# EFFICIENCY OF EU FINANCIAL SUPPORT IN TERMS OF RURAL ECONOMIC DEVELOPMENT

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## Abstract

The main objective of the research was to assess the efficiency of selected instruments of entrepreneurship development in the rural areas, using a multi-criteria approaches. The study of policy efficiency involved descriptive and comparative analysis of the state and changes of private and micro-enterprise number in rural counties' as well as the simple regression analysis, utilized for the assessment of the impact of financial support scale on the county budget revenues and creation of new businesses and jobs. The above analyses were made for previous programming periods and use the based on CSO data and Local Data Bank for 2004-2013 for 1,529 rural counties. The structural and regional policies focused on the use of financial instruments generally have no positive impact on reducing inequalities in local development. But, does not mean the absence of the process of reaching the state of long-term equilibrium by counties with lower levels of development. All this data are presented on the context of macroeconomics changes in the whole economy.

**Key words**: EU policy, efficiency, policy measures, rural development, business development

#### Introduction

The professional literature contains a wide range of definitions of the term policy [Murzyn 2010], which depend on the approach applied, i.e. official and legal, behavioural, functional, rational or post-behavioural. However, it generally means the exertion of influence on various areas of human activity by specific public authority organs. In the case of the policy supporting business activity development, this is the intervention of the state and the European Union in the area of the production of private goods. According to the mainstream economists' opinion, this is an undesirable situation, since the only regulating factor should be the market. Due to the functioning market failures, such as externalities, information asymmetry, unemployment and lack of equilibrium, the European Union adopts the approach of active participation in the public sector in the development of business activity, particularly the sector of small and medium-sized enterprises. The official justification for the construction of the strategy and initiation of specific measures in this area is the equalisation of the conditions of competition. The key element of strategies to reduce poverty and create income and employment opportunities in rural areas is

multifunctional development and entrepreneurship development. Entrepreneurship is often conceived as innovation, creativity, the establishment of new organizations or activities, or some kind of novelty [Klein et al, 2010]. Entrepreneurship can be a vehicle for leveraging existing community strengths and diversifying local economies, while also challenging existing businesses to be more efficient and innovative.

Entrepreneurship in rural areas is finding a unique blend of resources, either inside or outside of agriculture. This can be achieved by widening the base of a farm business to include all the non-agricultural uses that available resources can be put to or through any major changes in land use or level of production other than those related solely to agriculture. Thus, a rural entrepreneur is some one who is prepared to stay in the rural area and contribute to the creation of local wealth. Moreover, the economic goals of an entrepreneur and the social goals of rural development are more strongly interlinked than in urban areas and relatively has large impact on a rural community [Nandanwar, 2011].

In general, the theoretical considerations suggest that any form of intervention, which may also include EU direct financial support to SMEs, slow down the efficient allocation of resources. Nevertheless, they can be a key driver for economic growth, as was the case in China. In accordance with Murrell [2005], the dual economy model plays such a role. As a matter of fact, the use of different intervention forms strengthens "marginal" efficiency. In relation to the New Institutional Economics, this means a temporary approval for a set of informal rights allowing for sub-marginal production. However, it provides social protection for entities which would lose the most due to reforms, i.e. transition to a purely market economy [Lau, Quian, Roland 2000]. As a matter of fact, the result is a slowdown in the said reallocation, but - according to neo-institutionalists, it allows to gain time to develop protection mechanisms for market transactions. Given the social aspect of the dual economy, it can be said that certain solutions can be applied also in Poland. In fact, the use of such mechanisms is well-founded in the Constitution of the Republic of Poland, which defines the state economic system as a "social market economy". Therefore, the main objective of the paper was to introduce come section of the efficiency assessment of selected instruments of entrepreneurship development in the rural areas, using an multicriteria approaches. In this case it was the assessment of impact of EU financial support on the local economy.

