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The Diversity of Effects of EU Membership on Agriculture in New Member States

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Foreword

In 2004 and 2007, 12 countries of Central and Eastern Europe acceded to the European Union, by which the transition process from the former socialist system to a market based agriculture formally came to an end. Despite the long-lasting preparations of countries, accession to the European Union was somehow a step into unknown territory. The expected impacts of enlargement in agriculture both in EU15 and in the candidate countries have been one of the most debated areas. **The fifth anniversary of accession is a good opportunity to assess the developments in New Member States` (NMS) agriculture and evaluate the status of the sector in the light of initial expectations.** Has agricultural productivity and competitiveness improved in the region? Could New Member States reach an acceptable trade balance? Are agricultural producers better off? What are the policy lessons? What is behind the diversity of individual country performances?

This report intends to answer such questions by **drawing a comprehensive picture on the status of agriculture sector in the 12 New Member States five years after EU accession.** In order to reach this aim, the following issues will be touched upon (as chapters of the report): resources, production performance, trade and competition, prices, farming issues, impacts upon rural areas and evaluation of pre-and post-accession policies supplemented with overall conclusions.

This report was prepared for the European Regional Office of FAO under the guidance of Ms. Maria Kadlecikova Regional Representative and Mr. David Sedik Chief of Policy Analysis Unit. As source of information, the Eurostat and FAO, UN as well as FADN databases were used. The analysis remains within the coverage of these sources and reflect their quality. The authors take full responsibility for the analysis and the conclusions presented in this report.

1. Major Resources of Agriculture

At first, an overview of available resources for agriculture of New Member States (NMS or EU10+2) is discussed in order to get an account of initial conditions as well as how the factors of production changed after EU accession of 2004.

28% of EU27's Utilized Agricultural Area (UAA) could be found in NMS in the years analyzed, which is around 52-54 million hectares. In other words, almost every third hectare of agricultural land is allocated in EU10+2 member states inside the European Union. A huge difference in land endowment is observable between member states, though: Poland, Romania and Hungary – as biggest agricultural producers - kept 67% of UAA of NMS in all years (Table 1).

The region has an internationally high share of arable area: 67% of agricultural land consists of arable land on NMS level and there are no significant differences among member states except Slovenia. Arable land of Cyprus, Czech Republic, Estonia, Hungary, Malta, Poland and Slovakia composed more than 70% of agricultural land in 2007, while the same rate for other countries were around 60-70%.

Table 1: Changes in land use in NMS in 2003-2007, 1000 ha

Country	2003		2005		2007		2007/2003 (%)
	UAA	of which arable land (%)	UAA	of which arable land (%)	UAA	of which arable land (%)	UAA
Bulgaria	5326	62	5265	60	5116	60	96
Cyprus	157	73	167	74	157	73	100
Czech Republic	4270	72	4259	72	4249	71	100
Estonia	829	66	834	71	823	73	99
Hungary	5865	78	5863	78	5807	79	99
Latvia	1582	60	1734	63	1839	65	116
Lithuania	2541	60	2837	67	2695	68	106
Malta	11	91	9	88	9	86	85
Poland	16169	78	15906	76	16177	77	100
Romania	14800	63	14180	63	13546	63	92
Slovakia	2236	63	1941	72	1930	71	86
Slovenia	510	34	510	35	500	35	98
NMS total	**54296**	**67**	**53505**	**68**	**52848**	**69**	**97**

Source: Own calculations based on FAO (2009)

Similarly to the majority of European countries, **many countries lost some of its agricultural area after EU accession.** Latvia and Lithuania, however, could increase their UAA from 2003 to 2007 while Cyprus, Czech Republic and Poland could maintain their agricultural area. No trends can be drawn in arable land changes, though: some countries increased their share of arable land in agricultural land, while others decreased. **As a conclusion, we can state that after EU accession, UAA of NMS decreased by three**

percent between 2003 and 2007, while the average share of arable land even increased by one per cent.

As to agricultural labour (as another factor of production) based on Annual Working Unit (AWU), **the work performed in agriculture was equivalent to 6 million full-time agricultural workers** in the NMS in 2007. This amount of labour exceeds the number of labour force in the EU15 countries by about a million in 2003 and 400,000 in 2007. Accordingly, **every second agricultural worker** in the EU27 comes from NMS countries. Differences, however, in agricultural labour force among member states are significant (Table 2).

Table 2: Changes in agricultural labour in NMS in 2003-2007

Country	Ag. labour (1000 AWU*)		Change in ag. labour (2007/2003, %)
	2003	2007	
Bulgaria	792	494	62
Cyprus	31	25	81
Czech Republic	170	138	81
Estonia	39	33	85
Hungary	582	459	79
Latvia	141	107	76
Lithuania	187	114	61
Malta	4	4	100
Poland	2279	2299	101
Romania	2696	2216	82
Slovakia	119	91	76
Slovenia	96	84	88
NMS total	**7135**	**6066**	**85**
EU15 total	**6166**	**5679**	**92**

*Annual Working Unit

Source: Own calculations based on Eurostat (2009)

A**gricultural employment in NMS continued to fall after EU accession (decrease by a million in 4 years!)**. Agricultural employment in Bulgaria and Lithuania decreased close to 40%. The decrease was more than 20% in Latvia, Slovakia and Hungary. **Poland is the only country where the number of agricultural employees increased somewhat after the accession**.

Capital as another factor of production is usually measured in agriculture by the stock of assets per hectare of agricultural land. **There are huge differences among countries regarding asset endowment**. Countries with high agricultural production capacities (except Poland) lag behind in asset endowment. **In 2004, Slovenia had the greatest amount of asset endowment (total assets/UAA), while the smallest was in Latvia (**Slovenia had 16 times higher asset endowment than Latvia in 2004**).**

Table 3: Total agricultural assets per UAA in NMS (euro/ha)

Country	2004	2007	2007/2004 (%)
Czech Republic	2614	3190	122
Estonia	1195	1597	134
Hungary	2525	2726	108
Latvia	989	1391*	141
Lithuania	1277	1951	153
Poland	4381	5025	115
Slovakia	2641	1982*	75
Slovenia	16022	16397*	102
NMS	**3956**	**4282**	**108**

* Values for 2006

Source: Own calculations based on FADN (2009)

In the NMS, an average farm had assets of almost 4000 euro/ha in 2004 and 4300 euro/ha in 2007, showing that **capital of an average farm has increased slightly (8%) in the region**. Significant increase can be seen in the Czech Republic and in the Baltic countries, while **asset endowment decreased in Slovakia.** We have to mention, however, that this index should be treated with care as the FADN database is sometimes providing extreme differences.

2. Agricultural production performance

One of the most important indicators of impacts of accession is the development in the agricultural production. In our analysis, production performance is measured by a number of indicators such as the role of agriculture, values and indices of agricultural output, sectoral production quantities and productivity.

2.1. Role of agriculture

The role of agriculture in national economy is best characterised by the share of agriculture in GDP, which is **shrinking all over the world. This tendency continued after accession in the NMS as well, as** Table 4 denotes it. The highest role of agriculture in GDP can be observed in Bulgaria (14%), Romania (13%) and Lithuania (8%) in 2000, whereas other NMS countries had a share of 3-5%, according to World Bank (2009). After EU accession, shares in all cases decreased, though largest falls can be seen in countries with originally high values (Bulgaria and Romania 8% and 4%, respectively).

Table 4: Share of agriculture in GDP in NMS, %

Country	2000	2005	2007
Bulgaria	14	9	6
Czech Republic	4	3	3
Estonia	5	4	3
Hungary	5	4	4
Latvia	5	4	3
Lithuania	8	6	5
Poland	5	5	4
Romania	13	10	9
Slovakia	4	4	3
Slovenia	3	3	2

Source: Own composition based on World Bank (2009)

2.2. Agricultural output

Agricultural production development is one of the key indicators of assessing the impact of accession. First of all, as can be seen on Table 5, there are very significant differences regarding the level of agricultural output per hectare among the countries. This indicator varied between 500-2300 euro/ha in the years analyzed. The highest value of agricultural output is observable in Slovenia (220% of NMS average in 2007), while lowest values show up for Latvia (51% of NMS average in 2007) in all years analyzed.

Agricultural output per hectare increased significantly after EU accession in NMS (Table 5).

Table 5: Value of agricultural output per UAA in NMS in current prices(euro/ha)

Country	2003	2004	2005	2006	2007	2007/ 2003 (%)	% of NMS in 2007
Bulgaria	529	572	572	603	594	112	59
Czech Republic	674	833	787	826	998	148	99
Estonia	460	575	599	658	764	166	75
Hungary	917	1081	1016	1004	1117	122	110
Latvia	315	360	387	408	515	163	51
Lithuania	473	512	551	552	740	157	73
Poland	717	865	939	1002	1223	170	121
Romania	727	918	849	942	975	134	96
Slovakia	667	920	818	847	997	149	98
Slovenia	1883	2223	2089	2167	2227	118	220
NMS	**701**	**848**	**838**	**889**	**1013**	**144**	**100**
EU15	**2033**	**2106**	**1976**	**1951**	**2120**	**104**	**209**

Source: Own calculations based on Eurostat and FAO (2009)

Average of NMS agricultural output was 701 euro/ha in 2003 and 1013 euro/ha in 2007, indicating a 44% increase in four years time. Hungary, Poland and Slovenia could reach an output level more than 1000 euro/ha by 2007 but all other countries raised their own output from 2003 to 2007. Table 5 indicates a significant gap between EU15 and NMS. Only

Slovenia produces on EU15 level, while except Poland and Hungary, all the other countries are producing less than half of EU15 average. It should be mentioned, however, that the gap decreased measurably between 2003 and 2007.

The agricultural performance should be measured on real values as well. Looking these figures, we can conclude that growth performance has been less encouraging in some of countries. **Baltic countries and Poland increased gross agricultural output also in real terms by 10-50%.** These are the countries where significant positive impact upon production can be seen. Hungary has maintained the 2003 level, values of Romania and Slovenia fluctuated significantly but also were close to 2003 level in 2008. Agricultural output in real value decreased in Czech Republic, Slovakia and Bulgaria (by more than 10% in the latter case).

Table 6: Index of agricultural output in real value in NMS (2000=100)

Country	2003	2004	2005	2006	2007	2008
Bulgaria	84.55	87.29	83.18	79.22	71.72	87.87
Czech Republic	83.21	98.44	86.96	86.00	98.11	93.57
Estonia	96.31	108.15	115.91	108.66	124.35	109.07
Hungary	89.45	100.31	90.81	91.26	91.32	100.05
Latvia	99.65	108.27	118.56	109.68	130.60	125.74
Lithuania	120.98	138.99	149.88	154.11	171.01	150.21
Poland	97.91	117.82	107.84	110.26	128.22	126.21
Romania	119.66	135.21	99.93	96.74	82.40	102.60
Slovakia	89.61	100.94	96.98	95.16	95.46	96.53
Slovenia	97.66	106.04	89.19	86.48	90.83	98.10

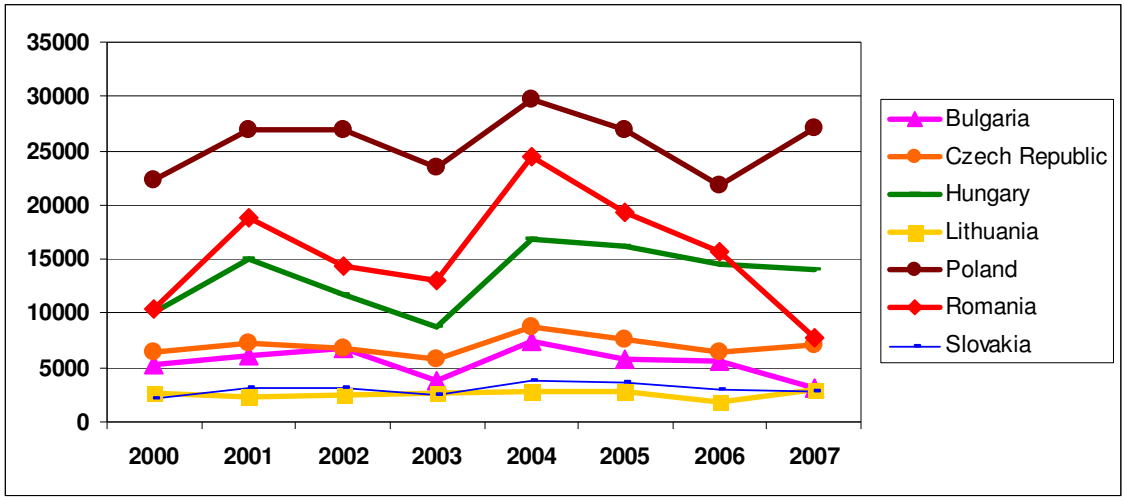
Source: Own composition based on Eurostat (2009)

2.3. Sectoral production

The three most important agricultural sectors (cereals, meat, milk) of production are analyzed in this sub-chapter so as to get a deeper understanding of production performance in NMS. The following figures will contain top 7 (out of 12) producers' production quantities for the sake of easier representation of ongoing processes.

Cereal production from 2000 to 2007 has not increased measurably, it remained more or less on a flat trend. Behind this overall tendency, however, there have been huge fluctuations of production quantities annually reflecting the weather pattern of a given year (Figure 1).

