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Fiscal Adjustment and Public Finance Management in the Euro Area

Introduction

Fiscal adjustment, defined as reducing the level of fiscal deficit, represents a major correction in fiscal policy and, consequently, it cannot have zero impact on the state of the economy. A change in the principal fiscal parameters (public sector balance, public debt dynamics, public revenues and spending) may be the outcome of either discretionary activities or the operation of the so-called automatic stabilizers, which should spontaneously adjust the fiscal balance to the business cycle. Typical fiscal balance indicators, such as public sector fiscal balance and public debt to GDP ratios, fail to give a reliable picture of changes implemented in the public policy, as they are strongly dependent both on the fluctuation of the nominal and real GDP and on the amount of interest payments, which are usually beyond the control of those in power. From this point of view, it seems appropriate to use the indicator suggested by Alesina, Perotti, and Tavares (1998), which is the change in the primary budget balance. This has a self-evident advantage of excluding the impact of costs of debt servicing on the budget balance. Since we are mostly interested here in public spending management models, another fiscal policy adjustment indicator that we will use is the dynamics and structure of public spending, enabling us to assess whether the instruments for managing public expenditure have an impact on the social effects of public sector reforms.

In the typical Keynesian model of economy, fiscal adjustment should, at least in the short-term, have recessionary effects, since both reduced public spending and increased taxes decrease the current flow of aggregate demand, which must affect the economic dynamism (Nuti 2014, Łaski 2009). However, there are considerable concerns that a simple aggregate demand model should not be applied to the current circumstances in which present-day governments operate.

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Tanzi (2012) claims that the current state of public finance (high public debt) and the demographic situation have a major impact on economic entities' behaviors, mainly through the effect of household expectations of future taxes. Also, the crisis of 2008 was not a typical recession resulting from aggregate demand fluctuations in the business cycle, but it had clearly structural reasons (Moździerz 2016). This is why expansive fiscal policy is not very effective and why fiscal adjustment does not always involve high costs defined as decreased GDP dynamics.

Quantitative research (Alesina et al. 1998, Perotti 2011, IMF 2012, 2013) indicates that it is possible to demonstrate examples of pro-growth fiscal adjustment; thus, decreasing fiscal imbalance can lead to economic recovery. If the decrease in the scale of fiscal imbalance is long-lasting, after several years there is no deterioration in the debt and deficit indicators because the adjustment mostly involves the spending side rather than raising taxes, and the increase in public revenues is usually temporary in nature. Another important thing is the structure of spending: what needs to be reduced is current expenses, mainly transfers and wages in the public sector rather than public investment, where the highest spending multipliers are recorded.

There has been a marked increase in the interest in the effects of structural changes in the fiscal policy, which should come as no surprise, as most highly developed countries must make an effort to reduce fiscal imbalance. The deficit and public debt levels were relatively high in many countries even before the financial crisis of 2008 broke out. The need to mitigate the costs of the crisis (the functioning of automatic stabilizers and discretionary measures, such as bailout of the financial sector) greatly increased the scale of public debt, even where budgetary surpluses were recorded before the crisis, which was the case in both Spain and Ireland. Contrary to commonly held opinions, the need to reduce budgetary imbalance is not mainly imposed by the cost of financing the public debt. Dell'Erba, Mattina, and Roitman (2013) estimate that only ca. one third of the cases of fiscal adjustment undertaken were enforced by financial markets, either refusing to finance a debt or imposing such high costs of finance that governments were forced to significantly reduce their borrowing needs. Therefore, as a rule, reducing the scale of imbalance of public finance was either a conscious decision of respective countries that are obliged to meet relevant debt and deficit levels, as in the EU, or a way to address the demand of societies (taxpayers) who realize the negative consequences of public debt.

