appeared on the world or EU-28 level, preparations of vegetables, fruit, nuts or other parts of plants (20). As it can be seen from the table above, the TOP5 product groups on country level give 2.5% of the total agricultural export which is exactly the half of the Polish share in the Hungarian export (Figure 5).

19.5. Trade characteristics of the Polish agriculture

The EU member states are the major trading partners of Poland as well. Their share fluctuated between 63-69% in case of import and it has not changed significantly during the analysed period. The accession had not any impact on it, the export share increased only from 2006 to 2007 by 4 percentage points (Figure 6). Regarding the export, it has increased remarkably right after the accession by 5 percentage points. Separating the EU-28 to OMS and NMS, it can be concluded that this increase was entirely realized on the EU-15 markets, meaning that Poland was able to successfully use the elimination of the remained trade barriers and to conquer new markets. The export share of the EU-28 went up from 74.5% (2004) to 80.8% (2017).

One should notice the remarkable change in the Polish trade balance. At the beginning of the period, it showed trade deficit which turned into a surplus in 2003. Starting from 0.5 billion USD, its size surpassed 10 billion USD in 14 years. Another important characteristic of the trade balance is the higher volume of the EU-28 than of the world. It means that Poland became even more successful on the European markets than on the third countries' markets.

Figure 6. Destinations of the Polish agricultural trade



Source: author's composition based on the World Bank's WITS [2018] database.

Despite the relative closeness, Hungary is not among the most important trading partners of Poland. While the volume of the Polish agricultural export became almost 12 times higher, the share of Hungary decreased within it. Except the notable increase after the accession, its share was exactly the same in the beginning and at the end of the analysed period (Figure 7).

Figure 7. Hungary, as a trading partner of Poland



Source: author's composition based on the World Bank's WITS [2018] database.

Table 2. The major Polish agricultural export products, 2017 (million USD)

Product group	Export value	Export share
World		
02	5 090	17.19%
24	3 340	11.28%
04	2 607	8.80%
19	2 510	8.48%
21	1 838	6.21%
Altogether	15 386	51.95%
EU-28		
02	4 187	14.14%
24	3 102	10.48%
04	2 055	6.94%
19	1 886	6.37%
21	1 487	5.02%
Altogether	12 717	42.94%
Hungary		
24	112	0.38%
02	101	0.34%
04	76	0.26%
19	68	0.23%
21	67	0.23%
Altogether	424	1.43%

Source: author's composition based on the World Bank's WITS [2018] database.

Analysing the agricultural trade on product group level, the same items can be found on every (world, EU-28 and Hungarian) level, although their ranking is different. Generally, it means that Poland does not differentiate between the markets, it exports the same products to these directions. These are meat and edible meat offal (02), tobacco and manufactured tobacco substitutes (24), dairy produce, birds' eggs, natural honey, edible products of animal origin (04), preparations of cereals, flour, starch or milk, pastrycooks' products (19) and miscellaneous edible preparations (21). Their ranking, export volume and export share can be found in Table 2.

The share of the TOP5 product groups is 52%, it goes down to 43% if only the EU-28 is considered. Their share within the total export is only 1.4% for Hungary, which is a bit more than the half of the total Hungarian export (Figure 7).

