Fiscal impulses vs. structural changes in the Polish agriculture

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Abstract

The Polish EU accession fundamentally changed the conditions in which farmers operate. This applies particularly to agricultural policy – types of policy instruments and the scale of support. Significant fiscal impulses aimed at agriculture led to acceleration of structural changes in the Polish agriculture.

The aim of the paper is to analyse the scale and character of annual fiscal impulses directed at agriculture and to verify their impact on structural changes in Polish agriculture, their specific features and spatial distribution. The analysis is based on publically available statistical data concerning agricultural policy and agricultural sector in Poland. The analysis applies the concept of fiscal impulses to assess how agriculture reacts to budgetary policy towards this sector observed in Poland in the period 2012–2016.

The results show that the scale of fiscal impulses varied significantly in the analysed period. Also their structure evolved. This influenced the range and character of the observed structural changes in the agricultural sector as well as their spatial distribution. Generally, it can be concluded that the changes in Polish agriculture lead to an increasing diversity of this sector and thus create a need for a more and more targeted agricultural policy.

Keywords: Polish agriculture, fiscal impulses, structural change.

Фискалните стимули и структурните промени в полското селско стопанство

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Резюме

Присъединяването на Полша към ЕС промени основно условията, при които работят фермерите. Това е приложимо особено към селскостопанската политика – типове политически инструменти и мащаб на подпомагане. Значимите фискални стимули, насочени към селското стопанство, водят до ускоряване на структурните промени в полското земеделие.

Целта на доклада е да се анализират размерът и характерът на годишните данъчни стимули, ориентирани към селското стопанство, и да се провери техният ефект върху структурните промени в полското селско стопанство, техните специфични характеристики и разпространение в пространството. Анализът е основан на публично достъпни статистически данни, свързани

със селскостопанската политика и селскостопанския сектор. Анализът прилага понятието фискални импулси (стимули) за да се изчисли как земеделието реагира на бюджетната политика към сектора през периода 2012–2016 г.

Резултатите показват значителни вариации на скалата на фискални стимули през анализирания период. Тяхната структура също е еволюирала. Това оказва влияние на обхвата и характера на наблюдаваните структурни промени в аграрния сектор, както и тяхното пространствено разпределение. Като цяло може да се обобщи, че промените в полското стопанство водят до повишаване разнообразието в сектора и това създава нужда от все по-целенасочена селскостопанска политика.

Ключови думи: полско селско стопанство, фискални стимули, структурна промяна

INTRODUCTION

The Polish EU accession fundamentally changed the conditions in which farmers operate. Introduction of the common agricultural policy (CAP) in Poland profoundly changed the types of policy instruments and the scale of support applied to agriculture. Significant fiscal impulses aimed at agriculture led to acceleration of structural changes in the Polish agriculture.

There are numerous definitions of structural changes in agriculture, but most of the definitions relate to the factors of production seen as the driving force of these changes (Goddard, 1993). Within the theoretical economic models explaining the behaviour of agricultural producers the structural changes are presented as the result of the movement of factors of production (i.e. land, labour and capital) from their less to more efficient applications (Lobley et al., 2002).

Structural changes taking place in agriculture are closely related to the pace of economic development, the financial situation of farms and agricultural policy (Urban, 2009). The Polish EU accession, thanks to the CAP, accelerated the process of structural changes in the Polish agriculture. This is both the result of the inclusion of Poland to the EU single market as well as the funds targeted at agriculture. During the twelve years of the Polish EU membership Polish farmers received over EUR 35 billion in the form of direct payments.

There is a large number of channels through which fiscal policy influences the real economy. Fiscal impulses can be defined as changes in government budget balance resulting from changes in budget expenditure and taxation (Schinasi, Lutz, 1991). Since the 90s of the XX century we can observe a growing interest of economists in assessing fiscal impulses and determining their short and long-term impact on the economy. The last world financial and economic crises let to an influx of research on fiscal policy acting as a stabilization tool for the whole economy (Iwata, 2013).