Figure 1: Top 7 producers' total cereals production in NMS (1000 tonnes)

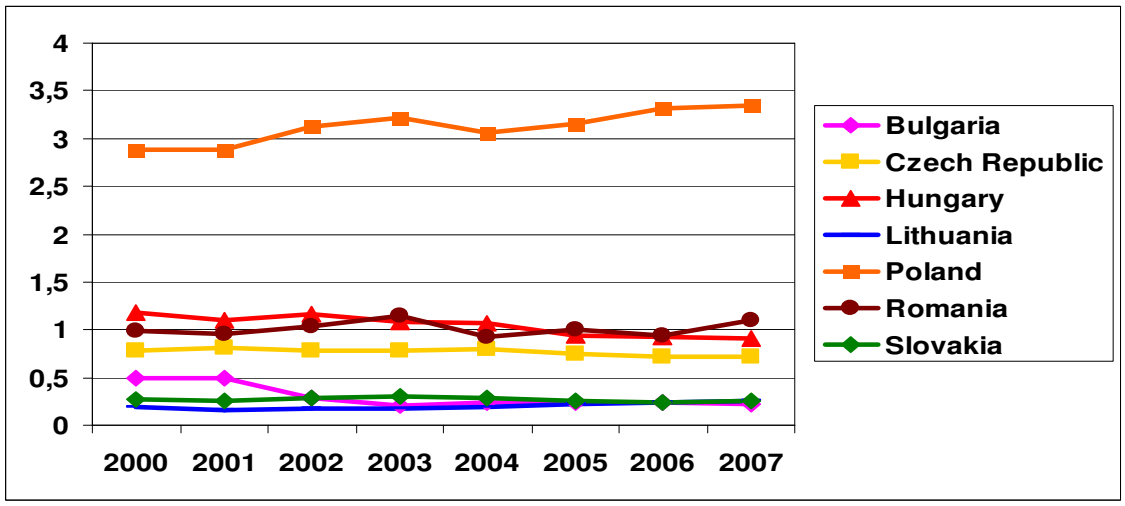


Source: Own composition based on Eurostat (2009)

The two biggest producers of cereals in the region were Poland and Romania, providing 54-60% of average yearly production of 73 million tonnes of NMS between 2000 and 2007. Czech Republic, Bulgaria, Slovakia, Lithuania and Romania contributed to the region's cereal production performance by less than 10 million tonnes a year, while Hungary produced more than 10 million tonnes of cereals in all years except for 2003. One should not forget, however, that weather conditions caused extremely high (2004) and extremely low (2007) quantities. On the whole, however, CAP created more incentives for cereal production than existed in the countries prior to accession. Therefore, **accession had a mainly favourable impact on this sector.**

Situation has been much more controversial in the meat sector (Figure 2).

Figure 2: Top 7 producers' total meat production in NMS (million tonnes)



Source: Own composition based on Eurostat (2009)

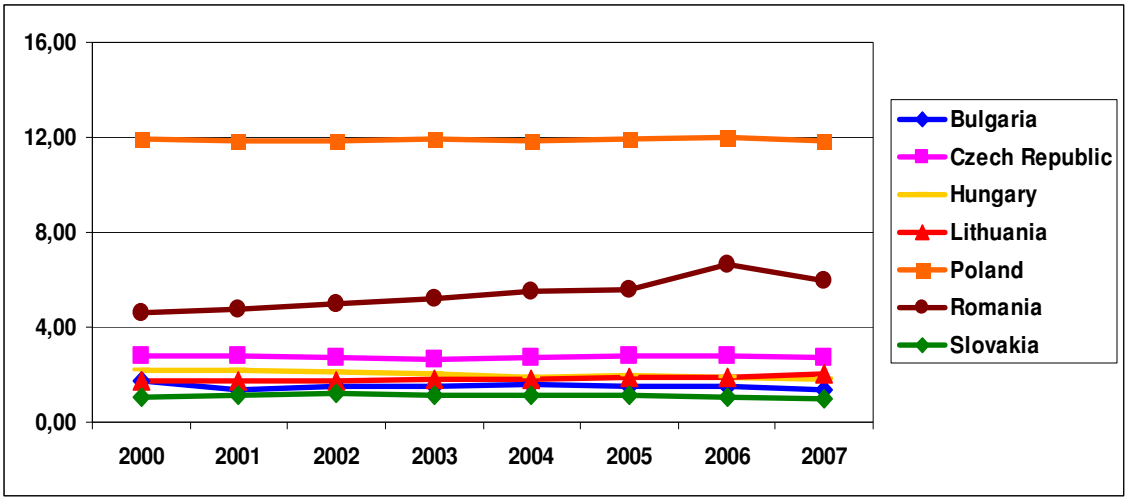
Meat production has stagnated at best in all the countries after accession. Poland far leads the region in meat production from 2000 to 2007, providing 2.8-3.4 million tonnes of meat each year. The second biggest producer was Romania, followed by Hungary and

Romania, each allowing almost a million tonnes of meat year by year. Other countries presented in Figure 2 individually gave less than half a million tonnes of meat per year.

At the same time, production trends are contrary to those noticed in case of cereals. Compared to 2000, Bulgaria lost 67% of its meat production by 2007, while same indicators for Czech Republic, Hungary and Slovakia were 16%, 23% and 27%, respectively. **Region's meat sector suffered a double pressure after accession coming from growth of cereal prices and the breakdown of borders (free trade), so it can be concluded that after 2004, the state of meat sector was worse than before.**

As to milk production, huge production differences with an overall stagnation can be observed (Figure 3).

Figure 3: Top 7 producers' total milk production in NMS (million tonnes)



Source: Own composition based on Eurostat (2009)

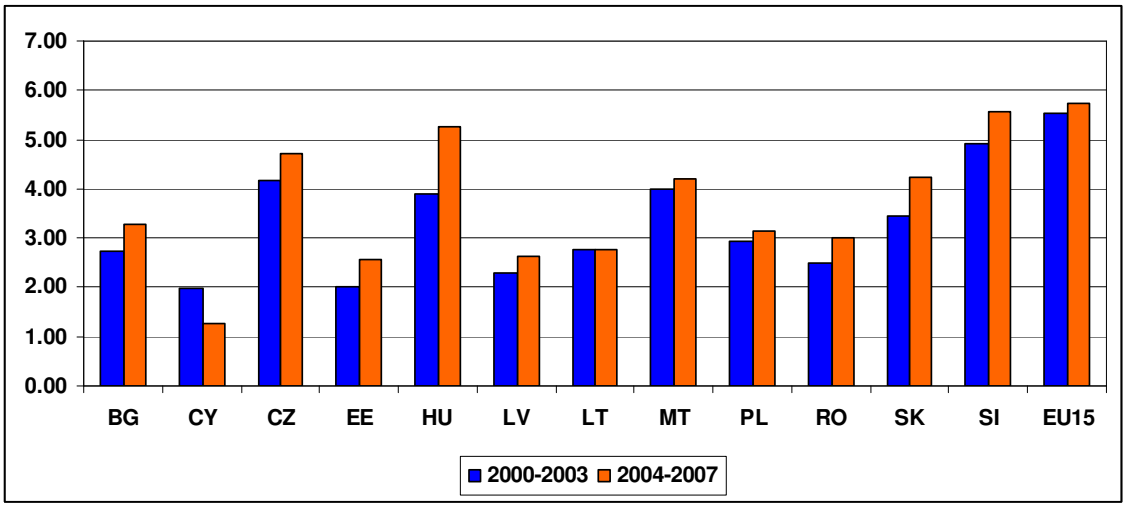
As in cases of cereals and meat, Poland was leading milk production in NMS by providing 45-47% of regional milk production yearly. The second biggest producer was Romania, allowing more than 4 million tonnes of milk per year, while other countries each produced less than 4 million tonnes of milk year by year.

No doubt that milk production was stagnating/decreasing in NMS in the period analyzed, except for Lithuania and Romania who could increase its production from 2000 to 2007 by 17% and 27%, respectively. Even the greatest producer Poland could just maintain previous production levels, while Bulgaria lost 19% of its milk production from 2000 to 2007. **Along the same lines with meat production, milk sector experienced hard times after EU accession, mainly due to prices, higher competition, which resulted in decreasing numbers of animals across the region.**

2.4. Productivity

Another measure closely linked to agricultural production performance is productivity. From sectors analyzed above, the most common productivity indicator calculated is that of yield of cereals. This report presents this indicator for 2000-2003 and 2004-2007 in order to diminish effects of weather changes year by year (Figure 4).

Figure 4: Yield of cereals in NMS (tonnes/ha)

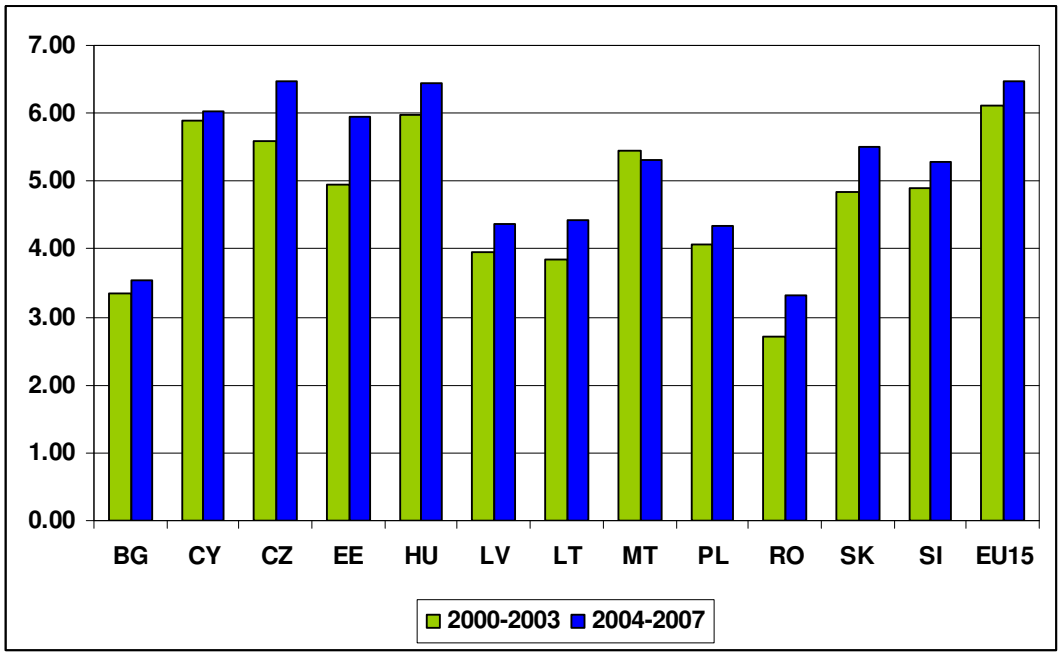


Source: Own composition based on FAO (2009)

Yield of cereals shows huge differences again among New Member States. The highest yield in the region is observable in Slovenia in 2004-2007, while the lowest in Cyprus in 2004-2007. Average yield of cereals in the region was 3.3-3.7 tonnes/ha, compared to 5.5-6.0 of EU15 average, indicating a productivity lag of NMS. **After EU accession, though, this lag is decreasing as almost all countries could increase their productivity of cereals (except for Cyprus).** Both Poland and Hungary, as leaders of cereal production in the region, raised their yields by 8% and 35% from 2000-2003 to 2004-2007, respectively.

Milk production is also worth to be analysed from productivity perspective (Figure 5).

Figure 5: Yield of cow milk in NMS (tonnes/cow)

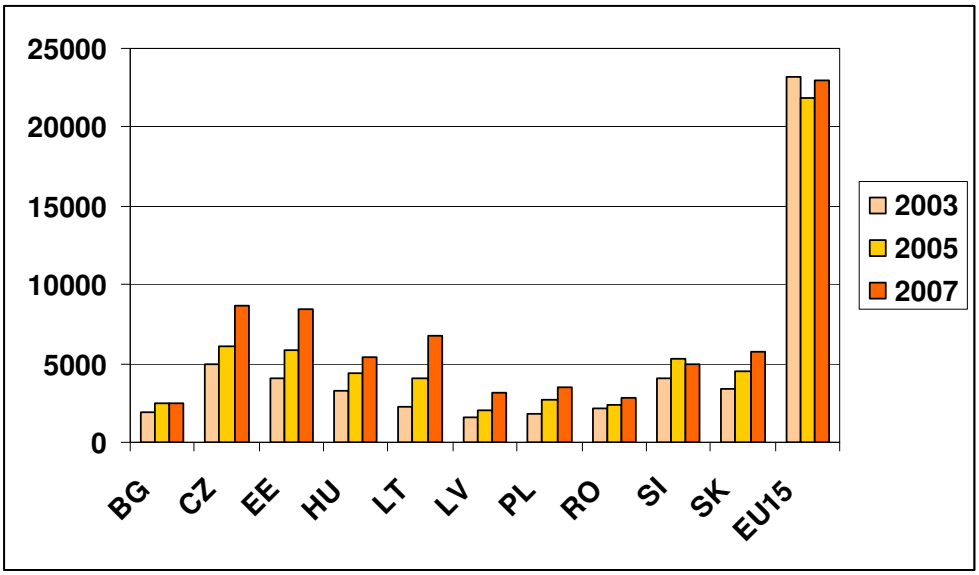


Source: Own composition based on FAO (2009)

Huge differences in cow milk productivity among NMS exist in this field as well. The highest yields before accession can be seen in Hungary, while after accession in Czech Republic. Lowest values in the whole period pertain to Romania. In 2004-2007, Cyprus, Czech Republic, Estonia and Hungary could reach the EU15 level in milk productivity, while Bulgaria and Romania is lagging behind with producing half as much milk per cow as in EU15. One should notice, however, that almost all country could increase its milk productivity after accession except for Malta and Poland, though the latter is the leading milk producer of the region as indicated before.

There is another indicator showing agricultural productivity: gross value added. This indicator per AWU is worth to be calculated to obtain a deeper insight to agricultural output issues. **As the value of agricultural output per hectare, agricultural gross value added (GVA) at current prices per AWU grew in almost all countries in NMS from 2003 to 2007, indicating that EU accession had a positive impact on gross value added per worker** (Figure 6).

Figure 6: Agricultural GVA at current prices per AWU (euro/AWU)



Source: Own composition based on Eurostat (2009)

Czech Republic and Estonia came up with the highest GVA/AWU values by 2007, while Latvia with the lowest in 2003. Majority of NMS countries experienced values between just 1000-5000 euro/AWU. There is a clear and significant lag from EU15 member states in this respect: values of EU15 were 4-4.5 times higher than that of NMS, although they were decreasing compared to 2003.

Table 7 presents the structure of agricultural production in the NMS. In 2003, livestock production provided more than half of the output in Estonia, Slovakia, Slovenia and Czech Republic. In the other countries, the crop production had the majority.