### 1. Methodical approach

The efficiency of regional and structural policy instruments to support the development of non-agricultural economic activities was assessed in respect of financial transfers from the EU budget through the Regional Operational Program (ROP), Innovative Economy Operational Program (IEOP), Human Capital Operational Program (HCOP) and others. While assessing the efficiency of financial support, both direct and indirect non-refundable support, which influenced the development of SMEs, was examined. Furthermore, the assessment of these instruments received by far the most attention in the study. However, such an approach was taken, because the EU budgetary period had finished, thus a need to assess the effects of the policy pursued in various aspects. The study of efficiency involved descriptive and comparative analysis of the state and changes of private and microenterprise number in rural counties' in various aspects determined by the scale of EU financial support for the development of entrepreneurship. To assess the external efficiency, also the method of the Stochastic Frontier Approach has been used (SFA). The analysis is also focused on the relationships between this support and the employment and unemployment in rural counties. The criterion for grouping was the median and quartile value of the support per one inhabitant in working age. Finally, the correlation and simple

regression analysis were utilized for the assessment of the impact of financial support scale on the county budget revenues and creation of new businesses and jobs.

The above analyses use the data from Central Statistical Office (CSO), Local Data Bank, for 2004-2013 for 1,529 rural counties. The population of this group of counties was without the units with own income in excess of the average value of income by more than 3 standard deviations. These were mainly counties obtaining substantial income from compensation for mining damage and those of typical tourist profile.

#### 2. Literature review

Active state policy [Landreth, Colander 2005] for the development of entrepreneurship, based on the use of a wide range of instruments [Wasilewski 2011], is justified primarily by market failures [Stiglitz, 2004] which result from under-utilisation of labour resources. This is unemployment which makes state institutions intervene in the allocation of resources by means of measures, such as support for training and career counseling or direct subsidies for running or launching own economic activity [Gancarczyk, 2010], etc. Furthermore, failure resulting from asymmetric information is important as regards support to SMEs. In the event of these failures, state intervention involves the reallocation of some resources from one group of entities to the other. Instruments for such transfer are taxes on the one hand, and on the other hand direct subsidies or subsidies in the form of public goods. In theory, such transfers are justified, given the decreasing marginal utility of goods.

If the transfer of funds deteriorates one's situation, Pareto efficiency does not improve. However, Kaldor-Hicks efficiency may improve. This approach aims at maximising the allocation of wealth or welfare expressed in money [Stringham 2001]. A general increase in welfare is justified, even if the situation of a certain group of persons deteriorates. Regardless of the approach to efficiency improvement, the benefits resulting from transfers should outweigh the costs. In general, the resulting net benefits are a measure of the efficiency of given allocation. However, the state making a social choice in the allocation of resources, which is not accompanied by Pareto efficiency improvement, must also take into account the loss of certain individuals or groups.

The assessment of the specific policy, including support for the development of the sector of small and medium-sized enterprises, may also be carried out in terms of the decentralisation of power, which is also one of the issues raised in the New Institutional Economics. The representative of this trend, Weingast, states, by adopting Hayek's assumptions on the significant importance of diversified information [Weingast, 2005] that authorities of the lower administration level have the better information about local conditions or preferences than the central government. For this reason, political decisions made at lower levels are better adapted to local needs. Admittedly, the author considers these relationships on the example of federalism and refers political decisions to the issue of the production of public goods, but his observations may be applied also to the assessment of the policy supporting the development of small and medium-sized enterprises in Poland. Some instruments of this policy such as, e.g. infrastructure development are a typical example of support by producing public goods. It also seems that support for the production of private goods, as a result of the policy pursued, will correspond to local needs to a larger extent.