The fiscal stimuli are designed as tools enabling growth of the economy – to its aggregate demand by increasing the level of private consumption (Davig and Leeper, 2011). However, generally fiscal stimulus packages are targeted directly at chosen sectors of the economy. The economists' debate on actual impact of fiscal policies is still going on. Yet, the recent studies show that the impact of a stimulus package depends on the economic situation at the time of the policy's implementation (Agnello et al., 2013).

Fiscal impulses are measured in order to enable identification of the direction of fiscal policy and to assess the aggregate effects of fiscal policy on the government's budget balance. There is a number of competing definitions of fiscal impulses. A fiscal impulse is a measure of whether government fiscal policy decisions are adding to, or subtracting from, aggregate demand pressures in the economy (Philip et al., 2002).

Fiscal impulses are sometimes measured and analysed not only at country level but also at regional and sectoral ones. Yet, there is hardly any research related to agriculture. The main reasons for the lack of research in this filed are the dimin-

ishing role of agriculture in the whole economy and the problem with estimating the agricultural output due to its dependence on weather conditions. Therefore, it is more common to analyse fiscal impulses from the input perspective (de Castro et al., 2010).

In recent decades, agriculture almost all over the world has become a sector acting as a beneficiary of redistributive fiscal spending. Therefore, its net fiscal position in relation to public finance is positive. This poses a number of questions, among them the problem of the impact of this situation on the development of the agricultural sector and the influence of support's volatility on the state of agriculture.

The aim of the paper is to analyse the scale and character of annual fiscal impulses directed at agriculture and to verify their impact on structural changes in Polish agriculture, their specific features and spatial distribution. The analysis is based on publically available statistical data concerning agricultural policy and agricultural sector in Poland.

Definitions and measurement of fiscal impulses

There is a number of channels through which fiscal policy exerts its influence on the economy, including e.g.: growth, inflation, aggregated demand and income distribution. The problem of the size and actual mechanisms of this influence are still important questions in macroeconomics.

Bouakez et al. (2014) stated that "measuring the effects of discretionary fiscal policy is both difficult and controversial, as some explicit or implicit identifying assumptions need to be made to isolate exogenous and unanticipated changes in taxes and government spending". There is already a consensus in the economics that the impact of fiscal policy on economy depends not only on the scale of fiscal stimulus but also on the time it is applied – during an expansion or a recession – and the fact whether the spending is increasing or decreasing (Riera-Crichton et al., 2015).

Fiscal impulses can also be defined as discretionary changes in the fiscal balance. Thus, fiscal adjustment is a discretionary improvement of that balance, while fiscal stimulus results in its discretionary deterioration (Borys et al. 2013). De Castro et al. (2010) distinguish between two approaches to assessing the scale of fiscal stimuli – input and output approach. Input approach is an assessment concentrating on the question of the financial impact of a fiscal impulse on the general government budget balance. Output approach is an assessment of the results of implementing a fiscal impulse, including second-round effects of the impulse applied to the economy.

The impulse sources are categorised at the level of the state budget and according to de Castro et al. (2010) we can name following impulse sources: automatic stabilisers (cyclical component according to ESCB method); cyclically adjusted primary deficit; cyclically adjusted revenue ratio and cyclically adjusted primary expenditure ratio. There is also a number of impulse transmission channels, including: change in direct government demand; compensation of government employees; intermediate consumption; government investment; impact on private households' income and purchasing power; social payments; capital transfers direct taxes; social contributions; indirect taxes; impact on firms' profits; social contributions and impact on rest of the world.

The concept of fiscal impulses is linked to fiscal multipliers. Some researchers call for not confusing them, like Schinasi and Lutz (1991) who stated that fiscal impulses try to answer the question "Has there been a policy-based change in the government's budget balance?", while fiscal impulses focus on the question "What is the impact of changes in fiscal policy on economic activity and other economic variables?". Yet, other researchers see "fiscal impulse" as a synonym to "fiscal multiplier" as in the case of the output approach presented by de Castro et al. (2010).