The aforementioned quantitative research into the effects of fiscal adjustment is limited to the analysis of macroeconomic parameters – how GDP dynamics is affected by a given size of fiscal adjustment. The empirical material relies only to a limited degree on the experience of recent years and, consequently, it does not account for the specifics of eurozone member states. Perotti (2011), in the analyzed cases of expansive fiscal adjustment, shows the cases of Denmark and Ireland in the 1980s, as well as those of Finland and Sweden in early 1990s. In all of the cases indicated, the positive response of GDP dynamics to reducing the budget deficit was, to a great extent, a result of a change in macroeconomic policy parameters. Each of these countries had its own currency at the time, so fiscal policy

tightening could go hand in hand with the loosening of monetary parameters: the central bank's interest rates fell and the exchange rate weakened.

Such changes in the monetary policy are not possible in eurozone countries, which is why these economies are a good research material for assessing the effects of corrections in fiscal policy. It can be pointed out that, despite a single level of the central bank's interest rate across all of the euro area, the cost of capital in different member states is not the same, which is reflected, for example, by the different yield of respective governments' treasury bonds. The situation is similar for the exchange rate – nominal changes of the exchange rate in monetary union member states are impossible by definition, but there may be fluctuations of the real rate, which stem from differences in the inflation rate between various countries. However, these circumstances do not change the fact that fiscal policy is the only area of macroeconomic policy left in the control of eurozone member state authorities, which makes it much easier to analyze quantitative relationships; the economic impact of running a given fiscal policy depends nearly exclusively on fiscal parameters (debt, balance, public spending dynamics, and structure) and on the quality of the public finance system, which is a mechanism for translating political decisions into the state of economy and society.

There is no consensus among scholars and policy makers about optimal room for active fiscal policy in the country which is euro area member. On the one hand, it is necessary to ensure convergence of the basic fiscal parameters (especially budget balance) that contribute to the reduction of differences in GDP dynamics what enables conducting monetary policy that will be optimal for the entire euro area.

On the other hand, even before the outbreak of the financial crisis within the eurozone, it was indicated (Alves and Afonso 2007) that the acceptable fiscal deficit levels, with the impossibility to use the monetary policy, are too low to efficiently absorb the asymmetric shocks, whereas the adjustment required in the convergence programmes will have a strong pro-cyclical impact.

The course of the crisis in the eurozone largely confirmed these fears. The imposed fiscal adjustment in the countries that went through the debt crisis deepened the recession and hindered financing of the public debt through a fast growth of the difference in the market rates of the German Treasury securities and those of the so-called peripheral countries (Dallago 2016, Moździerz 2015, Stiglitz 2016). So, there are serious arguments for more Keynesian approach in macroeconomic policy of eurozone what means a bigger tolerance for loose monetary policy conducted by member states (Osiatyński 2016).

The goal of our study is to evaluate the extent to which the advanced implementation of performance budgeting (PB) instruments contributes to conscious public finance management, as to achieve the assumed social and economic effects at given levels of public spending. Usually, the effects of public spending are assessed in the period where expenditure is increased, e.g. when either implementing a given project or increasing its scale. PB instruments should be a useful tool also in a period when, for various reasons, spending must be curbed. We assume that countries that are advanced in using quantitative assessments of public policy effects should be

quite familiar with the effects of different spending levels on the condition of respective areas. Fiscal adjustment, defined as fiscal deficit reduction, should have then relatively low social costs, as those in power, having access to detailed data on the effects of public spending, would reduce it in such a structure as to minimize the negative impact of the reduced expenditure on the society (Łaski and Osiatyński 2013).

We should verify, in quantitative terms, the following hypotheses:

1. In countries that are highly advanced in implementing PB, public spending adjustment (reduction) should be largely discretionary (different scope of cuts in various areas) rather than purely statistical, with all spending categories reduced by a given amount.
2. In economies where the public finance system is based to a greater extent on the PB principles, reducing public sector imbalance by cutting public spending should have lesser negative effects for society than in countries that use PB instruments to a lesser extent.

The metrics of negative effects will include: GDP dynamics, changes in the poverty rate, and income stratification. We assume that the above metrics are clearly of interest to those in power, so they should run a policy that leads to the lesser possible deterioration of such metrics. Hence, the question is whether the use of PB instruments indeed provides instruments for running a specific discretionary public finance management policy or is, instead, limited to the public finance sector's presentation issues.

