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CHANGES IN THE LEVEL AND STRUCTURE OF THE AGRICULTURAL SECTOR'S INCOME IN CEE COUNTRIES AS A RESULT OF THE INTEGRATION WITH THE EUROPEAN UNION

Summary: Financial support for the agricultural sector represents a significant share in the EU budget. The accession of CEE countries into the EU structures gave them the opportunity to benefit from this support. The aim of the paper is to analyze the importance of the subsidies in farm income as well as the changes in the average income levels and its structure in selected countries of Central and Eastern Europe in the pre- and post-accession periods.

Keywords: farm income, subvention, CEE countries.

1. Introduction

After World War II the need to provide necessary food supplies to the impoverished and ruined Europe resulted in a situation when agriculture became a priority area for the integration of the countries uniting within the European Economic Community [Zawalińska 2009]. Moreover, the economic weakness of agriculture in contacts with the market environment,¹ in comparison to other sectors of the national economy, resulting in the instability and the relatively low level of income for agricultural producers, made agriculture the object of particular interest and numerous regulations [Wilkin 1998].

The Common Agricultural Policy (CAP), established on the basis of Art. 39 of the Rome Treaty, became a transnational sector policy of the Community defining principles of intervention in agriculture, binding for all the member countries, while its aim next to the increased productivity of agriculture was also to support the level of farm income [Czykier-Wierzba 1995].

¹ This weakness results, for example, from the specific character of production, comprising dependence on natural conditions, remaining outside the control of the producer, the considerable fluctuations of the level of production manifested in fluctuations in production costs, prices and income, the limited mobility of factors of production and a long production cycle (for more details on the subject see [Wilkin 1998]).

The CAP in the first years of its implementation, aiming at reaching a high production level, was focused on the application of market means, for example, in the form of subsidies to units of production [Czyżewski *et al.* 2010]. These subsidies, next to the stabilization of agricultural markets, were to support the level of farm income. However, with time as a result of the international agreements leading to the liberalization of the agricultural sector and due to the generated surplus of production and related increased costs of the CAP, gradually implemented reforms led to changes in the structure of support instruments and their considerable shift towards subsidies, irrespective of the volume of production [Poczta-Wajda 2009].

However, the financial means allocated to the CAP still constitute a major item in the total budget of the EU, while the assurance of an adequate level of farm income continues to be an important objective of the practiced policy [Adamowicz 2008].

2. Sources and methods

The period of several years in which the countries of CEE have been a part of the EU structures and the resulting possibility to use the instruments of the CAP facilitate the analysis of the changes in the volume and structure of the farm income in these countries and the evaluation of the importance of these instruments in the modification of the farm income in individual countries, which is the aim of this study. In order to achieve this objective, we use the data contained in Economic Accounts for Agriculture (available in the EUROSTAT database), which make it possible to follow changes over time and compare productivity and economic results between EU countries, particularly in terms of transfers connected with mechanisms of the CAP. The category of farm income was applied, covering the income from agricultural activity in a given accounting period² and the category of subsidies, in which a distinction was made between subsidies on products and subsidies on production. They include transfers of EU resources through governmental bodies to domestic producers, serving the role of payment agencies³. Moreover, subsidies on products, paid for a unit of produced goods or service, refer particularly to market support. In turn, the latter type of subsidies refers to financial means received by an entity, but not connected with the volume of production (including e.g. direct payments).

The study is based on the data from 1999-2010, while distinguishing – in view of the problems analysed in this article – the pre-accession period covering 1999-2003 and the post-accession period from 2004 to 2010. The analysis was conducted on the

² Together with inseparable additional non-agricultural activity. In contrast to the income of households, farm income does not include the income from other sources, i.e. the income from non-agricultural activity, salaries and wages, social benefits and the income from property.

³ In Poland it is the Agency for Restructuring and Modernisation of Agriculture (ARMA) and the Agricultural Marketing Agency (AMA).

changes in the mean level of the income in the agricultural sector (in current prices and in fixed prices) as well as the changes in the mean level of agricultural subsidies (in current prices) in the countries of CEE, while due to the reasons connected with the subject matter of this study (i.e. the marginal role of agriculture), Cyprus and Malta were excluded from this analysis. Additionally, the mean annual share of the individual categories of subsidies in farm income was calculated, which made it possible to determine their role in the modification of the volume of farm income in the new member countries in comparison to EU-15.