Scale and changes in fiscal impulses directed to Polish agriculture

The analysis of the Polish national spending on agriculture as a share of the GDP in the period 2000-2016 shows that there were significant fluctuations in the scale of support targeted at this sector (Fig. 1). Only one change can be explained by the alteration of the accounting procedure applicable to the Polish state budget (a drop from 1.4% to 0.91% observed between the year 2009 and 2010). The accounting change meant separating the EU funds for agriculture from the Polish ones and thus the budgetary position devoted to agriculture shows only Polish national spending and the EU common agricultural policy's resources are showed in a different part of the Polish budget. The biggest change – from 0.86% in 2006 to 1.56% in 2007 was a result of a significant inflow of EU funds. The other changes post-EU accession (after 2004) are a result of decreasing spending on agriculture and rural areas.

The current trend will probably continue up to 2020, when the current EU programming period ends. It is impossible to state whether this trend will be continued after 2020 as the future tendencies will depend on the scale of the national envelop assigned for Poland within the CAP for the period post 2020. However, given the current level of Polish spending on agriculture, it can be claimed that there is not much room for further reductions in real spending on agriculture within the Polish national budget as it generally is devoted to supporting prevention and fighting of plant and animal diseases as well as research, which is especially needed in the light of the challenges related to climate change.

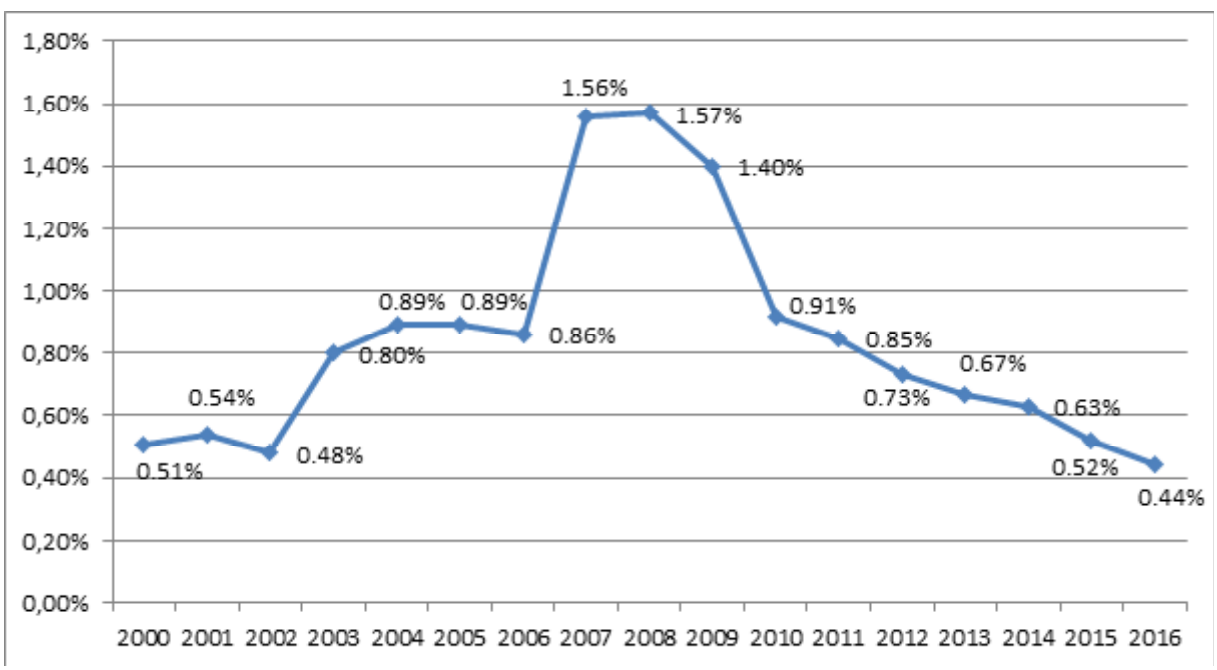

Fig. 1. Share of spending on agriculture, rural development and agricultural markets in the GDP in 2000–2016 (%)
Source: Wieliczko (2016).