The level of advancement of PB implementation is identified based on a survey conducted by the OECD (2015). Individual countries are evaluated by indicating whether instruments from respective areas are used in public finance management:

- general guidelines and definitions for the PB process,
- standard template(s) for reporting performance information back to the Central Budgetary Authorities (CBA),
- standard performance rating system,
- standard set of performance indicators and/or targets,
- standard ICT tool application for entering and reporting performance information to the CBA.

Affirmative or negative answers help classify countries on the scale from 0 (either PB instruments are not used in any area or a given country does not use any of the principles of PB) to 5, where all the principles of PB are applied in the practice of public finance management.

1. Transparency and principles of public finance management

The quality and transparency of the public finance system are undoubtedly of significance to the assessment of the actual situation of state finance and of the shape of fiscal policy. The scale of complexity of public systems and ambiguities in the rules of macroeconomic statistics make the analysis difficult. This can be seen, first and foremost, in the discrepancies between data relating to the budget balance and to

its impact on the level of public debt, which should be strictly correlated. This is not a rule, however, as there is a whole range of possible ways to classify transactions where the level of public debt is not directly related to the current budget balance, and vice versa. Such discrepancies make it very difficult for domestic (taxpayers, beneficiaries of public goods) and foreign entities, such as international organizations or buyers of securities, to assess a given government's fiscal policy. Comparative studies (Weber 2012) confirm that countries with the highest transparency of public finance record the lowest discrepancies in the data describing the state of public finance, i.e. the level of debt directly follows from the budget balance (EC 2015, p. 23). Hence, one can see that transparency of public finance has a fundamental impact on the reliability of research into the effects of fiscal policy, as it safeguards the reliability of principal figures that describe the state of public finance.

In the literature, there is considerable confusion about the use of the term 'performance budgeting' (PB) – there is no consensus either as to the definition of the term itself or as to the major goals of using PB techniques. Public management inevitably combines elements of several social sciences, such as economics, finance, management, political science, or social psychology and sociology, which is why representatives of various sciences whose area of study includes the functioning of the public sector have different approaches as to how to assess the functioning of the public sector. It seems that the simplest definition of PB is presented by OECD (OECD 2012a, p. 7), where it is defined as "budgeting that links the funds allocated to measurable results". Such a definition is self-evident at first glance, but 'budgeting' can be interpreted as different things, e.g. as creating a budget (defining the allocation of funds to respective purposes, institutions and areas), as presentation, or, last but not least, as an assessment or evaluation of the way public funds are spent. The objectives of introducing new methods of public finance management are also varied, as they can include improved allocation of resources (distribution of funds between different areas and institutions), efficient and effective functioning of respective institutions, and greater transparency of the public finance system, which is meant to enable objective assessment of public policies. Robinson (2016) points out that the aforementioned theoretical questions, combined with the known problems with measuring the effects of public policies,[1] make it very difficult to clearly establish whether PB is an effective method of managing the public sector. Utz (2010), in his study combining theoretical discussion and insights from interviews with Swiss public managers, shows that the most important channel of increasing efficiency should be a higher independence of managers, which goes with changing the model from an input-based to an outcomes-based one.

[1] The biggest problem is the issue of measuring the effect of public policies. While it is possible to identify, with relative precision, the quantitative products and results of public institutions' activities, the effect, or the desirable change in a given domain, is very hard to measure unambiguously and, at the same time, there are objective doubts as to whether the change observed is the result of public sector activity or whether other factors, largely independent of the state, play a more important role. Another problem analysed by Eisenkopf (2009) is the agency problem – the choice of indicators is biased by public managers who are willing to show the efficiency of their institution.