Table 7: Structure of agricultural production in NMS in 2003-2007, (%)

Country	2003			2007			2007/2003 (%)		
	Crop output*	Animal output	Other ag. output	Crop output*	Animal output	Other ag. output	Crop output*	Animal output	Other ag. output
Bulgaria	57.84	36.18	5.98	51.55	41.03	7.42	-6.30	4.86	1.44
Czech Republic	47.94	50.61	1.46	56.43	41.59	1.98	8.50	-9.02	0.52
Estonia	42.14	55.52	2.34	51.32	46.86	1.83	9.17	-8.66	-0.51
Hungary	51.57	42.80	5.63	60.01	34.43	5.55	8.44	-8.37	-0.07
Latvia	53.09	45.73	1.17	55.51	41.87	2.62	2.41	-3.86	1.45
Lithuania	56.35	42.87	0.79	57.48	41.10	1.42	1.14	-1.77	0.64
Poland	49.63	47.41	2.96	52.55	45.32	2.13	2.91	-2.09	-0.82
Romania	64.14	34.93	0.93	65.28	33.16	1.56	1.14	-1.77	0.63
Slovakia	42.20	53.53	4.27	49.45	46.24	4.30	7.25	-7.29	0.03
Slovenia	44.93	53.41	1.66	52.60	45.71	1.69	7.67	-7.70	0.03
EU15	55.00	40.83	4.17	54.57	40.97	4.46	-0.43	0.13	0.29

* Including crops, vegetables and fruits

Source: Own calculations based on Eurostat (2009)

The structure of production after the accession has moved toward a more extensive direction, namely toward crop production. In 2007, livestock production does not give more than half of the output in any of the countries. This indicates a significant shift toward a less extensive agriculture, especially in Slovakia, Slovenia and Czech Republic. The structure became more extensive even in those countries in which crop production already dominated in 2003.

As conclusion, one can state that **EU accession had modest** but not uniform **impacts on the production of major products and overall agricultural output,** enhanced by **fluctuating yields with remaining gaps. Increase of cereal output could be seen from data analyzed, while decline in livestock sector and stagnation in milk sector after 2004 is observable.** The role of agriculture further declined in the region after EU accession. The labour and land productivity has increased measurably, indicated by **the agricultural output per hectare and per worker**. Productivity gap with EU15 decreased, the **huge differences among new member states further exist.**

3. Trade and competition

The most significant impact of accession can be observed in trade as well as in competition. The enlarged huge market has created tremendous new opportunities and challenges as well.

3.1. Export value and shares of raw materials in export

Value of export increased about 20% on NMS level year by year and exceeded 30 billion USD in 2007. **All countries raised their export values by an average of 13-39% in 2000-2007 year by year,** indicating different export performances (Table 8). **Greatest agricultural exporters in value were Poland, Hungary and Czech Republic, while Malta and Cyprus exported the less in the period analyzed.**

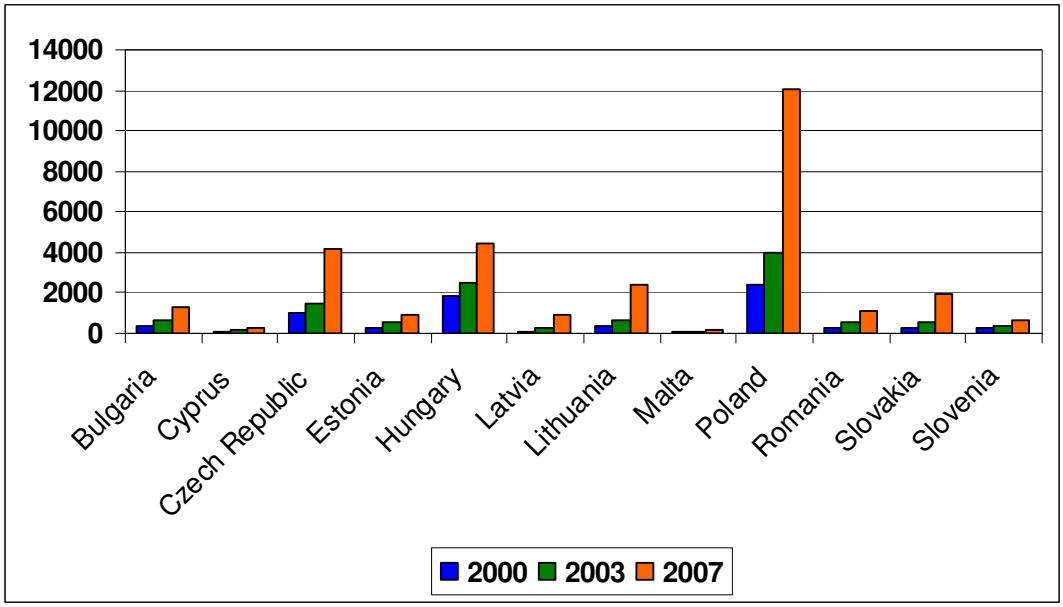
Table 8: Agri-food and beverages export of NMS in 2000-2007, million USD

Country	2000	2003	2007	2007/2000 (%)	2007/2003 (%)
Bulgaria	351.87	621.96	1310.10	372.33	210.64
Cyprus	117.28	183.79	270.78	230.88	147.33
Czech Republic	1045.86	1461.65	4140.56	395.90	283.28
Estonia	299.27	588.53	900.39	300.86	152.99
Hungary	1808.51	2549.16	4493.20	248.45	176.26
Latvia	94.41	237.15	921.67	976.24	388.64
Lithuania	357.45	670.09	2426.01	673.10	359.06
Malta	47.56	100.37	141.27	297.04	140.75
Poland	2390.28	3995.34	12066.49	504.81	302.01
Romania	289.84	511.93	1149.71	396.67	224.58
Slovakia	315.30	590.50	1989.72	631.06	336.96
Slovenia	265.61	404.65	669.65	252.12	165.49
EU10+2 total	**7383.25**	**11915.11**	**30479.55**	**412.82**	**255.81**

Source: Own composition based on UN (2009)

After EU accession, export growth in nominal values accelerated in comparison with that of 2000-2003, resulting that Bulgaria, Lithuania, Romania and Slovakia passed the billion USD export level. From 2003 to 2007, Latvia, Lithuania, Poland and Slovakia increased its agricultural export more than three times. Changes and differences among countries can be better seen in Figure 7.

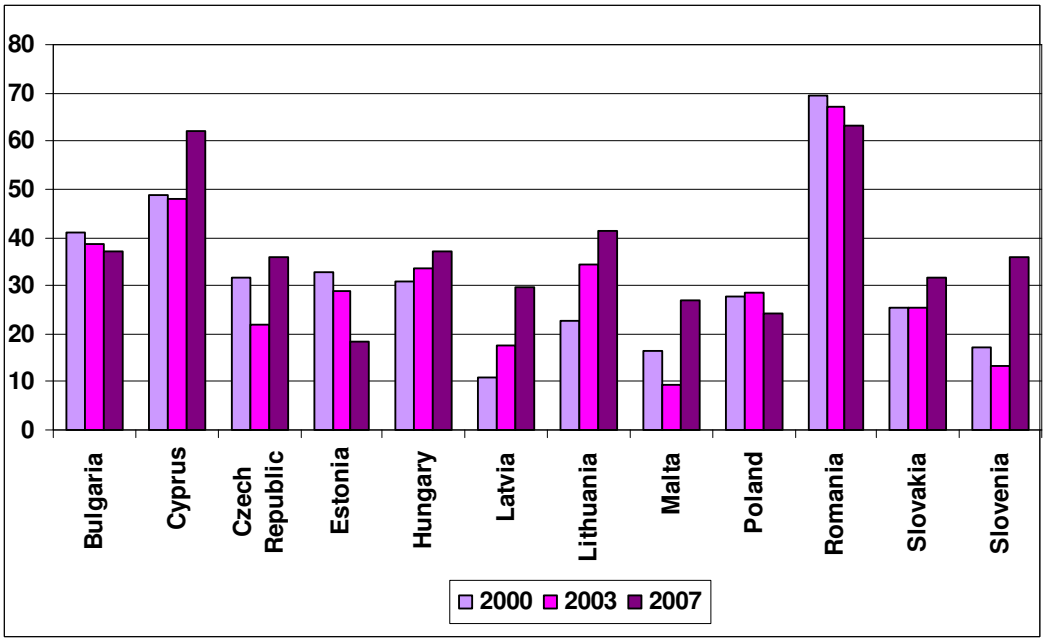
Figure 7: Agri-food and beverages export by countries, million USD



Source: Own composition based on UN (2009)

This performance, however, was based on different product structure. **Raw materials and processed products contributed to agricultural export to a different extent (Figure 8).**

Figure 8: Raw materials in total agri-food and beverages export, %



Source: Own composition based on UN (2009)

It can be well seen from Figure 8 that **share of raw materials in agricultural export is high and mainly increasing in the region** with huge differences. Romania based the majority of its agri-food and beverages export on raw materials in all years analyzed, while raw materials gave at least 50% of agricultural export of Cyprus in 2007. **All other countries**

particularly exported processed products, share of which was the highest in Latvia, Malta and Slovenia before 2004. **After EU accession, however, generality of countries changed their product structure and started to increase the share of raw materials in their agricultural export.** Only exceptions were Bulgaria, Estonia, Poland and Romania, though in the case of Estonia, decrease of raw materials in export exceeded 10% from 2003 to 2007.

3.2. Import value and shares of raw materials in import

As nominal value of agricultural export, nominal value of agricultural import also increased by approximately 20% in 2000-2007 on NMS level year by year. **Countries with highest agricultural import value were Poland, Czech Republic and Hungary, those with lowest were Malta and Cyprus, similarly to exports** (Table 9)**.**

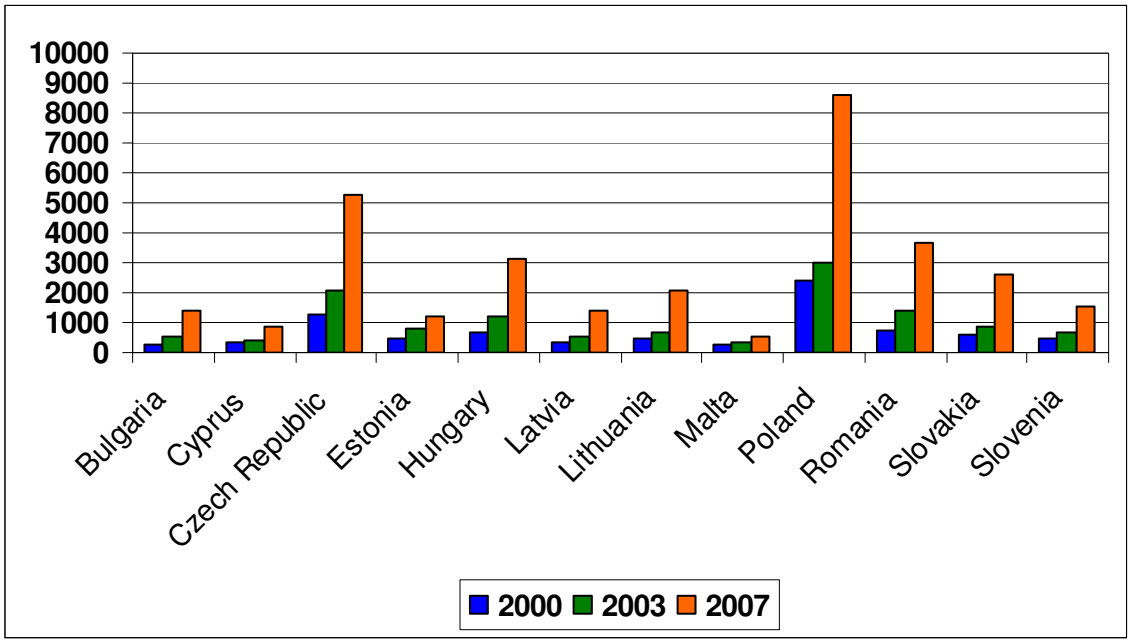
Table 9: Agri-food and beverages import of NMS in 2000-2007, million USD

Country	2000	2003	2007	2007/2000 (%)	2007/2003 (%)
Bulgaria	277.39	502.54	1427.68	514.68	284.09
Cyprus	315.36	389.62	863.79	273.91	221.70
Czech Republic	1293.15	2080.86	5265.71	407.20	253.05
Estonia	447.82	815.71	1170.06	261.28	143.44
Hungary	652.23	1188.16	3133.04	480.36	263.69
Latvia	339.59	536.96	1376.78	405.42	256.40
Lithuania	459.54	693.82	2041.38	444.22	294.22
Malta	238.40	318.08	515.24	216.12	161.98
Poland	2431.48	3007.30	8594.20	353.46	285.78
Romania	720.55	1375.78	3673.95	509.88	267.04
Slovakia	573.27	856.72	2610.93	455.45	304.76
Slovenia	484.74	674.84	1500.87	309.62	222.40
EU10+2 total	**8233.52**	**12440.40**	**32173.62**	**390.76**	**258.62**

Source: Own composition based on UN (2009)

After EU accession, import growth in nominal values accelerated in comparison with that of 2000-2003. As a result, Bulgaria, Estonia, Latvia, Lithuania, Slovakia and Slovenia passed the billion USD import level. Bulgaria, Latvia, Lithuania, Poland, Romania and Slovakia imported twice as much in 2007 as in 2004. **These data indicate that after EU accession, the growth of agricultural import also has accelerated in the region,** which can be also seen in Figure 9.