To the issue of the assessment of the specific policy, the public choice theory also applies. Unfortunately, according to Clark and Lee [2013], who are the representatives of this trend, now in the economic studies we may notice a tendency to emphasise market failure and to conclude on this basis that this failure is a sufficient justification to take corrective action

by the government. Widely ignored is the issue of public choice. According to the abovementioned authors, the reasons for market failure also result in government failure. The policy pursued by the government may therefore lead to the improved economic performance, but it may also be harmful to the economy. In this aspect, the assessment of the policy, and even suggestions regarding pursuing a particular policy should take into account, on one hand, a possibility of revising market failure and, on the other, negative effects to which the process of its implementation may be exposed as a result of government failure to implement its process, or, in a broader sense, of state failure. Such formulation of the problem of the possible impact of the state on the market is, however, a kind of negation of the approach applied by behavioral economics [Clark, Lee 2013]. The economists of this trend assume that from a certain moment people start behaving irrationally [Ariely, 2008], due to which they cannot effectively pursue their interests in relations with the market without support on the part of the state. The public choice theory assumes that if we accept a thesis on the irrationality of market entities, before choosing a specific policy, it should be confronted with a thesis on the irrationality of entities of this policy.

## 3. Macroeconomic situation

Polish integration with the EU structures was a milestone which affected the acceleration of structural transformations in the entire national economy. The dynamics of this process resulted from, inter alia, the adoption in Poland of new solutions and regulations in the field of the economic policy, including the agricultural and trade policy, access of more than 505.7 million consumers to the market, inflow of public financial resources from the structural funds, cohesion policy and the CAP policy or the free movement of persons, goods and services.

In 2007-2013, a macroeconomic situation in the Polish economy was relatively stable (Table 1). In the same period, the GDP grew. Indeed, the world economic crisis of 2008 caused a slowdown, but GDP developments were positive throughout the period considered. The nominal GDP per capita grew by over 50% to reach about PLN 41 thousand in 2012. In the first half of 2014 Poland's GDP increased by 3.3% compared to the same period of previous year. At the same time, domestic demand grew by 5.1%. These data show an economic recovery when compared with the tough last year, when GDP grew by 1.6% (year/year) in the entire year and domestic demand dropped by 0.2% [Wigier 2014, pp. 41-55].

The growth rate was stabilised by EU structural funds and domestic demand. Since Poland's accession to the European Union in 2004 the country has come a long way. A strong support in this process has been and continues to be provided by the inflow of structural funds granted in the framework of the EU's cohesion policy. In the EU's 2007-2013 budget, the subsidies for Poland amounted to nearly EUR 68 billion, the highest sum among the EU funding beneficiaries. According to the Regional Development Ministry's data as of September 30 2014, since the launching of EU subsidies programs of the 2007-2013 framework, authorities and beneficiaries signed 103,370 contracts for the total sum of PLN 409.7 billion of qualified expenses, including co-funding on the part of the EU amounting to PLN 284.6 billion.

The factors stabilising the development rate were high investments, at the level of about 13-17% of the GDP value, inflow of financial resources from the structural funds, foreign direct investments (FDI) and internal demand. Poland has so far stood out in terms of FDI among the CEE countries. Strong internal demand and solid private consumption used to be named by economists as strengths of the Polish economy, helping the country to retain its economic growth even in the face of difficult conditions on international markets. The unemployment rate gradually decreased, from about 15-19% in the period preceding integration with the EU to about 10% in 2013. The inflation rate oscillated around the inflation target designated by the Government (from 1 to 4%). Poland is now the sixthlargest economy in the EU. Living standards more than doubled between 1989 and 2013, reaching 62% of the level of the prosperous countries at the core of Europe.