It must be said that also the EU funds for agriculture show fluctuations in the scale of fiscal impulses. As presented in table 1, in recent years the fiscal impulses targeted at the Polish agriculture were characterised by variations both in scale and in their direction. In the period 2012-2016 only in 2014 an increase (a fiscal impulse) of the Polish agricultural spending was observed. However, when taking into account the funds directed to social security system for farmers and the members of their households[1], the drop in total agricultural spending is much lower, but observed in each year of this period. In the case of the EU funds we saw an increase in the period 2013-2015 as the end of the programming period 2007-2013 led to higher inflows of funds for the pillar 2 of the CAP. The growth of EU funds acted as a catalyst for a significant decrease in BGK[2] pre-financing as it was not necessary. Summing up, the whole amount of funds for agriculture changed less considerably than the Polish spending on its national agricultural policy. Thus, it shows that in recent years the national agricultural policy offered negative fiscal impulses, which were abated by the funds from CAP and the Polish social security system for farmers.

As the budgetary headings and subheadings are highly aggregated constructs, they leave no room for the actual analysis of the direction and type of potential impact on the economy. Therefore, it is important to evaluate also the types of instruments used within the Polish national agricultural policy. As the table 2 shows, the structure of the state aid targeted to agriculture in Poland changed considerably during the period 2004-2014. The most visible change is the huge fall in the scale of spending, which more than halved within a decade. Yet, the key state aid instrument remained the same – tax exemptions under Directive 2003/96/EC. These exemptions relate to the excise tax applied to petrol used by farmers for tractors. Yet, scale of funds for this support decreased over 3-fold and its share in the Polish state aid for agriculture dropped from 61.2% in 2004 to 43.6% in 2014. In this period we observed doubling of the funds targeting animal disease and an introduction of insurance premium support. A large decrease of spending concerned the measures also supported by the EU – investment in agricultural holdings and setting-up of young farmers.

Table 1. Fiscal impulses in the Polish agriculture (per cent change year-on-year)*

Budgetary positions	2012	2013	2014	2015	2016
Agriculture, rural development, agricultural markets & aquaculture	-7.55	-2.56	3.92	-15.3	-8.61
With social security system	-2.56	-0.46	-2.25	-3.5	-1.88
The EU funds	-9.39	10.97	5.79	8.05	-7.71
BGK pre-financing	-19.43	-19.78	-35.36	-66.85	126.35
Plus the EU funds & BGK pre-financing	-8.06	4.02	0.89	-1.36	-4.42

*The figures were calculated taking into account the planned inflation target.
Source: Own elaboration based on Czyżewski (2012–2016).

Table 2. Scale of funding for national state aid measures for the Polish agriculture in the years 2004–2014 (in EUR million)

State aid measure	2004	2014
Adverse climatic events	:	3.6
Adverse weather conditions	12.3	0
Animal diseases	33.8	72.0
Employment	0.7	:
Forestry	11.1	19.6
Insurance premiums	:	38.6
Investment in agricultural holdings	152.8	35.2
Plant diseases and pest infestations	2.2	0.1
Investment in processing and marketing	0	0.1
Environmental protection	3.6	0
Encouraging quality products	0.6	11.1
Research and development	44.7	23.9
Restructuring firms in difficulty	1.3	:
Early retirement	2.3	:
Start-up of producers groups	1.0	0.2
Tax exemptions under Directive 2003/96/EC	663.5	189.3
Technical support	:	:
Natural disasters or exceptional occurrences	35.9	1.8
Setting up of young farmers	80.5	36.3
Rescuing firms in difficulty	2	:
Other	36.5	2
Sum	1084.8	433.8

Source: Own elaboration based on DG Competition database.