3. Results

The analysis of the farm income in the selected countries of CEE in 1999-2010 indicates their positive values and an upward trend. An exception in this respect is found for the Czech Republic and Slovakia, in which the agricultural sector did not yield income several times over the period of the investigated years (see Table 1).

In turn, when comparing the mean annual farm income in the EU countries of CEE in terms of current prices before and after the accession to the EU, we may observe that the total income in that region increased by over 5.2 billion EUR, i.e. by 145%. At the same time, when investigating the level of income in terms of individual countries, it turns out that most of them recorded its increase to be on average two-fold. On the basis of Table 1, we may observe that the accession to the EU resulted in the reduction of the difference in the level of the income yielded in the agricultural sector between the new and old member countries. In 2004-2010 the level of mean annual income in EU-10 was approx. seven times lower, while in 1999-2003 this difference was over 20-fold.

In absolute values the biggest increase in farm income was recorded in Poland (over 3.5 billion EUR), while it was the smallest in Slovakia at 37 million EUR; however, in relative terms the highest increase in current income was observed in the Czech Republic and Slovakia. Such a dynamic increase in the mean farm income in these countries in the post-accession period resulted from losses, which the agricultural sector suffered in 1999-2003 (in the Czech Republic in mean annual terms it was -65 million EUR, in Slovakia it was from -2.1 in 1999 to -29 million EUR in 2003) (see Table 1). The farm income in Slovenia increased moderately (by 40%).

At the same time, it needs to be shown that in terms of fixed prices, the mean annual farm income in the EU-10 increased two-fold, while in the old member countries it decreased by 1/5. The biggest increase in the mean annual actual income in the post-accession period was recorded in Poland (114%) and Slovakia (91%). The lowest actual increase in mean income, by as little as 20%, was observed in Slovenia. Similar dynamics for the increase in actual income was found in Lithuania and Hungary, as it was by approx. 1/3 (see Table 2).

Table 1. The income in the agricultural sector in 1999-2010 (million EUR, current prices)

| Specification | EU-15 | EU-10 | Czech Republic | Estonia | Latvia | Lithuania | Hungary | Poland | Slovenia | Slovakia |
|------------------------------|--------|--------|----------------|---------|--------|-----------|---------|--------|----------|----------|
| 1999 | 67 894 | 3 062 | -219 | 35 | 87 | 242 | 715 | 1 921 | 206 | -2 |
| 2000 | 69 932 | 3 581 | -33 | 79 | 110 | 181 | 666 | 2 269 | 230 | 25 |
| 2001 | 75 230 | 4 667 | 90 | 102 | 145 | 157 | 778 | 3 080 | 205 | 45 |
| 2002 | 67 558 | 3 602 | -86 | 90 | 142 | 150 | 556 | 2 330 | 304 | 55 |
| 2003 | 70 226 | 2 843 | -79 | 55 | 131 | 145 | 504 | 1 863 | 195 | -29 |
| 2004 | 71 944 | 7 209 | 268 | 134 | 252 | 269 | 1 128 | 4 462 | 319 | 68 |
| 2005 | 62 448 | 7 281 | 237 | 140 | 260 | 328 | 1 111 | 4 554 | 323 | 22 |
| 2006 | 65 387 | 8 079 | 241 | 143 | 329 | 258 | 1 144 | 5 305 | 316 | 71 |
| 2007 | 72 452 | 10 318 | 361 | 212 | 347 | 396 | 1 185 | 7 081 | 365 | 105 |
| 2008 | 61 895 | 9 874 | 407 | 125 | 271 | 372 | 1 800 | 6 145 | 333 | 159 |
| 2009 | 49 176 | 8 376 | 98 | 91 | 212 | 251 | 899 | 6 279 | 284 | -23 |
| 2010 | 62 465 | 9 915 | 325 | 180 | 270 | 329 | 1 240 | 6 981 | 305 | -14 |
| 1999-2003 (mean per year) | 70 168 | 3 551 | -65 | 72 | 123 | 175 | 644 | 2 292 | 228 | 19 |
| 2004-2010 (mean per year) | 63 681 | 8 722 | 277 | 146 | 277 | 315 | 1 215 | 5 829 | 321 | 56 |

Source: authors' calculation based on Eurostat (date of access: 28.03.2011).