Specification	2007	2008	2009	2010	2011	2012	2013
GDP value in PLN billion (fixed prices of 2012)	1,349	1,420	1,443	1,500	1,566	1,595	1,603
GDP <i>per capita</i> (current prices in PLN thousand)	30.8	33.5	35.2	36.8	39.7	41.4	43.0
Dynamics of GDP changes [previous year = 100]	106.8	103.8	102.9	105.0	103.2	101.6	101.3
Share of investments in GDP [in %]	16.3	17.0	16.3	15.3	15.9	14.9	13.9
Inflation (CPI) [previous year = 100]	102.5	104.4	103.0	102.2	104.8	103.7	100.9
Unemployment rate [%]	11.2	9.5	8.2	9.6	12.5	10.1	10.3

Table 1. Selected macroeconomic indexes in 2007-2013

Source: Own elaboration based on the CSO data. Statistical Yearbook of the Republic of Poland, CSO, Warsaw, subsequent years and www.stat.gov.pl, access date 20.08.2014.

### 4. Efficiency of subsidies at local level

In the chapter dedicated to the methodology, it has been stressed that the subject of the study was 1,529 rural communities. In the years 2007-2013, those communes received about PLN 13.1 billion under various projects through the Regional Operational Programmes (ROP), Operational Programme Human Capital (OPHC), Innovative Economy (OPIE) and other programmes. Most of the funds were, however, transferred through the Regional Operational Programmes. For the measures of those programmes, which included both direct support for the development of economic activity as well as indirect support through infrastructure projects, nearly 63% of the total funds from the European Union budget were spent, allocated for the analysed rural areas.

In 2004, i.e. at the time of Poland's accession to the European Union, over 545 thousand private sector economic entities (employing at least 10 workers) operated in the examined area. Their number increased steadily until 2013, in which it reached nearly 712 thousand. Nonetheless, enterprise growth rates in rural areas in 2007-2013 and 2004-2006 were similar. It should be noted, however, that some instruments to support the development of economic activities in rural areas were also used in 2004-2006. Therefore, comparing certain economic changes during these two periods would, in principle, bring little to the analysis of the local efficiency of EU policy instruments. For this reason, the economic changes depending on the level of the support received. For this purpose, the counties were divided into quartiles, the boundaries of which are shown in the previous paragraph.

While analysing an increase in the absolute number of economic entities in county groups with different levels of financial support (Fig. 1), it can be concluded that the relative level of financial transfers from the EU budget played an important role in launching economic activities by physical persons. In 2007-2013, i.e. the effective period of the financial instruments concerned, a larger increase in the number of economic entities was observed in county groups with a greater level of support. Quartiles 1 and 4 are significantly different. Throughout the effective period of support, the number of these entities in the latter increased by as much as 6 percentage points more. At the same time, it should be noted that the number of economic entities grew more in county groups, in which the initial number of the entities was higher. Having regard to the increase in the number of private economic entities, EU financial support can be considered as a quite efficient instrument.



Figure 1. Increase in the absolute number of private economic entities in 2007-2013, in county groups with different levels of EU support per capita of working-age population

Source: Own calculations based on CSO data.

In 2007-2012, the share of the employed in the total number of working-age population decreased. However, in absolute terms, employment in rural areas increased by 10.7% (Fig. 2). This employment growth was observed in all county groups, regardless of the level of support. Nevertheless, it was greater in counties with a higher level of EU support. Research shows that the difference between extreme, in terms of the relative level of support, county groups was as much as 11 percentage points, meaning that public funds were a relatively strong driving force for the recruitment of new staff, although they were insufficient to create conditions, in which these growing labour resources would be fully utilised. It should also be emphasised that the fastest growth in employment was observed in counties, in which its level was higher. In view of the above, it can be concluded that the diversity of rural areas in terms of the utilisation of labour resources increases. Nonetheless, the criteria used to distribute public financial support foster a kind of rural economic polarisation.

During Poland's membership in the European Union, two characteristic periods in unemployment changes can be distinguished. In 2004-2008, there was a systematic and quite dynamic drop in the share of the unemployed in the total number of working-age rural population. In 2009, the financial crisis brought the upward trend that lasted until 2013. The unemployment rate increased relatively in all counties, regardless of the level of the support obtained from the EU budget. Furthermore, there were no significant differences in the level of unemployment among county groups with different levels of EU assistance. However, it was noted that the smallest increase in the share of the unemployed in 2007-2013 was observed in counties with the highest level of financial support. This would suggest that only a high level of EU funds slowed down unemployment growth. Therefore, the use of direct and indirect financial support as an instrument to reduce unemployment can be efficient, but it cannot be applied on a wider scale at both EU and national levels due to budgetary constraints. However, it can be a spot-intervention instrument.