Undoubtedly, the most important and the most commonly received instrument of public support for agriculture in Poland is the system of direct payments within the CAP. Due to phasing-in system applied to new EU entrants since the accession of 2004, the rates of direct payments were gradually increasing in the first years of the Polish EU membership (tab. 3). The actual increases were strongly influenced by the exchange rate of the Polish zloty. The highest rates were applied in 2014 – EUR 218, that is almost five times more than in 2004. Since 2015 a new system of direct payments is introduced that resulted in lowering the rates of basic direct payments. Even if we add the second most commonly received type of payments – the one for the so-called greening – the actual rate of payment is still much lower than in 2014. The key factor leading to the lowering of

[1] Farmers' social security system in Poland operates within Agricultural Social Insurance Fund (KRUS). More about it can be found on its homepage: http://www.krus.gov.pl/en/.

[2] BGK is an abbreviation of the name: Bank Gospodarstwa Krajowego. There is no official English name used. BGK is a Polish state-owned development bank. More information about its activities can be found on the page: https://www.en.bgk.pl/.

basic payments (+ greening) is the introduction of redistribution payments for each hectare of UAA between 3rd and 30th ha. In 2016 the rate for this payment was 40 EUR/ha.

Summing up, we can say that the level of fiscal impulses in the period 2015-2020 should be low as the level of support stabilises. This should also lead to stabilisation in the developmental trends characterising the Polish agriculture.

Impact of fiscal impulses on the structural changes in the Polish agriculture

As it has been already mentioned the key instrument of agricultural policy influencing the Polish agricultural sector are direct payments. During the 11 years of receiving direct payments the average farm size of farms benefiting from this instrument grew by about 0.5 ha of UAA (tab. 4). Yet, the extend of changes varied among the Polish regions and in one of them the average size of a farm receiving direct payments fell between 2005 and 2015. It must be also mentioned that the number of beneficiaries of direct payments decrease in the period 2005-2015 by less than 10%, but in two regions with farms smaller than the national average dropped by about 15% - in małopolskie and śląskie.

We also observed changes in the structure of agricultural holdings by land size groups. As the farms smaller than 1 ha of UAA are not eligible for direct payments their share in the farm structure

Table 3. Basic direct payment rates in Poland in the years (2004–2016)

Year	Exchange rate	Direct payment rate	
		EUR	PLN
2004	4.7352	44.5	210.53
2005	3.9185	57.4	225.00
2006	3.9713	69.6	276.28
2007	3.7730	79.9	301.54
2008	3.3967	99.9	339.30
2009	4.2295	119.9	506.99
2010	3.9847	141.1	562.08
2011	4.4050	161.3	710.57
2012	4.1038	178.4	732.06
2013	4.2288	196.3	830.30
2014	4.1776	218.0	910.87
2015	4.2448	106.9	453.7
Greening 2015	4.2448	71.7	304.31
Sum 2015	4.2448	178.6	758.0
2016	4.3192	107.0	462.05
Greening 2016	4.3192	71.8	310.1
Sum 2016	4.3192	178.8	772.15

Source: Own elaboration based on Agency for Restructuring and Modernisation of Agriculture's (ARiMR) data.

plummeted from 33.3% in 2002 to just 2.0% in 2015 (tab. 5). The share of the largest farms – 50+ ha more than tripled in this period. The group of farms with an area of 20-50 ha doubled. The smallest change was seen in the case of farms with 1-2 ha of UAA.

The policy impact can also be seen in the radical drop in the surface of agricultural land that is not used (tab. 6). The main factor for this fall is the introduction of direct payments that are eligible only for land which is kept in good condition in line with good agricultural practices.