According to OECD surveys, the results of which were published in 2007, 2011 and 2016, nearly all OECD countries, i.e. 29 out of 33 countries surveyed, declare that, when analyzing the level of public spending (program) implementation, they use information on products (i.e. quantity, quality, value of goods, and public services), and on the results defined as the impact on social and economic indicators. In addition, it follows from the surveys that 24 countries use synthetic measures for products and results, and in 12 countries other forms of information on non-financial effects of the public tasks executed are presented. What is of much greater importance, however, is the issue of how the efficiency information is used by public administration. The data collected indicate a limited use of such information. For 19 countries, efficiency information is used to provide a rationale for the existing allocation of funds. Meanwhile, efficiency information is used in 18 countries to set goals and to manage programs, and 15 countries indicated its utility in reviewing plans and programs. The results of OECD surveys indicate that a direct impact of efficiency data on the allocation of public spending is declared in the minority of the 33 OECD countries surveyed. When asked about the consequences of using efficiency information, the ability to make changes within programs was indicated in 12 cases, changes in allocations between programs were indicated in 10 countries, and only 9 countries reported that the effects achieved contributed to reducing the spending.

The experience of OECD countries also indicates discrepancies between the object of measurement and what can be managed in practical terms. According to the information acquired from an OECD review, another major problem is the adequate response to efficiency being insufficient compared to the one planned. Depending on the structure of tasks used by a given national administration, the capabilities for measuring the results of tasks and the accuracy of that measurement may vary. Oftentimes, despite years of experience, the final results for some diverse public tasks are hard to either pinpoint or quantify.

In Poland, the first attempts at introducing performance budget were taken by local government entities (among others Kraków, Lublin, Szczecin and Poznań in 1990s). Meanwhile, at the central level, the process of introducing performance budget was initiated in 2006 at the Chancellery of the Prime Minister, where the first methodology of performance budget was developed and the model of performance budget was prepared for some budget parts. The areas and entities covered as well as the performance budget methodology were systematically broadened and improved as part of the implementation process, which has been coordinated by the Ministry of Finance since 2008.

It has been assumed that the objective of phase I of the work would be to implement a budget referred to as presentation or performance budget (according to the three-level OECD classification, it is level one). In this model, the expenditure structure is presented based on performance, usually as a supporting document for legally binding acts, which helps increase the transparency of public spending, and improve the quality of the debate on the state-wide spending policy (Postula 2018).

The future of performance budget in Poland remains an open-ended issue, while the present debates and discussions, as well as actions and decisions, often call into question even the fundamental foundations of the work to date, in the search of new, more optimum solutions. It's worth emphasizing that many major issues related to performance budgeting are also regularly called into question in OECD countries. There is a constant quest for the best methodological solutions to maximize usability and increase the functionality of this tool in public finance systems of respective nation states (Owsiak 2018, Lubińska 2010). OECD is conducting comparative research (survey) consisting in running questionnaires to analyze the practical application of this tool worldwide.

The cited outcomes of the OECD review allow the opinion that, admittedly, the efficiency assessment is used in managing public programs, but it does not represent a decisive criterion in decisions on public funds' allocation. On the other hand, however, data from the OECD review indicate that the efficiency information has quite an important place in public management, which is often denied in discussions. Indeed, decisions on public funds' allocation are eventually made based on a set of criteria including efficiency data, if available. Lack of this information greatly lowers the quality of public management processes (Kelly and Rubin 2005, p. 584).

The surveys conducted by OECD reveal that governments are more and more likely to include efficiency information in the materials they present. One of the goals of such measures is to "promote" administrators who achieve better efficiency results, while also aiming to increase the transparency of public spending. In OECD member countries, there are major differences in the approach, with no consensus on the optimum management by objectives system to be used. This is the case even though OECD assesses the task-based budgeting system in several categories. Unfortunately, the results of surveys give direct arguments for the claim that most OECD member countries present efficiency information while rarely using it in the allocation of funds.