Figure 2. Changes in the number of the employed in 2007-2012, in county groups with different levels of EU support per capita of working-age population

Source: Own calculations based on CSO data.

Analyses show that the relative level of the support obtained significantly contributed to increasing municipal budget revenues from both real property and income taxes in relative and absolute. Own real property tax revenues per capita in county groups with the highest level of support increased by as much as 7.6 percentage points more than in counties in which this support reached the lowest level. As regards personal income taxes, these relations were also observed, but the difference was only 4.2 percentage points. Even greater differences between extreme county groups were reported in terms of revenue growth in absolute terms. In fact, real property tax revenues in county groups with the highest level of support increased by as much as 13.1 percentage points more than in the group with the least resources secured. As regards an increase in personal income tax revenues, this difference was slightly smaller, but still reached as much as 8.2 percentage

points. On these grounds, it can be concluded that the larger level of EU funding accelerates the growth rate of own municipal real property tax and personal income tax revenues.

The impact of the level of support on the level of own revenues is also confirmed by research carried out using the correlation and regression analyses. The correlation coefficient between the level of funds transferred to counties in 2007-2013 and municipal real property tax revenues obtained in 2013 was 0.35. As for municipal personal income tax, it was 0.32. Indeed, both correlation coefficients are not too high, but the tests carried out confirmed their significance at 0.05. In turn, simple regression models, developed in both cases, revealed that the support used resulted in a measurable increase in income tax revenues. The models show that every PLN 1 of gained support led in 2013 to an increase in real property taxes by PLN 0.04, while in personal income tax revenues – by PLN 0.05. Both determination coefficients reached just 0.1, but were statistically significant. Thus, the models developed explain this increase in revenues thanks to EU support only in 10%. Nevertheless, they confirm the important role of this support in improving the economic situation.

The correlation analysis and simple regression models were also used to examine the relations between the level of support and an increase in the number of economic entities in rural areas. Correlation coefficients between the level of support in 2007-2013 and the number of private economic entities, the number of micro-enterprises and the number of the employed in 2013 stood at 0.33 and were significant in all cases. In turn, the simple regression models developed explained an increase in the number of private enterprises, micro-enterprises and the number of the employed as a result of the transfer of EU funds at a very similar level as in the case of real property taxes or personal income taxes. These models were used to estimate amounts of support, which gave rise in 2013 to an additional private economic entity, micro-enterprise or encouraged the employment of an additional staff member. In accordance with these estimates, the greatest amount of support was crucial to the establishment of an additional private economic entity (over PLN 150 thousand). Over PLN 20 thousand less was necessary to launch a new micro-enterprise, as a result of using the policy instruments concerned. However, the creation of an additional job with the help of public funds required spending nearly PLN 67 thousand.

From the Stochastic Frontier Analysis (SFA) carried out, in which transfers to rural communes under the ROP, OPIE and OPHC were used as inputs and outputs were newly established enterprises run by natural persons, it results that the technical efficiency of support was quite low (Table 2). With the transferred funds, only less than 37% of entities were established, which, in theory, could have been established with that scale of transfers. An improvement in the technical efficiency of scale is, in fact, slightly more than 63%. Nevertheless, financial support from the EU budget has a significant positive impact on the formation of new entities. The efficiency of its use in this direction, however, is quite diversified in terms of communes. The coefficient of the variability of technical efficiency is in fact almost 68%. The obtained results of estimating technical efficiency should be treated as an indication of the insufficient use of the potential associated with EU aid funds in creating entrepreneurship in rural areas.