A more difficult to access are the observed changes in the number of persons working in agriculture per 100 ha of UAA. Contrary to expectations, the number of people employed significantly increased during the period 2006-2015 (tab. 7). This should be analysed not only in the light of a decreasing number of farms and of an increasing size of an average farm, but we also should take into account the social policy and macroeconomic conditions leading to a situation when small farmers and their family member stick to agriculture due to lack of better job offers and to keep farmer status to be eligible for staying in social security system for farmers in which contributions to be paid are much lower than the ones paid in the system for other sectors.

Table 5. Share of agricultural holdings in a given agricultural land size group (in per cent)

Year	0-1	1-2	2-3	3-5	5-10	10-15	15-20	20-30	30-50	50-100	100+ ha
2002	33.3	17.6	9.6	11.9	14.6	6.2	2.9	2.2	1.1	0.7	
2005	34.6	16.4	9.5	12.0	14.2	6.1	2.8	2.4	1.3	0.8	
2006	30.3	16.1	10.3	13.2	16.0	6.5	3.0	2.4	1.3	0.6	0.3
2007	29.9	16.4	10.6	13.2	15.5	6.5	3.0	2.5	1.4	0.6	0.3
2008	29.4	16.7	10.4	13.1	16.1	6.4	3.0	2.4	1.4	0.7	0.3
2009	29.3	16.5	10.7	13.1	15.6	6.7	3.1	2.5	1.4	0.7	0.3
2010	31.4	15.0	10.1	12.7	15.4	6.7	3.2	2.7	1.6	0.8	0.4
2011	26.5	17.4	11.4	13.6	15.2	7.1	3.3	2.8	1.6	0.7	0.4
2012	1.5	19.4	14.2	17.7	23.6	9.7	5.0	4.2	2.7	1.3	0.7
2013	2.3	18.7	13.4	18.7	23.4	10.2	4.9	4.1	2.4	1.2	0.7
2014	2.2	18.5	32.4	21.9	10.4	5.0	7.3	2.3			
2015	2.0	18.0	32.2	22.9	10.3	5.1	7.3	2.3			

Source: Own elaboration based on Central Statistical Office's data

Table 4. The size of agricultural land (in ha) per an average agricultural holding receiving direct payments in the Polish regions in the period 2004–2015

Region	2004	2005	2006	2007	2008	2009
Dolnośląskie	14.2	14.1	14.2	14.4	14.8	15.0
Kujawsko-pomorskie	14.9	14.8	14.9	15.1	15.3	15.5
Lubelskie	7.3	7.2	7.2	7.3	7.4	7.5
Lubuskie	17.8	17.9	18.3	18.8	19.4	19.8
Łódzkie	7.4	7.3	7.3	7.4	7.5	7.5
Małopolskie	3.7	3.7	3.7	3.7	3.8	3.9
Mazowieckie	8.7	8.5	8.6	8.6	8.8	8.9
Opolskie	16.5	16.5	16.9	17.2	17.5	17.8
Podkarpackie	4.1	4.1	4.2	4.2	4.3	4.4
Podlaskie	12.2	12.0	12.1	12.2	12.3	12.4
Pomorskie	17.9	17.6	17.7	17.7	17.9	18.2
Śląskie	6.2	6.2	6.2	6.3	6.5	6.7
Świętokrzyskie	5.2	5.2	5.3	5.3	5.4	5.4
Warmińsko-mazurskie	22.7	21.9	21.8	21.8	22.1	22.3
Wielkopolskie	13.8	13.7	13.8	13.8	14.0	14.0
Zachodniopomorskie	27.4	26.6	27.1	27.4	28.3	28.6
Average	9.8	9.6	9.6	9.7	9.9	10.1

*Farm size in 2015 to the one in 2005 in per cent. The year 2005 was chosen as a reference
Source: Own elaboration based on ARMA's data

Table 6. Set-aside and fallow land area (in '000 ha)

Year	Area
2002	2302
2003	1762
2004	1399
2005	1029
2006	984
2007	413
2008	463
2009	498
2010	432
2011	468
2012	440
2013	447
2014	475
2015	134

Source: Central Statistical Office (2007–2016).