Table 2. The mean annual income of the agricultural sector in the selected countries of CEE in the pre- and post-accession period (fixed prices)

| Specification | Income in fixed prices Euros (million EUR per year) | | Dynamics of income in fixed prices (1999-2003 = 100) |
|----------------|--|-----------|---|
| | 1999-2003 | 2004-2010 | 2004-2010 |
| EU-15 | 77 944 | 61 692 | 79.1 |
| EU-10 | 4 041 | 8 094 | 200.3 |
| Czech Republic | -85 | 246 | x |
| Estonia | 85 | 128 | 150.5 |
| Latvia | 131 | 229 | 175.7 |
| Lithuania | 207 | 281 | 135.5 |
| Hungary | 839 | 1 153 | 137.4 |
| Poland | 2 536 | 5 436 | 214.4 |
| Slovenia | 245 | 303 | 123.3 |
| Slovakia | 26 | 49 | 191.4 |

Source: authors' own calculation based on Eurostat (date of access: 28.03.2011).

The increase in the mean annual levels of the farm income in the post-accession period to a considerable degree was influenced by an increase in the level of subsidies. This is also reflected in their increasing role in the fluctuations of income in selected new EU member countries (consider Tables 3 and 4). The dependence of income on the volume of EU subsidies was particularly observed in the Czech Republic and Slovakia. The level of mean annual income in those countries in the post-accession period, amounting to 277 and 56 million EUR, respectively, indicated that if had not been for the granted support (876.5 million EUR in the Czech Republic and 382.8 million EUR in Slovakia), the agricultural sector would still be suffering losses (see Table 5).

For all the new member countries total subsidies in 1999-2003 in current prices amounted on average to slightly over 1 billion EUR, while in 2004-2010 they increased to 6.2 billion EUR. It was first of all the result of a seven-fold increase in the level of subsidies to production. Moreover, the value of the transfers directed to products was also of some importance, as in the post-accession period they amounted to 1.8 billion EUR in comparison to 390 million EUR in 1999-2003. However, it needs to be observed that at the same time in the EU-15 countries the increase in the mean level of subsidies pertained only to subsidies to production. It was a result of the decisions made in the course of the Uruguay Round of GATT/WTO, which resulted in signing the agreement concerning agriculture in 1994; the EU was obliged to change the structure of support instruments for the agricultural sector [Poczta-Wajda 2009]. Both customs and export subsidies as well as the level

of internal support were reduced, while the aim of these actions was to gradually liberalise agriculture [Poczta, Pawlak 2008]. On the basis of further negotiations and realised CAP reforms, support for income of agricultural producers shifted from market support towards direct support. As a consequence, while in years 1999-2003 on average the annual value of subsidies to products in the EU-15 dropped by 60%, to 10.9 billion EUR, the value of subsidies to production increased almost three-fold (see Table 3). Prior to their accession to the Community, in the analysed CEE countries subsidies to products were also used; however, their mean value was much lower than after the accession.

Table 3. The subsidies granted to selected CEE countries in 1999-2010 (million EUR, current prices, mean per year)

| Specification | Subsidies to products | | Subsidies to production | | Total subsidies | |
|----------------|-----------------------|-----------|-------------------------|-----------|-----------------|-----------|
| | 1999-2003 | 2004-2010 | 1999-2003 | 2004-2010 | 1999-2003 | 2004-2010 |
| EU-15 | 26 562.7 | 10 893.8 | 12 845.4 | 34 157.2 | 39 408.1 | 45 051.0 |
| EU-10 | 390.2 | 1 780.7 | 640.8 | 4 491.2 | 1 031.0 | 6 271.8 |
| Czech Republic | 21.2 | 85.6 | 174.7 | 790.9 | 195.9 | 876.5 |
| Estonia | 15.3 | 18.2 | 8.2 | 104.3 | 23.4 | 122.5 |
| Latvia | 22.8 | 51.8 | 2.3 | 174.7 | 25.1 | 226.5 |
| Lithuania | 27.0 | 171.1 | 9.2 | 106.1 | 36.1 | 277.2 |
| Hungary | 127.8 | 231.6 | 115.4 | 884.9 | 243.3 | 1 116.6 |
| Poland | 94.8 | 1 072.7 | 115.5 | 1 888.6 | 210.3 | 2 961.3 |
| Slovenia | 39.4 | 43.2 | 66.8 | 204.0 | 106.2 | 247.2 |
| Slovakia | 39.4 | 95.9 | 145.1 | 286.8 | 184.5 | 382.8 |