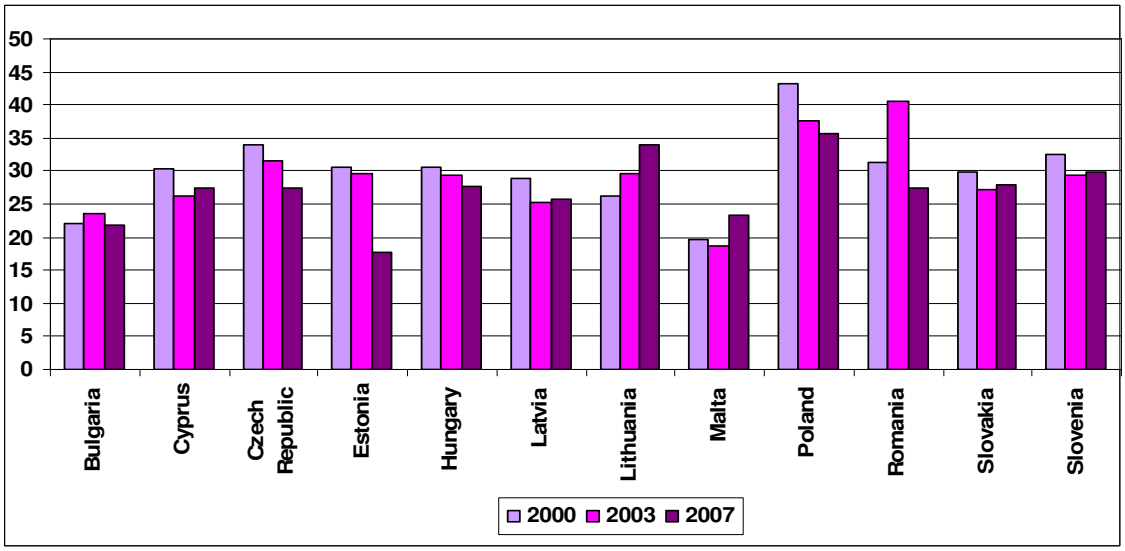
Figure 9: Agri-food and beverages import by countries, million USD



Source: Own composition based on UN (2009)

As to share of raw materials in above indicated import values, modest differences are observable (Figure 10). The highest shares of raw materials in agricultural import can be seen in Poland in all years analyzed, while Estonia had the lowest share in 2007. All other countries' share were between 19-41%, indicating that **majority of NMS agricultural imports consist of processed food and after EU accession, share of processed products in import increased in greatest agricultural producer countries (Bulgaria, Czech Republic, Estonia, Hungary, Poland, Romania).**

Figure 10: Raw materials in total agri-food and beverages import, %

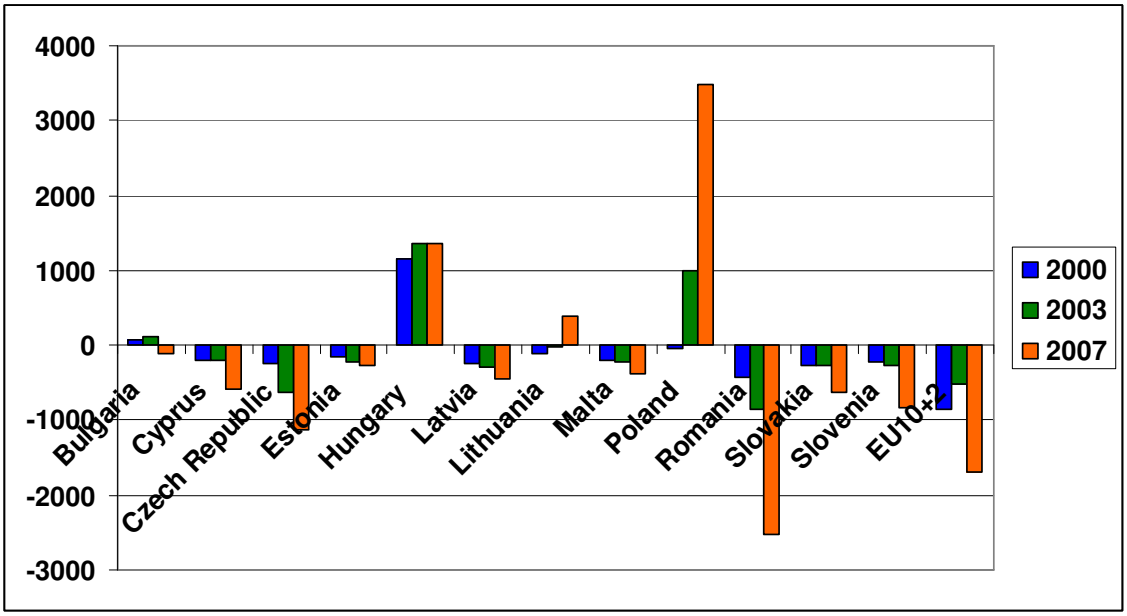


Source: Own composition based on UN (2009)

3.3. Trade balance

Based on analyzes above, it is worth calculating agricultural trade balance for NMS. It is observable from such a calculation that only **Hungary had a positive agricultural trade balance in all years analyzed, whereas Poland has shown a remarkable increase of positive balance after the accession.** One might conclude that Poland utilised most effectively the opportunities offered by the enlarged markets in food and agricultural products.

Figure 11: Agri-food and beverages trade balance, million USD



Source: Own composition based on UN (2009)

Except Hungary, all the NMS **had a negative agricultural trade balance before accession. Except Poland, Hungary and partly Lithuania, this deficit has become even higher after 2004.** Cyprus, Romania and Slovenia almost tripled its negative balance of 2003 to 2007, which for example means an almost 2.5 billion USD deficit for Romania. It has to be concluded that **the EU accession resulted an increased trade deficit in agri-food and beverages products on NMS level.**

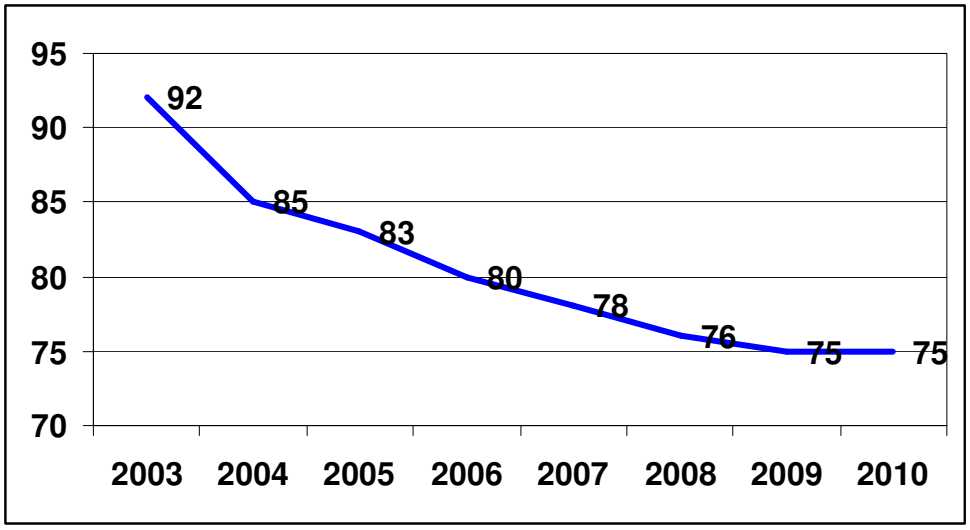
As summary, we can have the following conclusions:

1. Nominal values of both exports and imports increased with an accelerated manner after EU accession
2. Strong differences exist among member states regarding agricultural trade performance
3. There is a high and increasing share of raw materials in agri-food and beverages export
4. Share of processed products in import increased in all countries
5. Hungary, Lithuania and Poland had positive trade balance in 2007, of which Poland significantly increased its net exports after 2004
6. Vast majority of the NMS has an increasing agricultural trade deficit

3.4. Retail trade

The restructuring of agricultural markets has started in the mid '90s in the regions. The emergence of product based value chains and the fast increasing role hyper- and supermarkets are the most important outcomes of this process (Reardon-Swinnen, 2004). The EU accession has accelerated this process and created very strong competition on the domestic retail markets. The share of products with foreign origin increased significantly (see Figure 12), domestically produced products have to compete with the free flow of foreign produce.

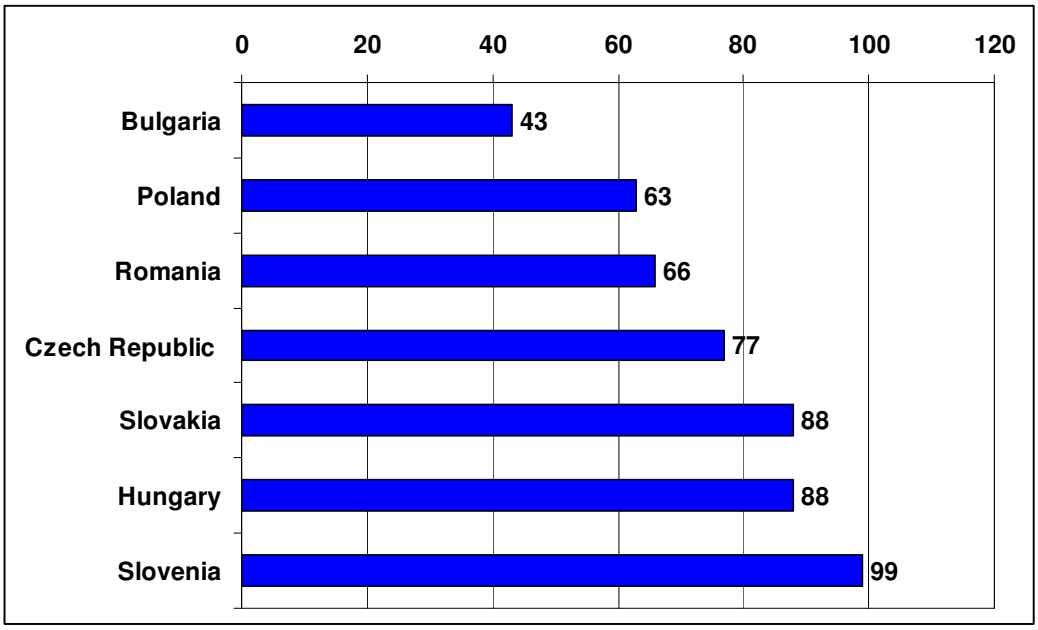
Figure 12: Share of domestically produced products in Hungarian retail (%)



Source: Fórián, Z. (2007)

There has been a strong concentration of retail trade with a major role of multinational food chains in national markets (Swinnen-Rozelle, 2006). Figure 13 indicates that the top 10 chains' in retail trade gained decisive role in all the countries. These changes require adjustment both from processors and primary producers. The concentrated and Europe-wide procurement systems of the major chains create high requirements for suppliers and put strong price pressure as well (Jansik, 2004). The heavy competition among retailers results in low priced products often with dubious quality and the shelves. At the same time, suppliers often have to cope with occasionally not fully fair business practices from the chains' side. **Farmers' adjustment to the enlarged integrated food markets is one of the most pressing demand of the post accession situation (Csáki et al., 2008).** This adjustment is not taking place without difficulties and requires public involvements.

Figure 13: Share of top 10 food chains on the main shopping place in April 2009 (%)



Source: GfK + INCOMA Research, 2009

4. Price developments

The development of prices is a rather important indicator of the impacts of EU accession. Prior to accession, there were many projections, forecasting a significant price increase in the new member countries. The analysis of pre- and post-accession prices in the individual countries helps also to better understand what price tendencies are observable after EU accession.

4.1. Cereals prices

Cereal market prices in NMS were different and fluctuating in 2000-2007 (Table 10). Prior to accession, cereal prices were significantly below the EU level with the exception of Slovenia. After accession, a quick adjustment took place and cereals prices came closer to the EU15 level with the exception of Romania and Lithuania. In the other countries, prices were below by 10-20% of the EU15 price level.

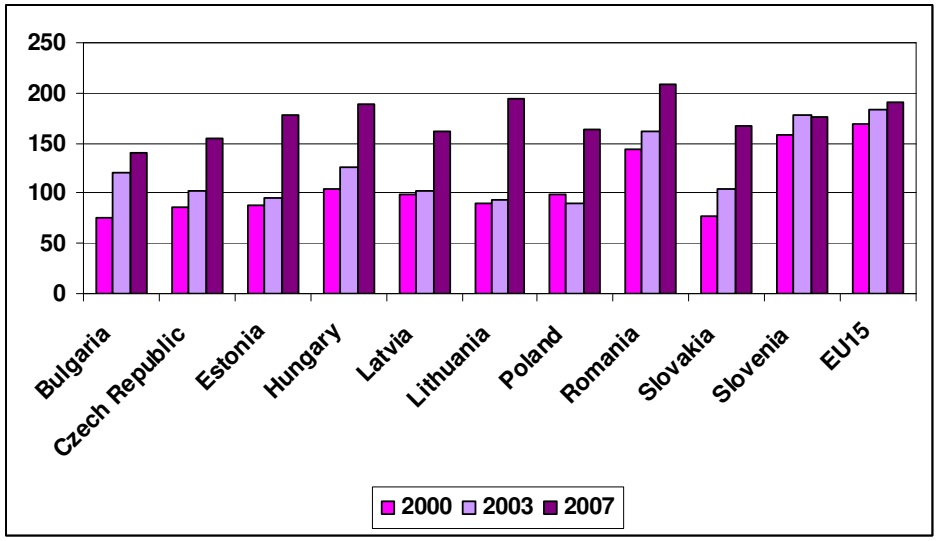
Table 10: Current prices of cereals in 2000-2007, euro/tonnes

Country	2000	2003	2007	2007/2000	2007/2003
Bulgaria	75	121	139	186	115
Czech Republic	85	103	154	180	150
Estonia	88	95	177	202	186
Hungary	104	125	188	180	150
Latvia	99	102	162	163	158
Lithuania	90	94	194	216	206
Poland	99	91	164	165	180
Romania	144	162	208	144	129
Slovakia	77	105	168	218	160
Slovenia	158	178	175	111	99
EU15	169	183	191	113	104

Source: Own composition based on Eurostat (2009)

There is a clear tendency of cereal price increase worldwide in the period analysed, values for NMS increased by 50-100% from 2000 to 2007 (Table 10). From 2003 to 2007, prices in **Lithuania doubled, while smallest increase took place in Bulgaria (15%).** It has to be added that 2008 and 2009 prices are below the peak level of 2007.

Figure 14: Current prices of cereals in selected NMS in 2000-2007, euro/tonnes



Source: Own composition based on Eurostat (2009)

Differences in cereals prices among NMS are also demonstrated in Figure 14 in order to picture changes in prices in the period analyzed. One should first notice the tendency of growth in cereals prices in the region with huge fluctuations caused by weather and market conditions. **Especially in 2004/2005, the intervention system of the CAP contributed to the adjustment of domestic prices since the intervention price was higher in most cases than the actual market prices would be.**

4.2. Meat prices

Meat prices except Bulgaria were significantly below EU15 prices prior to accession. Current prices of meat show extreme differences in NMS. **The accession brought a significant price growth in all the countries,** except Bulgaria (Table 11).