Table 4. Continue

Region	2010	2011	2012	2013	2014	2015	Change*
Dolnośląskie	15.1	15.4	15.5	15.2	15.4	15.4	109.8
Kujawsko-pomorskie	15.5	15.5	15.6	15.5	15.8	15.8	106.6
Lubelskie	7.5	7.5	7.6	7.5	7.6	7.7	107.1
Lubuskie	20.1	20.5	20.5	20.0	20.0	19.8	110.7
Łódzkie	7.6	7.7	7.7	7.7	7.8	7.8	106.8
Małopolskie	3.9	4.0	4.0	4.0	4.1	4.1	110.9
Mazowieckie	8.9	9.0	9.0	8.9	9.0	9.0	105.1
Opolskie	17.8	18.1	18.0	17.8	18.1	17.4	105.5
Podkarpackie	4.4	4.4	4.5	4.5	4.5	4.6	110.8
Podlaskie	12.5	12.6	12.6	12.4	12.5	12.5	104.3
Pomorskie	18.3	18.4	18.2	17.9	18.2	17.9	101.5
Śląskie	6.8	7.0	7.1	7.1	7.2	7.3	117.8
Świętokrzyskie	5.5	5.5	5.6	5.6	5.6	5.7	109.3
Warmińsko-mazurskie	22.2	22.2	22.0	21.6	21.8	21.6	98.3
Wielkopolskie	14.1	14.1	14.1	14.0	14.1	13.7	100.3
Zachodniopomorskie	29.2	29.1	28.9	28.1	29.0	28.6	107.5
Average	10.1	10.2	10.3	10.2	10.3	10.2	107.2

Table 7. Employed persons in agriculture by regions per 100 ha of agricultural land in the years 2006–2015

Region	2006	2007	2008	2009	2010	2011
Dolnośląskie	7.2	7.2	7.3	7.2	8.8	8.8
Kujawsko-pomorskie	11.1	11	10.5	10.6	9.7	10.0
Lubelskie	18.7	17.6	17.4	17.4	19.3	21.0
Lubuskie	4.9	4.9	4.8	4.8	6.6	6.6
Łódzkie	17.3	17.2	17	17.3	16.2	17.8
Małopolskie	26.2	25.4	25.2	26.2	39.2	39.6
Mazowieckie	14.9	14.5	14.9	14.4	13.6	14.4
Opolskie	8.6	8.7	8.4	8.4	8.8	9.1
Podkarpackie	19.8	20.2	20.1	20.8	34.3	37.1
Podlaskie	12.4	12.2	12.1	11.8	10.8	11.7
Pomorskie	7.3	7.4	7.5	7.3	8	8.3
Śląskie	14.5	14.9	15.2	14.5	21.9	22.3
Świętokrzyskie	25.1	24	24.6	24.5	25.6	27.7
Warmińsko-mazurskie	6.2	6.2	6.4	6.2	6.5	6.2
Wielkopolskie	11.6	11.2	11.3	11.2	11.5	11.6
Zachodniopo-morskie	4.0	4.1	4.2	4.1	4.6	5.0
Average	13.1	12.9	13	12.9	15	15.1

Source: Own elaboration based on Central Statistical Office's data.