When analyzing OECD surveys, it is difficult to spot any direct measures taken by countries to increase the importance of management by objectives in the process of allocating public funds and ensuring accountability for the implementation of public tasks. When it comes to EU member states, this direction was to be expected, not only due to the growing awareness of the need for fiscal consolidation but also due to the fact that relevant regulations had been introduced at the EU level. Indeed, the Council Directive on requirements for budgetary frameworks of the Member States (hereinafter: the directive) was passed in 2011.[2] In accordance with the definition adopted in the directive, budgetary frameworks are meant as a set of arrangements, procedures, rules, and institutions that underlie the conduct of efficient budgetary policies of general government. The directive systematizes the scope of frameworks as follows: systems of accounting and statistics, forecasting procedures, numeric fiscal rules, budgetary procedures, medium-term budg-

[2] Council Directive 2011/85/EU of 8 November 2011 on requirements for budgetary frameworks of the Member States, OJ L 306. 23.11.2011, p. 41.

etary frameworks that extend the horizon for fiscal policy-making, transparency of the processes, and relationships between public authorities across sub-sectors.

However, the wording of either convergence programs or stability programs prepared by European countries does not confirm that the quality and measurability of the effects of public spending is a significant area of interest for fiscal authorities. In this wording, it is hard to find any information indicating the use of efficiency data as part of the measures aimed at decreasing fiscal imbalance.

A certain lack of consistency can be observed also in the approach to the use of quality information in the OECD. In the OECD report published at the end of 2012, which assessed the condition of member states' public finance, a classification of respective countries was presented in terms of the need for fiscal consolidation (from the highest to the lowest, or lack thereof) (OECD 2012b, p. 24). However, the assessment did not take account (or, at least, it was not included in the publication) of the qualitative approach to the allocation of public funds as an element of the consolidation process used.

The times of crisis are the best test of efficiency and utility of economic policy instruments. From this perspective, initial observations indicate that the set of measures referred to as PB has not really proved useful in the period where the pressure on public spending efficiency should be extremely high. Objective circumstances force respective governments to limit the overall level of public spending in such a way as to preserve the funding for priority public tasks and to decrease expenditure mainly where it brings the weakest effect. Robinson (2016), upon reviewing changes in OECD countries' public finance systems, which were enforced by deteriorating budgetary balance at the time of financial crisis, observes that both the objectives and instruments of fiscal adjustment utterly overlook the instruments of PB. The desirable structure and prioritization of spending is not indicated, and there is no analysis of the consequences that a reduction of expenditure will have in respective areas of the state activity. Objectives are set in purely quantitative terms, at an aggregate level, i.e. what is formulated is the target level of fiscal balance (the amount of public deficit and debt), as well as the overall level of spending and the necessary scale of cuts (Cangiano et al. 2013, p. 49). Instruments to achieve macroeconomic objectives include mechanisms such as imposed spending limits or incorporating the so called fiscal rules in the legal system (e.g. quantitative public debt limits).

2. Results of quantitative research

The relatively small sample (19 countries[3]) and the short timeline, i.e. the years 2008–2016, give rise to reasonable concerns as to the actual significance of the quantitative correlations revealed; however, some regularities can be noticed,

[3] Baltic states, i.e. Lithuania, Latvia and Estonia, were not yet eurozone members in 2009, but their respective currencies were pegged to the euro, which, from the perspective of monetary requirements, is nearly tantamount to membership of the monetary union.

Table 1

Fiscal adjustment, social and economic indicators, and the level of advancement of PB implementation in euro area countries

Country	Primary fiscal balance 2009 (% of GDP)	Primary fiscal balance 2016 (% of GDP)	Primary balance change (percentage points)	Average GDP dynamics 2009–2016	Change in Gini coefficient 2009–2015 (in points)	Change in poverty level 2009–2015 (percentage points)	Advancement in PB
Belgium	–1.6	0.3	1.9	0.8	–0.2	0.9	0
Germany	–0.6	2.2	2.8	1.1	1.0	0.0	0
Greece	–10.1	3.9	14.0	–3.7	1.1	8.1	0
Cyprus	–3.1	3.0	6.1	–0.8	4.1	5.4	0
Latvia	–7.6	1.1	8.7	0.2	–2.1	–7.0	0
Lithuania	–7.9	1.7	9.6	1.0	2.0	–0.3	0
Luxembourg	–0.3	1.9	2.2	2.6	–0.7	0.7	0
Malta	0.0	3.2	3.2	3.8	0.7	2.1	0
Portugal	–6.8	2.2	9.0	–0.5	–1.4	1.7	0
Finland	–1.2	–0.8	0.4	–0.5	–0.7	–0.1	1
Spain	–9.3	–1.7	7.6	–0.2	1.7	3.9	2
France	–4.8	–1.5	3.3	0.6	–0.7	–0.8	2
Netherlands	–3.4	1.5	4.9	0.5	–0.5	1.3	2
Ireland	–11.8	1.7	13.5	4.7	1.0	0.3	3
Italy	–0.9	1.6	2.5	–0.7	0.6	3.8	3
Austria	–2.2	0.5	2.7	0.6	–0.3	–0.8	3
Slovenia	–4.6	1.4	6.0	–0.2	1.8	2.1	3
Slovakia	–6.4	0.0	6.4	1.9	–1.1	–1.2	3
Estonia	–2.0	0.4	2.4	0.8	3.4	0.8	3