Source: authors' own calculation based on Eurostat (date of access: 28.03.2011).

In view of the fact that the volume of financial means granted to products is dependent on the volume of agricultural production, we need to stress significant differences between the analysed countries in terms of their nominal values. It results from the data that, while in 1999-2003 the agricultural sector received relatively the highest amounts in Hungary⁴ (127 million EUR), after the accession the Polish agricultural sector turned out to be the biggest beneficiary of these funds with the granted amount of over 1 billion EUR. It needs to be stressed that this amount was as much as eleven times higher than the level from the pre-accession period (see Table 3).

Moreover, the volume of subsidies to production changed more dynamically. In Latvia, which in the pre-accession period on average received as little as 2.3 million

⁴ The support from domestic means.

EUR, after the accession an increase was recorded in the granted subsidies to the level of over 170 million EUR. In contrast, Lithuania, Estonia, and Poland belonged to the group of countries, in which the value of transfers to production in 2004-2010 increased more than 10 times.

As a consequence of the observed changes in the transfer of the individual categories of the subsidies directed to the agricultural sectors in the new member countries, it needs to be observed that obviously Poland is the biggest recipient of these funds, in which after the accession less than 3 billion EUR were directed per year. Next relatively high amounts were granted to Hungary and the Czech Republic (1.1 billion and 876 million EUR, respectively), while the other CEE countries in 2004-2010 had means ranging from 122 million EUR (Estonia) to 382 million EUR (Slovakia). Such a distribution of financial means is mainly the result of utilised agricultural area covered by subsidies in those countries.

Table 4. The mean annual proportions of the individual subsidies in farm income in selected CEE countries in the pre- and post-accession periods (%)

| Specification | Subsidies on products | | Subsidies on production | | Total subsidies | |
|-----------------------------|-----------------------|-----------|-------------------------|-----------|-----------------|-----------|
| | 1999-2003 | 2004-2010 | 1999-2003 | 2004-2010 | 1999-2003 | 2004-2010 |
| EU-15 | 37.9 | 16.7 | 18.3 | 55.2 | 56.23 | 71.92 |
| EU-10 | 11.5 | 21.0 | 18.5 | 50.6 | 30.04 | 71.57 |
| Czech Republic ^A | x | x | x | x | x | x |
| Estonia | 24.6 | 13.2 | 13.3 | 75.5 | 37.97 | 88.74 |
| Latvia | 18.0 | 19.0 | 1.7 | 64.1 | 19.74 | 83.14 |
| Lithuania | 14.8 | 56.4 | 5.7 | 33.9 | 20.58 | 90.26 |
| Hungary | 21.5 | 20.1 | 18.9 | 74.6 | 40.49 | 94.69 |
| Poland | 4.2 | 18.6 | 5.1 | 31.5 | 9.31 | 50.16 |
| Slovenia | 17.8 | 13.5 | 29.9 | 63.8 | 47.79 | 77.35 |
| Slovakia ^A | x | x | x | x | x | x |

^AThe determination of the share of subsidies in income (in the Czech Republic in the pre-accession period and in Slovakia in individual years of the analysed period) was impossible due to the losses suffered by the agricultural sector.

Source: authors' own calculations based on Eurostat (date of access: 28.03.2011).

Despite the considerable difference in the nominal level of the mean annual income between the old and new EU countries, the share of the total subsidies in income remains at the level of approx. 70%, whereas if in the EU-15 countries in 1999-2003 subsidies constituted over 50% of the income; then in the EU-10 countries it amounted to a little less than 1/3 (see Table 4).