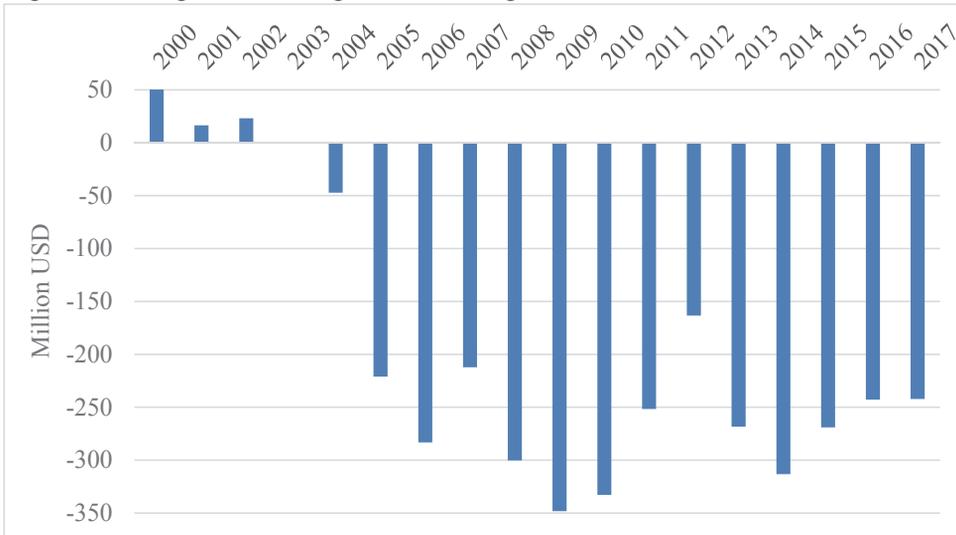
19.6. Comparison of the Hungarian-Polish agricultural trade

Agriculture, especially if its contribution to the export revenues is taken into account, plays an important role in both countries. However, there are remarkable differences between Hungary and Poland:

- Both countries have an agricultural trade surplus, however, they went on a different path. Hungary had it even before the accession, while Poland reached it in the preparation period;
- Accession (and preparation period) had significant positive effect on the Polish agricultural trade balance, while negative short-term effect on the Hungarian one;
- The EU countries are the main export partners of the analysed countries, their share in the export is around 80%. As a matter of the import, there are different values, 92% for Hungary and only 69% for Poland. That is the reason why Poland has a higher trade surplus towards the EU-28 direction than to the world;
- As a matter of the export structure, specialization can be seen, as both countries produce and export agricultural commodities according to their endowments. Hungary's top product group is cereals (good climate condition and high share of arable land), while in Poland the livestock sector is more significant as it has given more than the half of the total agricultural production over the last 3 years [EC, 2018b];
- Poland exports the same products to every (world, EU-28 and Hungarian) level, while Hungary exports two products to Poland out of its list of TOP5 agricultural product groups.

The boosted Polish export performance resulted in remarkable changes in the Hungarian-Polish direction as well. The Polish agricultural trade deficit turned into an increasing surplus within a few years. It has started even during the preparation period. It is summarized in Figure 8.

Figure 8. Change of the Hungarian-Polish agricultural trade balance



Source: author's composition based on the World Bank's WITS [2018] database.

Another remarkable fact from the figure above is that Poland was able to increase its surplus during the global crisis, it went down only in 2011 and 2012. It is a result of one component. Although the Polish export value to Hungary decreased by 12.7% from 2008 to 2009, but simultaneously, the Hungarian export declined by 35.3% in the same period.

19.7. The future of the Hungarian-Polish agricultural trade in the light of the possible budgetary changes

The Common Agricultural Policy, especially its financial supports, plays a crucial role in the European agriculture. These resources are even more important in the NMS, as they had no budgetary opportunities to subsidize their agricultural sector to that extent before the accession. Table 3 gives an overview of the present agricultural income composition of the two analysed countries.

It can be seen from the table above that crop sector is more important in Hungary, it gives 60% of the total agricultural production. This ratio is only 45% in Poland. The other, and at the same time more important fact, is the much higher share of subsidies within the factor income. The value of this ratio is 36%

for Hungary and only 21% for Poland, meaning that the Hungarian agriculture depends more on subsidies than the Polish one. As budgetary restriction will be applied, it requires more competitiveness from the Hungarian farmers than from the Polish ones. According to the latest communication of the European Commission, this restriction will be 4% in nominal prices along with the accelerated external convergence of the direct payments from 2020 (EC, 2018a). As Hungary is slightly above the line of 90%, while Poland is below that³, it means an additional disadvantage for the Hungarian farmers in terms of income generation. It can again negatively affect the competitiveness of the Hungarian agricultural trade. These expected changes require doing more with fewer financial resources which can be a great challenge for the farming community. In this country-level comparison, it definitely seems to be a greater challenge for the Hungarian farmers.