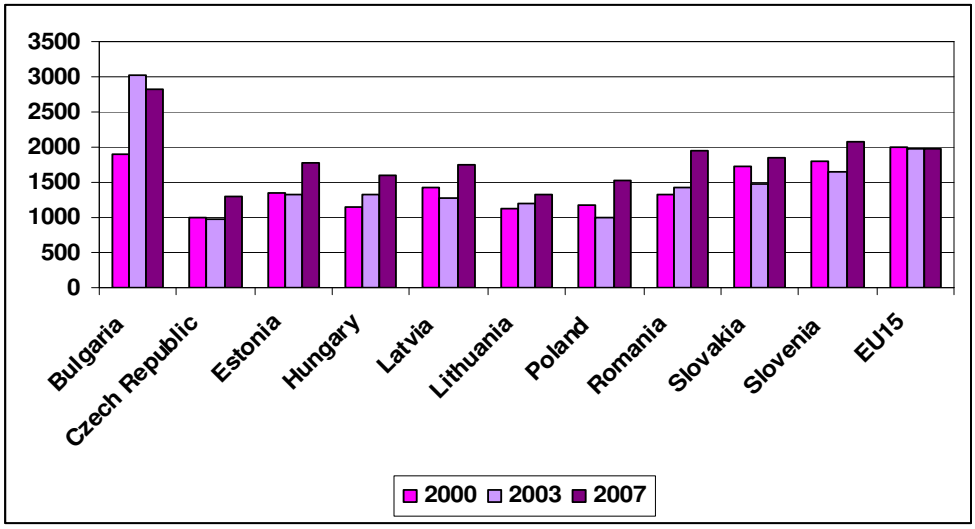
Table 11: Current prices of meat in 2000-2007, euro/tonnes

Country	2000	2003	2007	2007/2000	2007/2003
Bulgaria	1897	3037	2814	148	93
Czech Republic	1012	986	1289	127	131
Estonia	1351	1320	1766	131	134
Hungary	1156	1336	1606	139	120
Latvia	1413	1284	1745	124	136
Lithuania	1114	1204	1327	119	110
Poland	1179	1003	1519	129	151
Romania	1322	1425	1943	147	136
Slovakia	1723	1482	1841	107	124
Slovenia	1789	1655	2078	116	126
EU15	2004	1966	1965	98	100

Source: Own composition based on Eurostat (2009)

Prices came closer but mainly remained below of EU15 level. Current price increase in meat, however, has been significantly less than that of cereals as mentioned before. **Figure 15 indicate that meat prices from 2003 to 2007 increased on NMS level by 20-35%.** The largest percentage increase took place in Poland, though prices remained below EU15 level.

Figure 15: Current prices of meat in selected NMS in 2000-2007, euro/tonnes



Source: Own composition based on Eurostat (2009)

4.3. Milk prices

Milk prices show significant diversity in the individual countries prior to accession. In some countries such as Hungary, Czech Republic, Romania and Slovakia, domestic prices were close to EU15 level. On the other side, in Poland, Latvia and Lithuania, the prices were around 50% or less than the EU15 level. The accession brought an adjustment of the prices in this sector as well. Obviously, the huge adjustment took place in the countries with the lowest pre-accession prices, namely in Poland, Latvia and Lithuania. The significant increase of milk prices in these countries is behind the measureable production response.

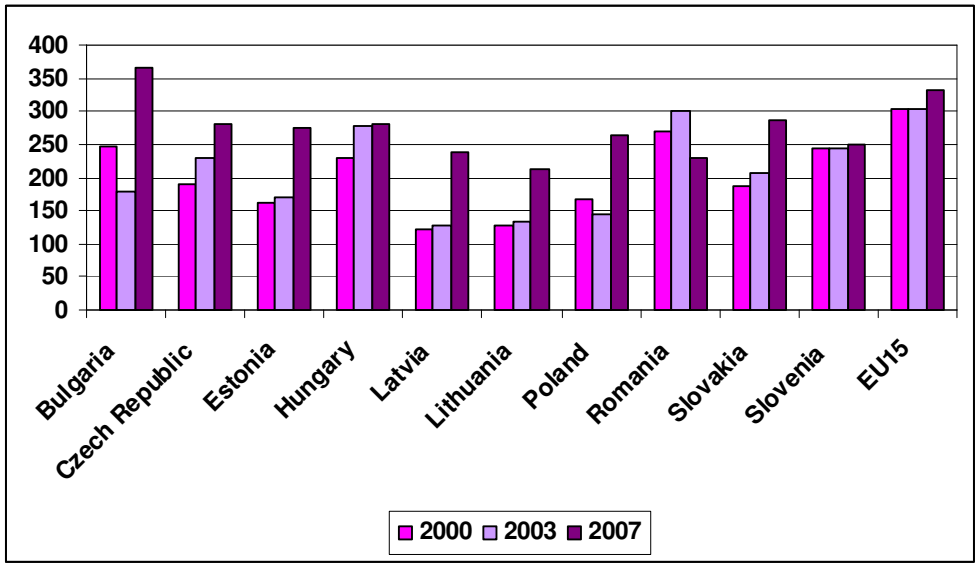
Table 12: Current prices of milk in 2000-2007, euro/tonnes

Country	2000	2003	2007	2007/2000	2007/2003
Bulgaria	245	179	367	150	205
Czech Republic	191	229	281	147	123
Estonia	160	170	275	172	162
Hungary	230	278	281	122	101
Latvia	123	127	238	193	187
Lithuania	127	133	213	168	160
Poland	167	144	264	158	183
Romania	270	301	229	85	76
Slovakia	188	208	287	153	138
Slovenia	243	244	250	103	103
EU15	303	303	333	110	110

Source: Own composition based on Eurostat (2009)

Figure 16 puts a graphical representation of above mentioned tendencies **indicating different effects of EU accession (NMS level prices increased by 60-80% in some countries).** The differences in domestic prices and the different degree of impact are due to the differences in national policies. The high pre-accession support in Hungary, Romania and Slovenia kept prices close to EU15 level and led to minimal price adjustment for producers.

Figure 16: Current prices of milk in selected NMS in 2000-2007, euro/tonnes



Source: Own composition based on Eurostat (2009)

5. Farming issues

The review of farming structure is essential to understand the effects of EU accession both on sector and farm level (Lerman, 2007). The actual status of farming has been a crucial determinant of the outcome of the accession.

5.1. Farm structure

In 2003 there were 8.4 million farms in NMS, while in 2007 about 7.8 million, which indicates that about 600,000 farms (7%) disappeared after accession and this process probably will continue (Table 13). **One of the most striking features of the farming structure is the large number of very small farms on European standard (Lerman, 2007).** 4.5 million farms are using less than 2 hectares and 7.2 million (85% of the total) is smaller than 10 hectares. Almost 80% of the small farms in the region are operating in Poland and Romania.

Table 13: Number of agricultural holdings by UAA size classes in NMS in 2007 (absolute numbers, ha)

Country	<2	2≤X<10	10≤X<50	50≤X<100	100<	Total in 2007	Total in 2003	2007/2003 (%)
Bulgaria	417380	49300	9050	1970	4220	481920	654810	74
Czech Republic	12550	10880	8490	2310	4260	38490	43920	88
Estonia	2910	10560	7200	1040	1550	23260	36790	63
Hungary	452340	71870	29590	5660	6490	565950	712210	79
Latvia	18510	52350	31540	2880	2210	107490	126440	85
Lithuania	31740	153920	37650	3910	2980	230200	272060	85
Poland	1046210	969630	340640	15790	7850	2380120	2144670	111
Romania	2485560	1265590	86240	4740	9660	3851790	4299360	90
Slovakia	49690	10920	3010	740	2160	66520	69760	95
Slovenia	18590	44990	11330	290	100	75300	77130	98
NMS total	4535480	2640010	564740	39330	41480	7821040	8437150	93

Source: Own composition based on Eurostat (2009)

Reform processes of the 1990's have created a **mixed farming structure** in the region containing combinations of large scale and small scale farms with the exception of Poland and Slovenia (Csáki-Forgács, 2007). In these two countries, **small scale farms dominated agriculture during the socialist period and they have not been changed much after 1990.** There are huge differences among countries regarding land use structure of large and small farms (Table 14). In 2003, **majority of land was cultivated by small farms in five countries out of ten** (Latvia, Lithuania, Poland, Romania, Slovenia). On the other hand, large farms dominated land use in Bulgaria (76%), Czech Republic (89%), Estonia (57%), Hungary (60%) and Slovakia (93%). Values above 90% show an extreme dominance of large farms.

Table 14: Farm structure based on land use (UAA) in NMS

Country	Share in land area, %			
	2003		2007	
	≤ 100 ha	> 100 ha	≤ 100 ha	> 100 ha
Bulgaria	0.24	0.76	0.23	0.77
Czech Republic	0.11	0.89	0.12	0.88
Estonia	0.43	0.57	0.31	0.69
Hungary	0.40	0.60	0.35	0.65
Latvia	0.70	0.30	0.62	0.38
Lithuania	0.74	0.26	0.64	0.36
Poland	0.81	0.19	0.83	0.17
Romania	0.53	0.47	0.62	0.38
Slovakia	0.07	0.93	0.10	0.90
Slovenia	0.94	0.06	0.93	0.07

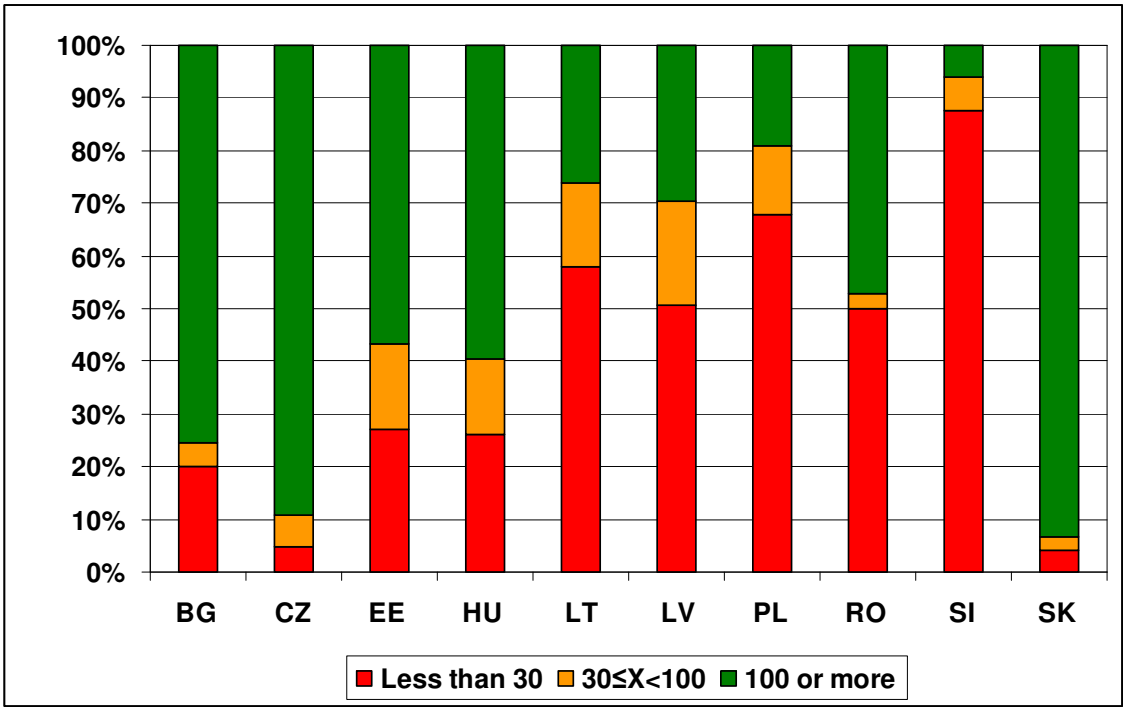
Source: Own composition based on Eurostat (2009)

Though dual farm structure remained after EU accession, the dualism in most cases became even stronger. Share of large farms in land use increased in Bulgaria, Estonia, Hungary, Latvia, Lithuania and Slovenia. This growth was around 10% in the Baltic

countries, while in Romania, a 9% drop can be seen. Moreover, one should take into consideration that only **Estonia represent a case in the Baltic region where instead of small farms, large farms were dominant in the period.**

Differences remain if we split up the category of small farms into two parts: those cultivating land below 30 hectares and those working between 30 and 100 hectares (Figure 17 and 18).

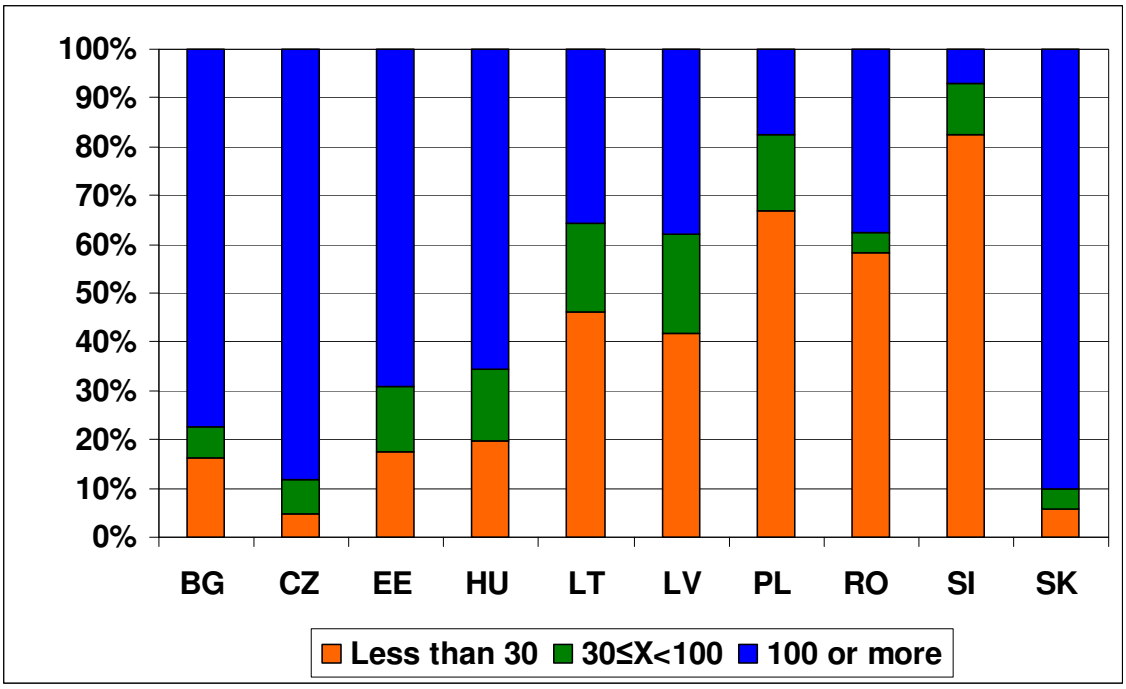
Figure 17: Utilized Agricultural Area by sizes of farms in NMS in 2003, %



Source: Own composition based on Eurostat (2009)

Data of Table 14 give the basis of Figure 17 and Figure 18 with the difference of division of small farms into two categories. It can be seen in Figure 17 that **medium scale farms cultivated 3 to 20% of land in NMS in 2003. The smallest share pertains to Slovakia, while the biggest to Latvia.** Average share of medium scale farms is 11% on NMS level; it is only Czech Republic and Slovakia where small and medium size farms have almost the same share in UAA.