After the accession to the EU in all the analysed CEE countries an increase was observed in the role of subsidies in the modification of income for farmers (see

Table 4). In 1999-2003 the mean share of subsidies in income ranged from 9.3% in Poland to 47.8% in Slovenia, while in the successive years (2004-2010) it was from 50% in Poland to over 90% in Hungary, Lithuania, and Estonia, which indicates a considerable dependence of farm income on EU financial means. The situation observed in Hungary and Estonia is first of all the result of an over 70% share in the subsidies to production, while in Lithuania the high share of subsidies in income results from transfers to products.

The relatively high importance in the modification of farm income is found for subsidies in Slovenia and Latvia (approx. 80%), mainly as a result of an increase in the volume and share of subsidies to production (from less than 2 to 64%). In turn, the proportion of subsidies to products was practically unchanged at 20%. Additionally, in Slovenia a decrease was observed for the share of subsidies to products. Moreover, it needs to be stated that as a consequence of including the new member countries into CAP mechanisms, in Estonia, Latvia, and Hungary the structure of support to income was found to change for individual types of subsidies (see Table 4).

Table 5. A hypothetical result of the agricultural sector in the Czech Republic and Slovakia (in million EUR, current prices)

| Specification | Czech Republic | | Slovakia | |
|--|----------------|-----------|-----------|-----------|
| | 1999-2003 | 2004-2010 | 1999-2003 | 2004-2010 |
| Mean annual result of agricultural sector | -65.0 | 277.0 | 19.0 | 56.0 |
| Received subsidies | 195.9 | 876.5 | 184.5 | 382.8 |
| Hypothetical result of agricultural sector without subsidies | -260.9 | -599.5 | -165.5 | -326.8 |

Source: authors' own calculations based on Eurostat (date of access: 28.03.2011).

As it was mentioned earlier, the exceptional situation was found in the Czech Republic and Slovakia, in which financial means in the form of subsidies play a key role in the modification of the volume of farm income. If it had not been possible to receive subsidies, the agricultural sector in both these countries still would not have been able to generate profits (see Table 5).

4. Conclusions

The fact that, starting from 1 May 2004, ten new CEE countries were included in the instruments of the CAP, offered an opportunity for additional financing for the agricultural sector from the EU budget, which obviously was reflected in the level of the income of agricultural entrepreneurs. However, it needs to be remembered that over such an extensive area as the EU, it is neither possible nor advisable to

unify the level of income in agriculture, e.g. due to different natural conditions (soil quality, precipitation, temperature). While differences in farm income between member countries are rather structural in nature (and not depending on the economic situation), thus reflecting different standards of development of their economies (including the agricultural sector), then the structure of the support system for farm income within the CAP is of importance together with the actions undertaken in the course of its implementation at the national or regional levels.

What results from the conducted analysis is the conclusion that the support directed to the agricultural sector within the EU budget has led to the doubling of actual income in agriculture of the new member countries. Due to the increase in the share of subsidies in farm income by over 40 to 71%, we need to indicate a gradually increasing dependence of the income situation in agriculture in selected CEE countries on transfers from the EU. At the same time, the analysis indicates that, as a result of the changes in the structure of transfers from the EU to the agricultural sector, the level of the farm income in the new EU member countries to the highest degree was influenced by direct support (subsidies on production).

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ZMIANY POZIOMU I STRUKTURY DOCHODÓW SEKTORA ROLNEGO W KRAJACH EUROPY ŚRODKOWO-WSCHODNIEJ W WYNIKU INTEGRACJI Z UNIĄ EUROPEJSKĄ

Streszczenie: Środki finansowe na wsparcie sektora rolnego stanowią znaczący udział w budżecie UE. Akcesja krajów z Europy Środkowej i Wschodniej w struktury UE dała im możliwość korzystania z tych środków. W artykule dokonano oceny znaczenia środków z dotacji w dochodach rolniczych. W tym celu analizie poddano zmiany średniego poziomu oraz struktury dochodów sektora rolnego w wybranych krajach Europy Środkowo-Wschodniej w okresie przed- i poakcesyjnym. Przeprowadzone badania wskazały na duże uzależnienie dochodów rolniczych od otrzymywanych dotacji.