Source: Eurostat.

Table 2

Correlations of public policy outcomes for groups of countries with different levels of advancement of PB implementation

Correlation of public policy outcomes and PB advancement	PB1	PB1*	PB2	PB3	PB3 without Ireland
Fiscal adjustment vs. GDP dynamics	–0.78231	–	–0.98805	0.90912	0.37566
Fiscal adjustment vs. Gini dynamics	0.04931	–	0.95480	–0.11900	–
Fiscal adjustment vs. change in poverty	0.24196	–	0.99636	–0.24216	–

* There is only one country with the index of 1, so there is no point in calculating a correlation here.

Source: own calculation based on Eurostat data.

and it is worth either trying to verify them in the future or taking account of other research methods, which we try to do later in this paper.

The correlation in the last column was calculated without taking Ireland into account because the country's GDP dynamics are very high (in 2015, GDP grew by over 25%), which reflects however a high difference between GDP and GNP rather than real output growth. This results from the fact that Ireland, being a tax haven, is a place of formal registration of many companies. Those "abnormal" results as to GDP and the small sample cause the entire correlation to be greatly distorted.

As can be seen, these simple quantitative correlations allow a couple of conclusions:

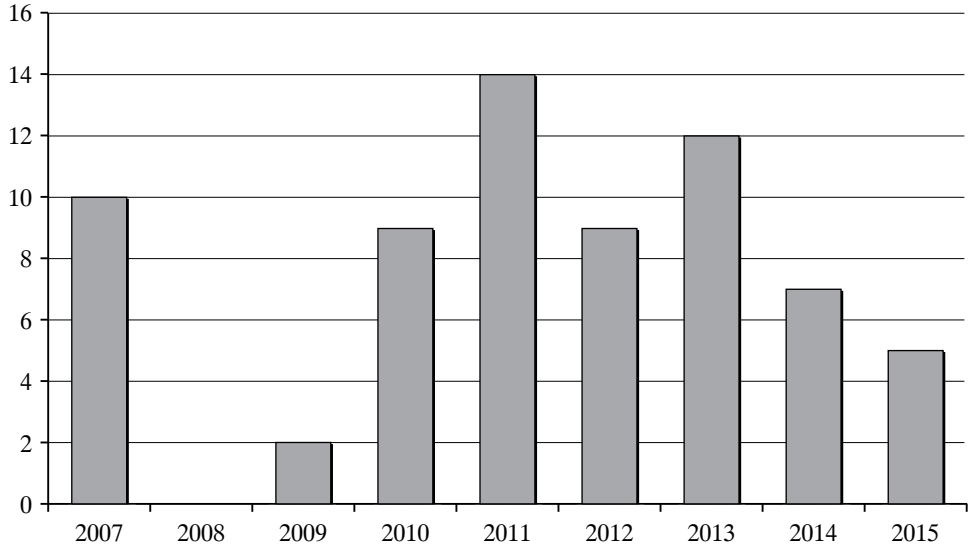
- Countries where PB is relatively widely applied in public finance management achieve much better results than do economies where PB instruments are not used.
- This can be seen most of all in the impact of fiscal adjustment on GDP dynamics: countries that are advanced in PB implementation achieve a positive correlation between the scale of adjustment and GDP dynamics, i.e. fiscal imbalance reduction leads to faster growth in those countries (even when Ireland is excluded from the sample), contrary to those countries with a lesser or zero use of PB, where the correlation is strong and negative, i.e. fiscal adjustment has strong recessionary effects.
- The situation is similar for the effect of fiscal adjustment on income inequality indicators and the scale of poverty: countries that apply advanced PB methods can combine budgetary imbalance reduction with an improvement in social indicators, while the opposite is true in the other cases, i.e. an improved condition of public finance comes at the cost of an increase in poverty and income inequalities.