Figure 18: Utilized Agricultural Area by sizes of farms in NMS in 2007, %

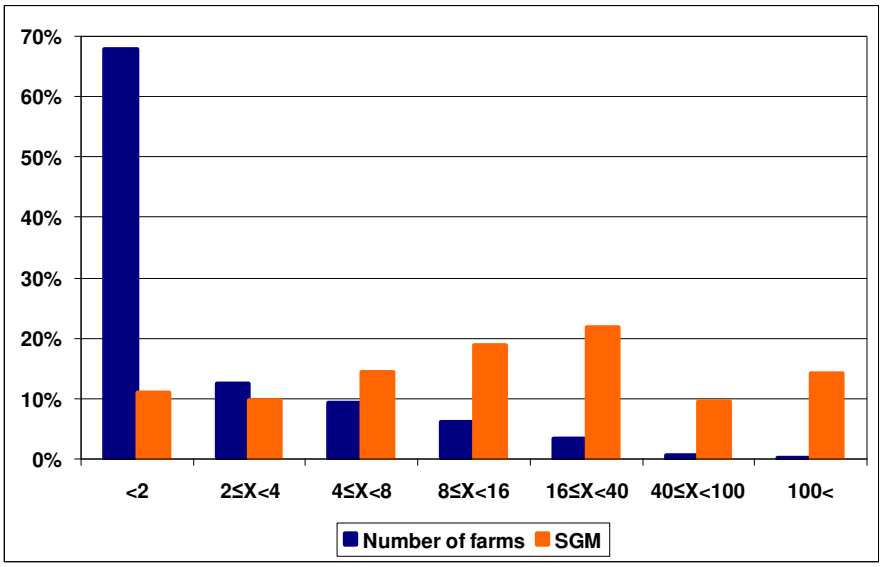


Source: Own composition based on Eurostat (2009)

Comparing Figure 17 and Figure 18 make it visible how dual farm structure after EU accession became even stronger. Share of small farms in land use increased considerably in Romania, while that of medium farms increased in all NMS countries but Estonia and Latvia. As to large farms, biggest increases are observable in the Baltic countries, while biggest decrease in Romania.

Analysing number of farms and Standard Gross Margin (SGM) together also underpins dual farm structure existing in the region.

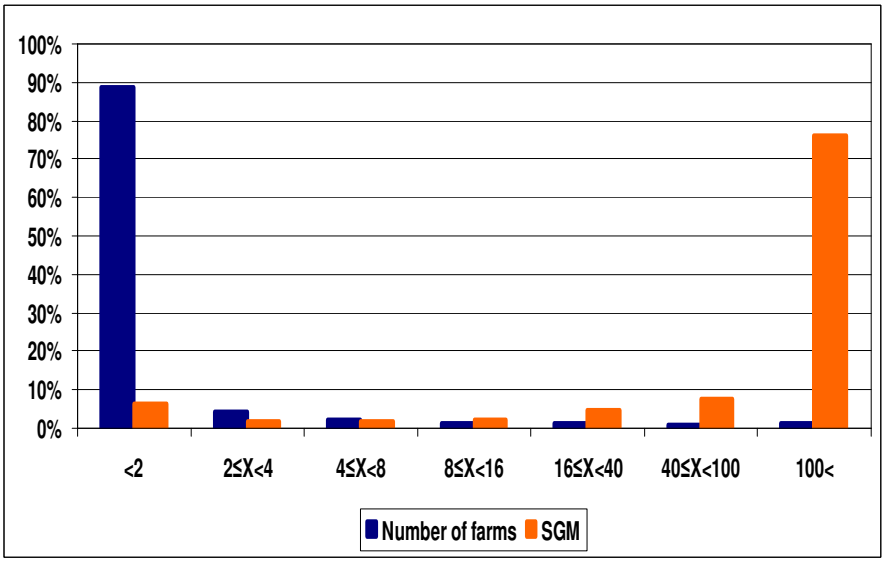
Figure 19: Pattern of farm distribution in Poland by ESU, 2007



Source: Own composition based on Eurostat (2009)

As Figure 19 puts it for Poland and Figure 20 for Slovakia, number of farms is sharply decreasing in line with the increase of their sizes (ESU). Meanwhile, originally low SGM values are increasing by farm sizes, indicating improving performance. One should notice that 68% of farms in Poland (89% in Slovakia) were considered to be very small (<2 ha) in 2007, while they were providing least then 10% of the total national SGM in both cases. On the other hand, however, 0.17% of farms were very big (>100 ha) in Poland (1.42% in Slovakia), whereas they were giving 14% (76% in Slovakia) of total national SGM in 2007.

Figure 20: Pattern of farm distribution in Slovakia by ESU, 2007



Source: Own composition based on Eurostat (2009)

5.2. Farm sizes

Average sizes of large and small scale farms also show significant differences (Table 15). In 2003, **average farm size of small farms was below 10 hectares in NMS, whilst that of large farms exceeded 290 hectares in all cases.** Biggest differences in sizes can be observed in Bulgaria and Slovakia in 2003, where a large farm was 520 times bigger regarding average UAA than a small one. **Large farms had the greatest average area (1078 ha) to cultivate in Slovakia just before EU accession, while Latvia had the lowest (291 ha).** As to small farms, Bulgarian and Romanian farmers had the smallest farm sizes in 2003, while small farmers of Czech Republic and Estonia cultivated land on the biggest average sizes in NMS.

Table 15: Farm structure based on average farm size (UAA) in NMS, ha

Country	2003		2007	
	≤ 100 ha	> 100 ha	≤ 100 ha	> 100 ha
Bulgaria	1.09	565.93	1.45	558.82
Czech Republic	9.87	778.61	12.25	727.42
Estonia	9.64	414.26	12.89	404.51
Hungary	2.48	474.05	2.61	426.64
Latvia	8.38	290.98	10.45	304.64
Lithuania	6.81	315.57	7.49	318.05
Poland	5.46	420.25	5.38	344.94
Romania	1.72	637.42	2.23	535.44
Slovakia	2.10	1078.25	2.94	809.11
Slovenia	5.93	423.57	6.05	340.20

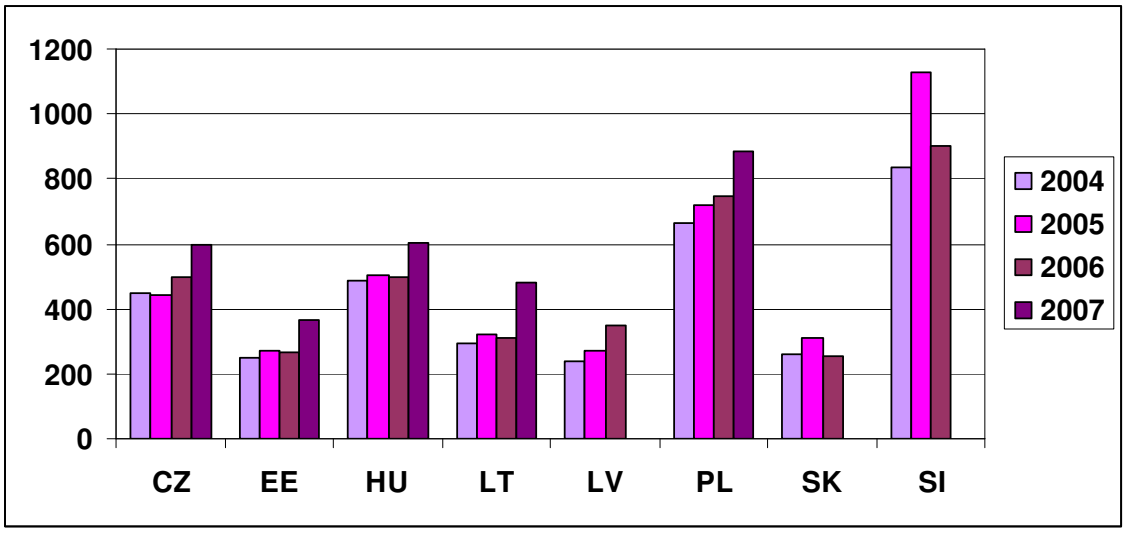
Source: Own composition based on Eurostat (2009)

After EU accession, average size of small farms increased in NMS but Poland, whereas that of large farms decreased in all countries but Latvia and Lithuania, which follows that gap between sizes of small and large farms decreased. In 2007, average size of small farms exceeded 10 hectares in Czech Republic, Estonia and Latvia, while that of large farms varied around 300-800 hectares. **This means that differences in NMS regarding farm sizes are still high but decreasing**.

5.3. Farm income

It is essential to look at farm incomes, specifically the income of national agricultural producers after accession. The accession resulted in a significant increase of farmers' income (Figure 21). This increase is mainly due to the introduction of CAP and related subsidies as well as the result of price adjustment to European levels.

Figure 21: Gross farm income in NMS in 2004-2006, euro/ha



Source: Own composition based on FADN (2009)

Gross farm income of agricultural producers in most cases increased year by year. **Gross farm income was fluctuating in Slovakia and Slovenia after EU accession, while increased in vast majority of cases in other countries analyzed.** In 2007, income of each country was increased compared to previous years. Highest amount of income is observable in Slovenia (where the EU15 CAP was introduced), while lowest in Slovakia taking four years' average into consideration (Figure 21). Only Slovenia was able to reach the level of 1000 euro/ha, whereas Slovakia was below 310 euro/ha in all years.

6. Impacts upon Rural Areas

Besides farmers, EU accession seriously touched rural areas upon. 34% of NMS population lives in rural areas as well as 43% of NMS territory pertains to rural domain. Therefore analysing effects of accession on rural areas are of outmost importance. This chapter will see through rural issues in detail by analysing demographic and economic factors. The chapter uses OECD's well-known definition (Paris, 1994, 2005) in order to differentiate rural areas (Predominantly Rural Region (PR), Intermediate Region (IR), Predominantly Urban Region (PU)). Data comes from Eurostat (2009) database in NUTS2 and NUTS3 level.

6.1. Demographical impacts

Demographical impacts of EU accession are hard to be measured as these issues are usually defined for the long run. There are some signs, though, which are worth to be demonstrated. One of these signs is the rate of elder people in population. In line with world tendencies, rural areas of NMS also experience ageing population, which is underpinned by Table 16.

Table 16: Rate of 65+ years in some NMS country's total population (based on NUTS2), percentage

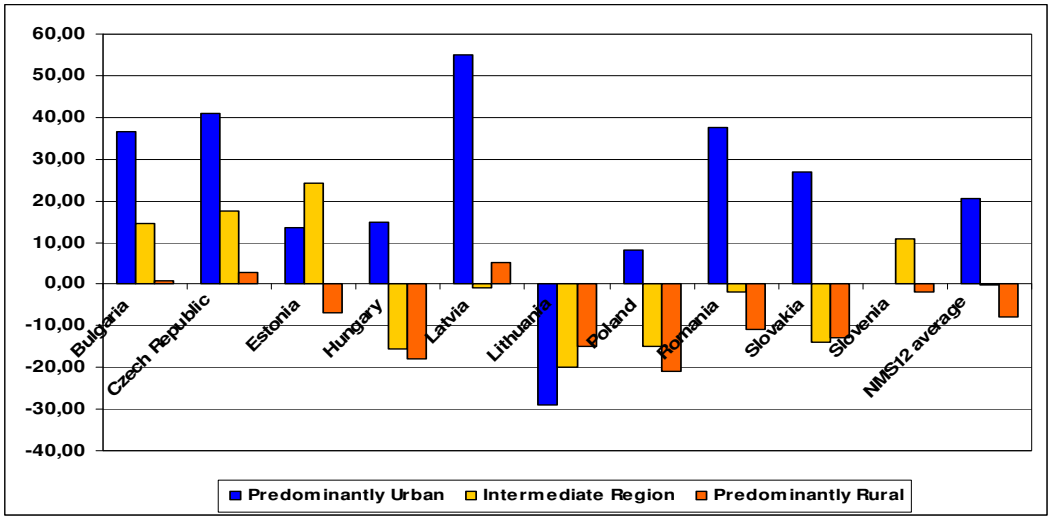
Denomination	2000			2006		
	Urban	Rural*	National average	Urban	Rural*	National average
Bulgaria	14.74	19.31	15.54	16.26	21.22	17.48
Czech Republic	15.92	13.16	13.51	15.64	14.09	14.28
Hungary	14.43	13.68	13.72	15.74	15.44	15.44
Poland	12.73	11.82	11.99	13.15	11.97	12.32
Romania	12.80	12.64	12.66	13.52	14.09	14.02
Slovakia	11.75	10.99	11.18	12.30	11.69	11.84
NMS average	**13.73**	**13.60**	**13.10**	**14.44**	**14.75**	**14.23**

*Average of Intermediate Regions in CZ, RO and SK
Source: Own composition based on Eurostat (2009)

Table 16 reveals that rate of 65+ people is growing in total population in all countries analyzed. On NMS level, rate of elder people in rural population was higher in 2006 than that of urban, though only Bulgaria shows similar trend in 2000 and 2006. Compared to national averages, rate of 65+ in rural population was lower than that of national average except for Bulgaria in both years and Romania in 2000. **One should notice, however, that increase of rate of 65+ in rural areas are faster in almost all countries analysed (exceptions are Bulgaria and Poland) than that of urban areas.**

Another indicator of demographical changes after EU accession is change in crude birth rate. Figure 22 puts extreme differences among member states concerning this indicator clear. One should first notice that from 1995 to 2007, crude birth rate of predominantly urban regions increased in all cases except for Lithuania, while that of predominantly rural areas decreased in all cases except for Bulgaria, Czech Republic and Latvia. **On NMS level, there were a 20% increase in crude birth rate of PU areas as well as an 8% decrease in PR areas from 1995 to 2007, indicating that rural areas are started to empty.** The worst situation of rural birth rate change is observable in Romania, while the best is in Latvia. Situation of IR regions vary country by country without any clear trends.