Table 7. Continue

Region	2012	2013	2014	2015	Change
Dolnośląskie	8.8	9.1	9	9.3	129.2
Kujawsko-pomorskie	10.4	10	9.9	9.9	89.2
Lubelskie	21.7	22.2	22	21.2	113.4
Lubuskie	6.7	8.1	7.6	8.5	173.5
Łódzkie	18.0	18.1	18.5	18.3	105.8
Małopolskie	47.1	48.5	50.2	50.4	192.4
Mazowieckie	14.8	15.7	15.9	15.5	104.0
Opolskie	9.4	9.3	10	9.8	114.0
Podkarpackie	41.9	43.8	44.5	44.6	225.3
Podlaskie	11.5	11.6	11.6	11.8	95.2
Pomorskie	8.3	8.4	8.5	8.2	112.3
Śląskie	26.3	25.9	27.2	27.8	191.7
Świętokrzyskie	29.7	29.6	30.5	30.8	122.7
Warmińsko-mazurskie	6.3	6.4	6.6	6.6	106.5
Wielkopolskie	11.5	11.9	11.6	12.0	103.4
Zachodniopomorskie	5.1	5.2	5.4	5.3	132.5
Average	15.6	15.9	16.0	16.1	122.9

Table 8. Gross output, intermediate consumption and gross value added per 1 ha of agricultural land in Poland in the years 2000–2015 (in PLN)

Year	Gross output	Intermediate consumption	Gross value added
2000	3143	2150	993
2002	3296	2298	998
2003	3480	2432	1048
2004	4272	2707	1565
2005	3982	2579	1403
2006	4079	2669	1410
2007	5039	3232	1807
2008	5129	3461	1668
2009	4945	3241	1704
2010	5450	3486	1964
2011	6519	4193	2326
2012	6888	4168	2720
2013	7380	4178	3202
2014	7236	4399	2837
2015	6782	4245	2537
Change	215,8	197,4	255,5

Source: Own elaboration based on Central Statistical Office's data.

The changes in the Polish agriculture are also visible in its gross output and gross value added per 1 ha of UAA. Between 200 and 2015 we observed doubling of the gross output expressed in PLN (tab. 8), while the gross value added increased even more. At the same time the scale of intermediate consumption increase less than the gross output leading to the observed growth of gross value added.

CONCLUSIONS

The analysis of the scale of fiscal impulses targeting Polish agriculture drastically increased after the Polish EU accession in 2004. We observed a steady increase in fiscal impulses from the CAP up to 2014. The current EU programming period shows a stabilization at the level close to the one seen in 2014. At the same time we are witnessing a gradual fall in the scale of fiscal impulses stemming from the Polish national budget. The flows in fiscal stance on agriculture in Poland are not so much determined by the changes in the macroeconomic situation but they are to large degree shaped by the other parts of the state budget and the country's budgetary situation. It can also be stated that the changes in the Polish "agricultural budget" seem to be the shaped by the interplay between the agricultural lobby groups.

Yet, when assessing the impact of the fiscal impulses on the development of the Polish agriculture the key issue is the structure of the funds targeted at the sector. The EU accession let not only to a change in the scale of funds supporting agriculture, but also to the fundamental change in the structure of funds and types of policy instruments applied. We can distinguished between instruments precisely directed at specific aims as well as instruments that give farmers freedom in spending the resources received.

The whole policy mix and a set of both national and the EU policy instruments influence the de-

velopment of the agricultural sector in Poland. We can observe significant structural changes in the Polish agriculture. Yet, their scale seem to be more and more varied among Polish regions. Thus, the sector becomes more and more diverse.

The analysis of the fiscal impulses aimed at agricultural sector is still a complex issue as the sector is highly diversified and its production depends on the weather conditions. That is why the problems and barriers of measuring the fiscal policy's impact are augmented by the factors that are uncontrollable both by policy implementation authorities and farmers. These sector specific limitations to policy evaluation can be accounted for by analysing the policy impact in multi-annual perspective and not by looking into year-to-year changes in total output or production efficiency. Yet, it must be also kept in mind that in the case of agricultural policy instruments these are not only economic priorities that are the aims of the public intervention in the sector. As important are the environmental issues that are targeted by these instruments. Therefore, also changes in the environment should be accounted for in the future studies on fiscal impulses aimed at agriculture.

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