Table 3. Agricultural income composition of Hungary and Poland, 2017 (basic price, million euro)

Agricultural income items	Hungary	Poland
Agricultural output	7 509	23 898
- crop output	4 475	10 701
- animal output	2 445	12 587
- other output	589	610
Intermediate consumption	4 594	14 104
Gross Value Added	3 240	10 116
Subsidies	1 317	2 171
Factor income*	3 611	10 222

* Factor income = Gross Value Added – Consumption of fixed capital – Taxes + Subsidies.

Source: author's composition based on EC [2018b] for Poland and EC [2018c] for Hungary.

It should be aware of other challenges like climate change. The new CAP is planned to answer it by enhanced sustainability, mitigation or adaptation [EC, 2018a]. Although, global warming may result in changes in production structure even in the short run, e.g. switch to new, drought-tolerant varieties or other commodities. On the other hand, it may result in new production technologies and both of them are pointing in the same direction: further investments, especially into human resources. However, according to the dual nature of the EU's decision-making process (national and EU level), the extent of market integration is determined by the most stringent national rule, therefore it likely causes risk-averse behaviour and concerns about new technologies [Young, 2004].

³ It is 259.7 euro/ha for Hungary and 215.1 euro/ha for Poland [EC, 2011].

Specialization is another tool to deal with financial restrictions. If farmers are able to produce a few numbers of commodities in a cost-effective way, they may increase their market share. In the Hungarian-Polish destination, they could be some of the crop or fruit and vegetable products for Hungary, while livestock products for Poland according to the present production and trade structure.

19.8. Summary and conclusions

Hungary and Poland became the members of the European Union in 2004. According to the main principles of the CAP, principally market union (including four freedoms), trade has been accelerated and tightened among the member states.

Although major indicators (agricultural employment and agricultural value added as a share of GDP) show a decreasing trend, agriculture is still an important sector of both Hungarian and Polish economy. It is strengthened by the significant share of agriculture export revenues (roughly 9% in Hungary and 13% in Poland of the total export revenues). Accession resulted in remarkable export growth in both countries, it became four times higher in Hungary, but 7.2 times higher in Poland. As a matter of agricultural export, this difference is even bigger, 4.6 (Hungary) versus 11.5 (Poland).

Hungary has traditionally agricultural trade surplus and it was able to maintain it over the analysed period, Poland had an agricultural trade deficit before the accession which turned into trade surplus already in 2003. The major trade partner of these two countries was the EU member states even before the enlargement and trade connections became tighter after it. However, it is remarkable that the accession resulted in the higher increase of the EU's agricultural import share in Hungary, while in Poland the EU's agricultural export share growth was more significant. It is the reason why Poland has a higher trade surplus towards the EU-28 than to the world.

According to the trade data, Poland is a more important trading partner of Hungary than the opposite, but due to the higher total Polish agricultural export, it results in significant Polish trade surplus in the Hungarian direction. The lesson from the country level analysis is the complementary trade. Hungary's major export commodity is cereals, while in Poland's case it is meat and edible meat offal. It is in line with the production share of the crop and animal sector. Cross-country analysis confirmed specialization as Hungary export animal fodder and field commodities to Poland and imports meat and meat products.

As a matter of future CAP, at least 4% of nominal budget cut can be anticipated. Due to higher Hungarian share of subsidies to the factor income, it will cause greater problems for the Hungarian farmers compared to the Polish ones. It is even strengthened by the further and accelerated external convergence which

affects only the Hungarian amount of direct payments. It seems that Poland has used CAP resources more efficiently in the past (positive trade balance, especially on the OMS markets) and future changes will take less negative effect on its agriculture. Altogether it may result in even more agricultural trade success in the Hungarian direction. Efficiency and competitiveness become even more important with less financial resources, especially for Hungary in this comparison.