Figure 22: Change of crude birth rate in EU12, 2007/1995, (%), NUTS3



Source: Own composition based on Eurostat (2009)

6.2. Economic impacts

EU accession had various economic impacts on rural areas, some of which has already been demonstrated in previous chapters. In order to demonstrate economic impacts, the structure of rural employment is analysed as shown in Table 17.

Table 17: Share of rural employment by sector in selected NMS, %

Country	Agriculture			Industry			Services		
	1995	**2003**	**2006**	**1995**	**2003**	**2006**	**1995**	**2003**	**2006**
Bulgaria	33.62	29.19	28.79	29.31	25.75	27.79	37.07	45.06	43.42
Czech Republic	13.82	10.50	8.90	45.87	44.31	47.03	40.31	45.19	44.07
Estonia	22.74	18.00	13.09	33.11	35.09	35.25	44.15	46.91	51.66
Hungary	12.33	8.24	7.69	34.29	36.07	35.18	53.38	55.69	57.13
Latvia	28.05	20.50	16.66	23.89	26.40	28.41	48.06	53.10	54.92
Lithuania	32.24	28.64	21.25	27.38	27.45	28.73	40.38	43.91	50.02
Slovakia	11.27	6.79	6.00	36.89	33.86	33.88	51.84	59.35	60.12
Slovenia	19.68	15.07	13.46	41.23	40.09	39.46	39.09	44.84	47.08
NMS	**20.70**	**15.41**	**13.93**	**33.50**	**33.42**	**33.79**	**45.80**	**51.16**	**52.28**

Source: Own composition based on Eurostat (2009)

Structure of rural employment changed significantly in a decade (Table 17). **The share of rural agricultural employment decreased in all cases, mainly because of increase of employment in services.** The biggest decline in rural agricultural employment can be seen in Latvia, while the smallest in Slovakia. Employment by industry also decreased in majority of cases, though to a smaller extent. On NMS level, agricultural employment fell back by 7% in a decade, while that of services grew by the same extent in the same period. **This follows that a restructuring process of rural employment took place from 1995 to 2005, indicating a shift of employment to services from agriculture, which tendency continued after accession.**

The best indicators of impact of accession are trends in rural income generation and the progress in family incomes. Unfortunately, the accessible statistical information do not make a detailed analysis possible in these regards. Anecdotal information indicate that the progress of rural incomes lag behind the overall country level growth and the **urban-rural income gap has further widened after accession (Csáki-Forgács, 2008).** This is, however, not a new phenomenon. Rural population and rural areas have been lagging behind since the beginning of the transition in the early 90s and can be considered as the losers of transition (Verhoeven et al. 2009, World Bank, 2007)

7. Overall assessment

The report analyzed the diversity of effects of EU membership on agriculture in New Member States. On the whole we can conclude that EU accession had an overall positive impact on NMS, fastening growth up after 2004. A**gricultural output per hectare and per worker increased everywhere in the region, the intensity of participation in international trade also increased measurably** in line with the increase of nominal values of both exports and imports. A significant current price adjustment with increase on cereals, meat and milk

markets were also observable. Member states capitalised their possibilities in a different manner, however, thereby generating the following differences:

1. **As to resources,** an overall decrease in Utilised Agricultural Area could be seen after EU accession, though Latvia and Lithuania could increase their UAA from 2003 to 2007. Moreover, NMS countries experienced a large drop in agricultural work force; only Poland extended the number of agricultural employees after accession. Total assets per hectare grew in the majority of countries except for Hungary and Slovakia.
2. **As for production performance,** agricultural output per hectare in nominal value increased significantly after EU accession in NMS, while output in real value rose only in Baltic countries and Poland. EU accession had modest but **various impacts on overall production**. **Increase of cereal output could be seen from data analyzed, while stagnation and decline in livestock sector and limited progress in milk sector after 2004 is observable.** Moreover, all countries could increase their yields of cereals except for Bulgaria, Cyprus, Lithuania and Romania.
3. Strong differences exist among member states regarding **agricultural trade performance.** Nominal values of both exports and imports increased and Czech Republic, Estonia, Lithuania, Latvia, Poland and Slovakia could even duplicate its agricultural export value from 2004 to 2007. **After EU accession, however, majority of countries changed their product structure and started to increase the share of raw materials in their agricultural export with the** exception of Bulgaria, Estonia, Poland and Romania. Meanwhile, share of processed products in import increased in greatest agricultural producer countries (Bulgaria, Czech Republic, Estonia, Hungary, Poland, Romania). Hungary, Lithuania and Poland had positive trade balance in 2007, of which Poland significantly increased its net exports after 2004, whereas **vast majority of NMS had a negative agricultural trade balance before EU accession and made an even higher deficit after 2004.**
4. Current prices increased in all markets analysed, though scale and tendencies were different. **The most significant increase took place in the cereals area, while in meat and milk sectors the price adjustment was less in scale.** Price adjustment was the strongest in countries with the largest price lags to EU15 prior to accession such as Poland and the Baltic countries.
5. **The large number of very small farms (4.7 million) is a specific characteristic of the new member countries. The total number of farms decreased by 700,000 after accession. The so called dual farm structure, however, remained after EU accession with increasing differences.** Share of large farms in land use increased after EU accession in Bulgaria, Estonia, Hungary, Latvia, Lithuania and Slovenia. One should take into consideration that only Estonia could reverse shares of small and large farms in land use from 2003 to 2007, creating a predominantly large farm dominated structure from a predominantly small one. **After EU accession, average size of small farms increased by 20% and that of large farms decreased by 10%, suggesting that** gap between sizes of small and large farms decreased but is still high. G**ross farm income increased in vast majority of cases in the countries analyzed due to introduction of CAP analysed later.**

8. Why country performances after EU accession were different?

As was indicated earlier, the **EU accession has had an overall positive impact** in the agricultural sector across all the countries. The individual country performances, however, are **different.** There are a number of reasons why performance of countries differed.

First of all, the **initial resources available for the sector** as described earlier **were not uniform** and definitely had an impact. In this regard, the agri-ecological conditions and the quality of land endowment has to be mentioned at the first place. The significantly different level of assets available played also an important role (e.g. Slovenia, Lithuania and Poland vs. Estonia, Latvia and Hungary). The level of agricultural employment should also be mentioned especially in case of Romania, Bulgaria as well as Poland.

The performance of the individual countries after accession reflects the **structure of farming** (Lerman, 2007). The structure except Poland and Slovenia is the result of a difficult process of land privatisation and farm restructuring. The relatively consolidated farm structure with the dominance of small farms proved to be advantageous for these two countries and especially for Poland. The consolidated structure brought higher level of asset endowment as well. In countries with so called **"dual" farming structure,** both end of the farming are still suffering by a kind of "transition phenomena" (Swinnen-Rozelle, 2006). The small farms are generally too small and farmers are inexperienced and lack of resources, while the large ones still have some heritage of the collective farming system with some embedded inefficiencies.

The status of **downstream and upstream sectors** to agriculture played also some role, though in this regard, has been a significant improvement in all the countries concerned.

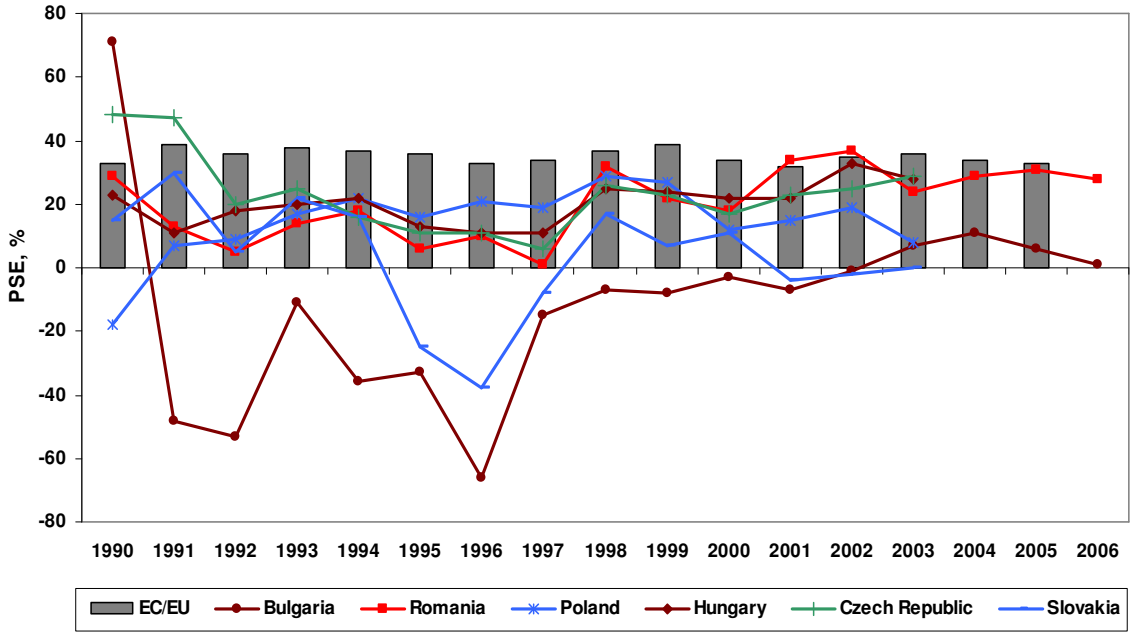
Finally, the **national policy and institutional framework** made a significant contribution. The assessment of national policies before and after accession combined with above mentioned factors provides a better understanding of these differences.

8.1. Pre-accession policies

The post accession performance of the NMS has been influenced strongly by the **agricultural policy framework** prevailing in the individual countries during the pre accession period especially from 1998 to 2004. The candidate countries implemented quite different policies, which included elements, some of them having positive, others negative impacts after accession and introduction of CAP (Swinnen-Rozelle, 2006).

The most critical component of pre accession policies was the level of support to agricultural production. Figure 23 shows the level of support in a number of candidate countries prior to accession.

Figure 23: Development of the Producer Support Estimate (PSE) in NMS, 1990-2006



Source: Dieter Kirschke (2009)

In some countries like Romania, Hungary and Czech Republic, the **level of support were close to EU level** or even in Romania higher than EU level in 2001 and 2002. **Other countries, especially Poland and Slovakia, maintained a very low level of support.** High level of support could have been beneficial for the post accession period if this support had focused mainly on competitiveness enhancement. Unfortunately, the support in Romania, Hungary and partly in the Czech Republic was given in an excessive price and market support rather than aiming at the improvement of competitiveness. As a consequence, the effect was negative on a longer term since in these countries the accession brought very little price increase. On the other side, in **countries with low level PSE and minimum price and market support prior to accession, proved to be beneficial,** especially in Poland, after the accession providing a scope for visible incentives for producers and led to significant production and trade response.

Restrictive land policies (e.g. in Hungary) and the **lack of land and farm consolidation** has been a factor negatively influencing the utilisation of the advantages of the enlarged markets by constraining significantly the flow of outside capital to the agricultural sector (Csáki et al. 2008). On the other side, liberal land policies (e.g. Baltic countries) helped agricultural sector to obtain more resources and utilise better the possibilities created by the accession.

The way how the countries used pre accession EU-provided facilities such as **SAPARD, ISPA and PHARE made also impact** upon post accession performance. Countries focusing on competitiveness enhancement and production improvement benefited more from these resources as far as post accession sectoral performance (Swinnen-Rozelle, 2006).

Finally, **the way how the institutional framework for CAP implementation was created had significant influence in some countries.** Delay in creating the required institutions and the actual time of their commencement had created some difficulties especially in the first year of membership. The not fully finalised institutional framework resulted in the loss of some EU funds in a number of countries.

8.2. Post accession policies

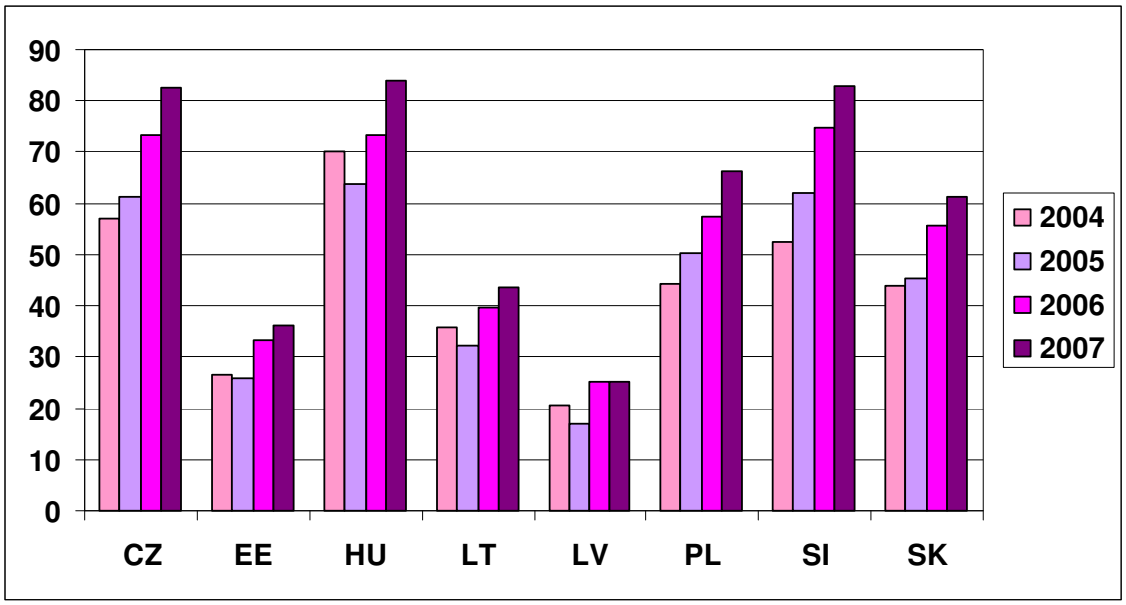
After accession, the introduction of CAP based on the **Coppenhagen agreement provided a uniform framework for national agricultural policies.** The agreement, however, included provisions for some adjustment to local conditions. It is important to notice also that the level of support was set on the basis of the yields in the pre-accession period (Swinnen-Rozelle, 2006). Therefore, **there have been significant differences in the level of support** among the individual countries, as indicated earlier.