- The above comments require thorough reflection, since a clear lack of cohesion can be seen in the presented calculation results, namely, correlations for the group of countries with an index of 2 as regards the level of advancement of PB implementation. This group of countries gets much 'worse' results (high correlations that go in an undesirable direction) than does the group of economies that use no PB instruments. However, it needs to be emphasized that this group is exceptionally small (only three countries), so the quantitative correlations may be misleading and may result from the specificity of those countries.

More sophisticated methods of quantitative analysis were used to capture other links – details of the model are shown in the Appendix. The goal of the study is to check the extent to which fiscal adjustment is related to active management of the public spending structure, i.e. the extent to which a change of fiscal imbalance is related to the dynamics of respective spending categories.

Figure 1

Number of countries with fiscal adjustment bigger than 0.5% of GDP in a single year



Source: own elaboration based on Eurostat data.

A decision was made to use models for panel data. Panel data contain variables observed in at least two dimensions, e.g. spatial and temporal (many objects observed in many periods). Panel data can be analyzed using classical least-squares method estimation, fixed effects modelling, and random effects modelling (Gruszecki 2002, p. 47). The importance of panel models is emphasized by Griliches and Intriligator (2007). The wide use of panel models in econometric analyses is also presented by Baltagi (2005). To achieve that goal, analyses were conducted on panel data (balanced panel), with model panels built using the generalized maximum likelihood estimation method, a fixed effects panel model, and a ran-

dom effect panel model (it follows from the experience to date that this model is not suitable for the data used, but there has been no attempt to use it).

First and foremost, an attempt was made to identify the factors or types of expenditure that have an impact on the scale of fiscal adjustment in the countries studied. This was a point of departure for further analysis regarding the impact of performance budget on fiscal adjustment because, as mentioned earlier in this article, the process of understanding and implementing this tool varies (sometimes it is partial and only refers to a specific group of expenditures listed in COFOG database).

The point of departure for the analysis was the scale of fiscal adjustment in the period analyzed, which is presented by the data provided in Figure 1. In the model being built, this was an exogenous variable.

The results achieved also indicate that the factors that drive the level of fiscal adjustment in the countries analyzed can be divided into stimulants and de-stimulants, which helps determine the strength and direction of the impact of specified variables on the fiscal situation. This allows streamlining the finance management process and focusing on measures that help improve the financial situation of the countries analyzed as regards fiscal adjustment. A higher share of safety expenditure can be classified as one of the success determinants for fiscal adjustment in the countries analyzed. The increase in those variables has a positive effect on the probability of exceeding 0.5 percentage points of fiscal adjustment. In the process of managing public funds and shaping fiscal adjustment instruments on the spending side, special attention should be given to this group of spending categories in the eurozone countries analyzed.

There are no clear quantitative evidences that advancement in using PB tools goes together with more active spending policy. The model applied allows us neither to confirm nor to disprove if particular government is using PB tools to manage its spending according to its outcomes. However, they prove the hypothesis that fiscal adjustment, in the short term, hardly can be modeled. That is especially the case of two expenditure groups of spending: defense, and housing and community amenities – they are both fixed and cannot be an element of the fiscal consolidation process in the short run.