References

1. EC (2018a). Regulation of the European Parliament and of the Council on the financing, management and monitoring of the common agricultural policy and repealing Regulation (EU) No. 1306/2013. COM(2018) 393 final, Brussels, Belgium.
2. EC (2018b). Statistical factsheet – Poland. European Commission, Brussels, Belgium.
3. EC (2018c). Statistical factsheet – Hungary. European Commission, Brussels, Belgium.
4. EC (2017). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. The Future of Food and Farming. COM(2017) 713 final, Brussels, Belgium.
5. EC (2011). Average direct payments per hectare for the year 2017 – existing legislation – data to use. 12734/11, Brussels, Belgium.
6. Coughlin, C.C., Novy, D. (2012). Is the international border effect larger than the domestic border effect? Evidence from US trade. CESifo Economic Studies, 59(2), pp. 249-276.
7. De Santis, R., De Benedictis, L., Vicarelli, C. (2005). Hub-and-Spoke or else? Free trade agreements in the ‘enlarged’ European Union. The European Journal of Comparative Economics, 2(2), pp. 245-260.
8. Jayasinghe, S., Sarker, R. (2004). Effects of Regional Trade Agreements on Trade in Agrifood Products: Evidence from Gravity Modeling Using Disaggregated Data. Working Paper 04-WP 374, Center for Agricultural and Rural Development Iowa State University, Ames, USA
9. Leamer, E.E. (2007). A FlatWorld, a Level Playing Field, a SmallWorld After All, or None of the Above? A Review of Thomas L Friedman's The World is Flat. Journal of Economic Literature, 45(1), pp. 83-126.
10. Román, M.S., Bengoa-Calvo, M., Sánchez-Robles, B. (2014). FDI, trade integration and the border effect: evidence from the European Union. CESIFO Working paper No. 4867, Center for Economic Studies and Ifo Institute (CESifo), Munich, Germany.
11. Sarker, R., Jayasinghe, S. (2007). Regional trade agreements and trade in agrifood products: Evidence for the European Union from gravity modeling using disaggregated data. Agricultural Economics, 37(1), pp. 93-104.

12. Shucksmith, M., Thomson, K.J., Roberts, D. (eds.) (2005). *The CAP and the regions: the territorial impact of the common agricultural policy*. CABI Publishing, Wallingford, UK.
13. Young, A.R. (2004). The incidental fortress: The single European market and world trade. *Journal of Common Market Studies*, 42(2), pp. 393-414.
14. Eurostat (2018). Eurostat database. Available at: <http://ec.europa.eu/eurostat/data/database> (Last downloaded: 17th July, 2018).
15. World Bank's WDI (2018). World Development Indicators database. Available at: <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators> (Last downloaded: 16th July, 2018).
16. World Bank's WITS (2018). World Integrated Trade Solution database. Available at: <http://wits.worldbank.org/> (Last downloaded: 23rd July, 2018).

Appendix

PRODUCT GROUPS BY HS2 CLASSIFICATION	CODE
Live animals	1
Meat and edible meat offal	2
Fish and crustaceans, molluscs and other aquatic invertebrates	3
Dairy produce, birds' eggs, natural honey, edible products of animal origin not elsewhere specified or included	4
Products of animal origin, not elsewhere specified or included	5
Live trees and other plants, bulbs, roots and the like, cut flowers and ornamental foliage	6
Edible vegetables and certain roots and tubers	7
Edible fruit and nuts, peel of citrus or melons	8
Coffee, tea, mat and spices	9
Cereals	10
Products of the milling industry, malt, starches, inulin, wheat gluten	11
Oil seeds and oleaginous fruits, miscellaneous grains, seeds and fruit, industrial or medicinal plants, straw and fodder	12
Lac, gums, resins and other vegetable saps and extracts	13
Vegetable plaiting materials, vegetable products not elsewhere specified or included	14
Animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes	15
Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates	16
Sugar and sugar confectionery	17
Cocoa and cocoa preparations	18
Preparations of cereals, flour, starch or milk, pastrycooks' products	19
Preparations of vegetables, fruit, nuts or other parts of plants	20
Miscellaneous edible preparations	21
Beverages, spirits and vinegar	22
Residues and waste from food industries, prepared animal fodder	23
Tobacco and manufactured tobacco substitutes	24