According to the agreement, the countries could choose between a **simplified area-based payment system (SAPS)** complemented with additional support for rural development and implementing the EU15 type CAP. **All the countries, except Slovenia, opted for the simplified payment system,** thereby accepting that the direct payment amount was 25% of EU15's level in 2004. The countries have the freedom to transfer part of the rural development support to the direct payments as well as adding **so called national TOP-UP** to the EU provided funds (at the beginning max. 30%). All the countries used this opportunity, however in a different degree. **The TOP-UP was basically aimed to support livestock production.** The smallest level of TOP-UP payments was given in Slovakia and Lithuania (Swinnen-Rozelle, 2006).

The **EU grain market intervention system** proved to be important in case of bumper crops in years 2004/2005. Under the grain intervention system, over five million tonnes of grain was procured in Hungary, giving almost 50% of the total intervention purchase at EU level. This facility has been much less used in the other countries and in the years after 2005. **It is important to notice, however, that the experiences with this system have been controversial.** On one side, the intervention system helped to ease crop farmers' problems and provided them significant income, on the other side, stabilised grain-feed prices on a significantly higher level prior to accession resulting significant difficulties for the livestock sector (Csáki et al., 2008).

The farmers in the new member countries did not become eligible for the same level of support as in the EU15 countries, still the introduction of CAP led to a significant increase of support to the farmers. The largest component of support was provided in the form of area based direct payments (SAPS) excluding Slovenia. Figure 24 shows the distribution of these payments country by country.

Figure 24: Direct payments per hectare in selected NMS in 2004-2007, euro/ha



Source: Own composition based on European Commission (2009)

It is observable that Czech Republic, Hungary and Slovenia (EU15 type CAP) had the highest amount of direct payments per hectare (52-84 euro/ha) in the period analyzed, whereas lowest values pertains to Estonia, Latvia and Lithuania (17-44 euro/ha). This means that an agricultural producer of former countries got 2-4 times the amount of direct payments than that of latter ones due to the way how the original direct payments scheme was designed. Poland and Slovakia obtained quite similar subsidies, pertaining to an average in NMS. Values in most cases are increasing through years, accordingly to EU directives. In the Baltic countries and Hungary less direct subsidy per hectare streamed in 2005 than in 2004 due to the adjustment in eligible territories. **Total direct payments, anyway, increased from 1.4 billion to 1.9 billion euro on NMS level from 2004 to 2007.**

Distribution of these payments by size classes of producers is uneven, though. According to European Commission data, one can classify farmers as small (<5000 euro), medium (5000-99999 euro) and large (>100000 euro) types according to their income from direct payments (Table 18).

Table 18: Direct payments to producers by size class in selected NMS in 2006

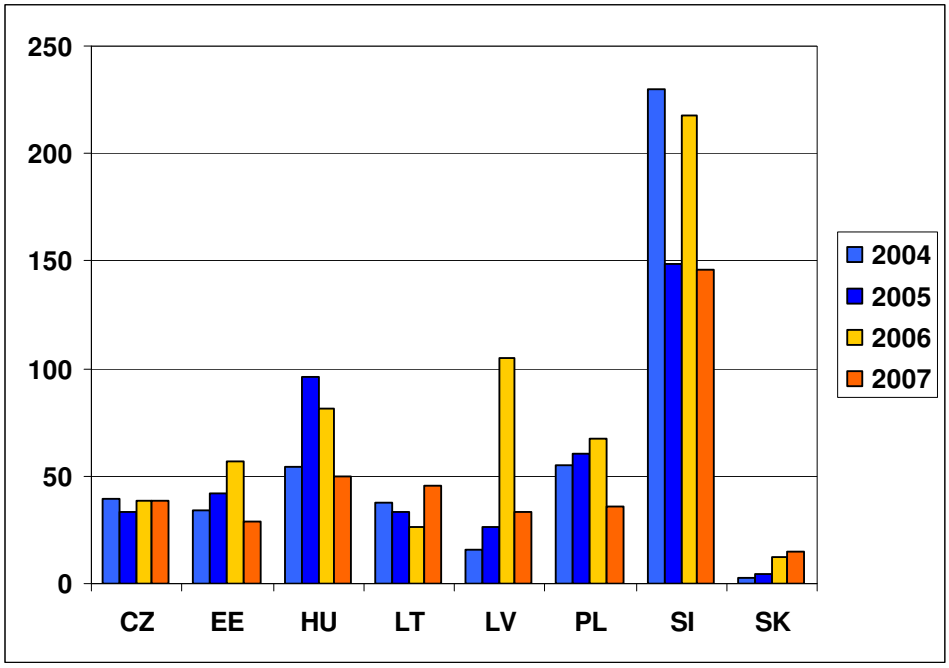
Country	<5000 euro			5000-99999 euro			>100000 euro		
	Payments (1000 euro)	Beneficiaries	Payments/ Beneficiaries (euro)	Payments (1000 euro)	Beneficiaries	Payments/ Beneficiaries (euro)	Payments (1000 euro)	Beneficiaries	Payments/ Beneficiaries (euro)
Czech Republic	21074	14970	1408	115008	4530	25388	119868	710	168828
Estonia	10362	18140	571	15934	970	16427	1336	10	133600
Hungary	123303	191430	644	162392	10890	14912	81490	440	185205
Latvia	26803	77610	345	11284	870	12970	259	n.a.	n.a.
Lithuania	71696	223200	321	28150	1970	14289	2640	20	132000
Poland	644058	1455360	443	139703	9470	14752	23257	140	166121
Slovakia	6504	11700	556	54595	1830	29833	40980	260	157615
Slovenia	26416	52250	506	2094	210	9971	1382	n.a.	n.a.

Source: Own composition based on European Commission (2009)

Maybe the most important columns in Table 18 are those calculating payments per beneficiaries. It turns out that there appears a huge difference among countries. **As to small farmers, one beneficiary gets the highest amount of direct subsidies in Czech Republic and the smallest in Lithuania**, while values here run between 321 and 1408 euro/farmer (difference of 4.4 times between the two ends). **As for medium size farmers, one beneficiary also gets the highest amount of direct payment is Czech Republic, while the lowest in Slovakia** (difference between the two ends is 3 times). Values here change between 9971 and 29833 euro/farmer. **In respect to large farmers, Hungarian producers got the highest amount of subsidies and Lithuanian the lowest in 2006** (difference between the two ends is 1.4 times). **Thereby we can conclude that inside size categories, differences decrease by the increase of farming sizes.** One should notice, moreover, that a small farmer in NMS got an average of 599 euro, a medium size farmer an average of 17318 euro, while a large farm an average of 157228 euro on NMS level.

Each country entitled to supplement CAP payments from its own national budget (TOP-UP) as an addition to the agricultural related public sector expenditures (administration, education, research). Figure 25 aggregates these national expenses for NMS after EU accession. **Slovenia provided the most (200 euro/ha), while Slovakia the least (10 euro/ha) on its agriculture from the national budget per hectare.** Hungary and Poland stayed on the average of the region, while Baltic countries and Czech Republic expanded less than 50 euro a year on agriculture per hectare with the exception of year 2006.

Figure 25: National expenditures for agriculture per UAA in NMS (euro/ha)



Source: Own composition based on European Commission (2009)

One should notice that national agricultural expenditures are fluctuating in the region (Figure 25). In majority of the cases, values for 2006 show higher, while values of 2007 show lower expenditures of countries. This is underpinned by the fact the countries spent the most in 2006 (average of 76 euro/ha) and the least in 2007 (average of 49 euro/ha) on agriculture on NMS level. **There is no clear trend, however, of national agricultural expenditures from 2004 to 2007 in the region so far.**

It is worth examining the relationship between national and EU expenditures. It is clear from Table 19 that national expenditures are below EU expenditures on agriculture in vast majority of cases (only exceptions are Hungary and Slovenia in 2004). **Comparing values of 2004 to 2007, the share of national expenditures shows a declining trend.** In 2007, the national support amounted to about a one-quarter of the EU funds received. The highest share of national expenditures compared to EU ones is observable in cases of Hungary and Slovenia, while the lowest in Lithuania if calculating four years' average.

Table 19: National expenditures per EU provided expenditures* on agriculture in selected NMS in 2004-2007 (%)

Country	2004	2005	2006	2007
Czech Republic	80.19	26.95	27.67	21.92
Estonia	44.14	36.46	38.12	17.91
Hungary	124.41	68.68	49.30	27.78
Latvia	21.19	26.39	99.23	n.a.
Lithuania	54.47	27.93	18.72	28.66
Poland	78.15	42.69	42.13	18.10
Slovenia	125.28	56.21	70.03	36.78

* from EAGGF (2004-2006) and EAGF+EAFRD (2007)
Source: Own composition based on European Commission (2009)

Besides direct payments, the **second pillar of CAP also provides support for farms and also for broader rural development purposes.** Table 20 summarizes these payments by countries. It is observable that Poland and Hungary got the highest amounts of Pillar 2 payments in 2004-2007, while lowest values pertain to Slovenia. Moreover, one should notice that rural payments were 4-15 times more in 2007 than in 2006 by countries. On NMS level, subsidies quadrupled from 2006 to 2007 as well as share of NMS payments compared to EU15 payments increased from 16% to 66% in four years' time.

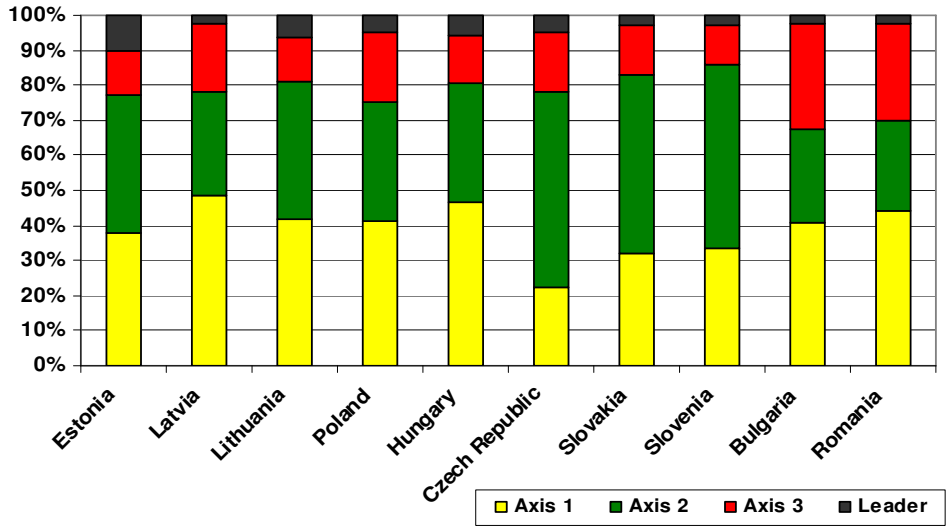
Table 20: Pillar 2 payments* in NMS by country in 2004-2007 (million euro)

Country	2004	2005	2006	2007
Czech Republic	39	56	75	397
Estonia	13	19	25	96
Hungary	73	104	135	571
Lithuania	32	42	49	261
Latvia	24	33	35	n.a.
Poland	279	398	516	1990
Slovenia	6	8	10	150
Slovakia	42	61	78	303
NMS total	508	720	923	3768
EU15 total	3152	3238	3261	5720

* from EAGGF Guidance Section (2004-2006) and EAFRD (2007)
Source: Own composition based on European Commission (2009)

Figure 26 indicates, however, that **for the period 2007-2013, countries' plans are different.** An overall tendency is to increase funds for rural development and for specific programmes such as Leader. Competitiveness enhancement, however, will remain the major objective, underpinned by the fact that new member countries used most of the Pillar 2 funds for competitiveness enhancement and relatively small amount remained for direct support of rural development.

Figure 26: EAFRD allocation in NMS, 2007-2013



Source: Dieter Kirschke (2009)

As far as impacts concerned, the **effectiveness of CAP implementation in a given country played also a role.** There have been difficulties in some countries especially in the first years of membership to provide funds in time required by the sequence of agricultural production partly due to inadequate institutional set-up and partly to slow adjustment to the relatively complicated administrative procedures. Finally, the **overall economic policy environment** of a specific country might supported or constrained the positive effect of EU membership in the sector.

9. Conclusions

The review of developments in the agricultural sector of the new member countries lead to a number of conclusions:

1. In general, the **accession had a positive impact upon the sector.** It resulted in a consolidation of production, higher current prices, higher export and import quantities, and especially higher farmers' incomes.
2. **There is a diversity besides the overall positive picture.** There are significant differences among the countries. This diversity is due to:
    a. Initial conditions
    b. Pre-accession policies
    c. Post-accession policies and the way of implementing CAP
    d. Macro policy and institutional environment
3. It is difficult to evaluate individual country performances. All the countries have gained, however, **it seems that Poland, Latvia and Lithuania are the leading countries** in adjusting to the EU conditions and utilising the new opportunities.
4. The EU membership has made NMS part of a large, rather competitive market. This market offers tremendous opportunities for the agricultural sector of the respective countries. At the same time, the national agricultural sectors are faced with a **significantly increased competition** in their domestic markets. Trade figures indicate that agricultural sectors in the new member countries have **limited potentials so far to withhold these competitive pressures.**
5. Changing market conditions, the **quick emergence of vertically coordinated food chains including hypermarkets, supermarkets and multinational agro-processing companies** with regional procurement systems **created new conditions both for producers and consumers.** Due to very strong price competition, consumers are generally the beneficiaries of these changes, while producers are not always able to adjust.
6. **It seems that the countries with consolidated farm structure (Poland, Slovenia) adjusted faster and more effectively** to the demand of enlarged markets than countries emerging from painful land reform and farm restructuring processes.
7. **EU membership has led to a significant increase of subsidies** received by the farmers and through led the increase of farmers' income. The support, however, is **not evenly distributed.** Small farmers are handicapped in many ways. Though they are also eligible for direct payments, due to the small farm size and administrative procedures, most of them receive marginal amounts or even not part of the system. Moreover, Pillar 2 funds conditions almost fully exclude smaller farmers.
8. The current CAP is designed based on the conditions of EU15 countries. The experiences of the first five years in the new member countries indicate that even with the possible modifications, **this system is not fully fit to the conditions of the new member countries and especially to the poorest segments of NMS.** In these circumstances, still poverty and competitiveness of the agricultural sector are the most pressing issues.

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