 Table 2. Descriptive statistics of technical efficiency measures and scale of support from the European Union budget (SFA).

Variable	Mean	Standard deviation	Max	Min	Median	1 quartile	3 quartile
Technical efficiency measure	0,367	0,249	0,996	0,081	0,268	0,190	0,445
Scale efficiency measure	0,631	0,175	1,000	0,280	0,604	0,504	0,752

Source: Wasilewski, A. (ed.). 2014. Efektywność instrumentów polityki regionalnej i strukturalnej wspierających rozwój pozarolniczej działalności gospodarczej na obszarach wiejskich. Prace Programu Wieloletniego no 108, IERiGZ-PIB, Warszawa.

# Conclusions

Allocating resources by means of policy is negatively assessed, in particular since these funds are obtained, according to theorists, primarily by rent seekers, rather than efficient entities. Nonetheless, as representatives of certain economic trends believe, allocating resources by means of policy may also have positive consequences. This view is shared especially by dual economy proponents. In their view, all forms of interventionism, which include subsidies for the activities of enterprises, slow down the allocation of resources to the most efficient economic entities. Nevertheless, they thus provide time for the weakest entities to adapt to market requirements.

However, based on empirical research on the impact of EU funds, which can be classified as instruments to directly or indirectly support the development of entrepreneurship in rural areas in 2007-2013, on economic processes, it is difficult to set a timeframe within which they will be reallocated to the most efficient entities. As a point of fact, they bring both measurable and positive economic effects in the current period. Analyses show that the higher level of support from the EU budget accelerates an increase in the number of private enterprises, micro-enterprises and the number of the employees. Moreover, it slows down the processes of growth in the number of the unemployed. Nonetheless, the economic situation in a particular area can be improved thanks to the transfer of a given amount of public funds. Based on regression analyses, it can be said, for example, that the establishment of an additional private economic entity in a rural municipality takes nearly PLN 154 thousand acquired under different operational programs. As regards a micro-enterprise, it is almost PLN 132 thousand, while the creation of one job requires spending nearly PLN 67 thousand of public funds.

The positive impact of financial support from the EU budget on the local economy is also proved by an increase in municipality's local revenues. In fact, municipalities obtaining relatively higher support enjoyed a larger increase in real property tax and personal income tax. In other words, the transferred funds generated a rise in both local community assets and population incomes, thus increasing the said municipal tax revenues. Regression analyses reveal that every PLN 1 of public support, gained in 2007-2013, led in 2013 to an increase in municipal real property tax revenues by PLN 0.04, while in the case of municipal personal income tax revenues – by PLN 0.05.

When considering the possibility of using public financial support as an instrument for rural economic development, certain negative aspects should be kept in mind. In 2007-2013, relatively higher financial resources were transferred to more economically developed municipalities. Although they had positive effects, i.e. they accelerated economic development, their distribution under the same conditions can lead to the further diversification of rural municipalities in terms of both the level and rate of development. Thus, the distribution criteria applied neither foster the implementation of balanced rural development, nor promote bridging the gap in this development. However, they can be retained if another national development concept is pursued, such as establishing the so-called central units or growth poles. What is more, the positive effects of public financial support can be observed in the short term, i.e. during the period of transfer. In accordance with the existing theory, their positive impact on the local economic situation is supposed to weaken in the long run. Having ceased the use of this form of assistance, other instruments under policy to support the development of entrepreneurship are to play a greater role. In this case, fiscal policy and reduced bureaucracy can gain importance.

From the Stochastic Frontier Analysis (SFA) carried out, in which transfers to rural communes under various operational programmes financed from the EU funds were used as inputs and outputs were newly established enterprises run by natural persons, it results that the technical efficiency of support was quite low. With the transferred funds, only less than 37% of entities were established, which, in theory, could have been established with that scale of transfers. An improvement in the technical efficiency could be contributed to by a significant increase in the scale of transferred support.

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