Conclusions

Economic and social costs of fiscal adjustment are quite big in some eurozone countries, as can be judged according to the scale of GDP decline and huge increases in unemployment rate experienced by, for example, Greece and Spain. Despite having the same macroeconomic conditions (central bank interest rate and exchange rate), there are big differences between eurozone economies in the social cost of adjustment, which can be measured as growth in income inequalities and the size of poverty level. The obvious reason for these differences should be the quality of public finance management – countries that are more advanced

in implementing modern tools of public management should be able to minimize the social cost of budget rebalancing. Some basic quantitative exercise seems to support this statement: economies that are most advanced in using PB tools show much better results in income distribution and poverty level.

A very short time period and a limited sample size do not allow us to draw general conclusion on the relationship between the use of PB tools and ability of the public sector to minimize cost of public expenditures cuts. A more sophisticated research method based on a bigger data pool does not support the statement that the use of specified goals and measured outcomes of public policies, which are the most important tools of PB, determines conducting active policy by making big changes in the public expenditures structures what would suggest that priorities of public policy have been chosen. There is no significant statistical proof that countries advanced in implementing PB tools conduct more active policy meant as a change in the expenditure structure. A common approach to public expenditure management during a period of fiscal adjustment is rather "to cut across the border", just to fulfill the goals of fiscal strategy based on general measures like public debt, budget deficit, or total level of public spending. To sum up, the PB method of managing public finance has obvious advantages, so it should be especially useful in periods of fiscal adjustment. The results of our preliminary research show that real policy is conducted in a much different way.

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Appendix

Table A1
First estimate of the model

Variable	Factor	Std. error	*t*-statistics	*p*-value	95% confidence interval	Var.
EXP_P	–0.65163	0.60126	–1.08	0.2785	–1.83007	0.52682
PUB_SER	–0.04402	0.79740	–0.06	0.9560	–1.60690	1.51886
DEFENCE	–1.81173***	0.66220	–2.74	0.0062	–3.10963	–0.51383
SAFETY	1.05193	0.72048	1.46	0.1443	–0.36018	2.46405
ECON_AF	–0.32410	0.44170	–0.73	0.4631	–1.18982	0.54162
ENVIRON	–0.62397	0.47758	–1.31	0.1914	–1.56001	0.31207
HOUSING	–1.57105**	0.63935	–2.46	–0.0140	–2.82415	–0.31795
HEALTH	0.77236	0.87788	0.88	0.3790	–0.94825	2.49298
CULTURE	–0.60845	0.70308	–0.87	0.3868	–1.98645	0.76956
EDUC	–0.29718	1.08384	–0.27	0.7839	–2.42146	1.82710

* $p < 0{,}05$, ** $p < 0{,}01$, *** $p < 0{,}001$.

Source: own calculations.

Table A2
Final model results

Variable	Factor	Std. error	Statistics	*p*-value	95% confidence interval	Var.
DEFENCE	–1.17654**	0.53945	–2.18	0.0292	–2.23384	–0.11925
SAFETY	1.06680*	0.55212	1.93	0.0533	–0.01534	2.14894
HOUSING	–1.66726***	0.57675	–2.89	0.0038	–2.79768	–0.53684

* $p < 0{,}05$, ** $p < 0{,}01$, *** $p < 0{,}001$.

Source: own calculations.

Research method

The endogenous variables[4] were picked based on substantive knowledge (set of potential endogenous variables), and then selected using Hellwig's method (Welfe 2014). When building the panel model, it was expected that random components for each of the countries in the coming years would be correlated, and, consequently, it would not be possible to treat them as separate observations of basic models for non-panel data. Therefore, the basic model specification must be extended to include a part that measures unobservable country-specific heterogeneity.

[4] Database consists of statistics on structure of public expenditures and macroeconomic variables in the given countries in the given years; normality of the data distribution has not been tested.

The general form of effects models (Greene 2002) is:

$$y^*_{it} = x'_{it}\beta + v_{it} + u_i \quad (i = 1, \ldots, n, \quad t = 1, \ldots, T_i)$$
$$y_{it} = 1 \text{ if } y^*_{it} > 0.0 \text{ in p.p.}$$

where:
u_i – unobservable country-specific heterogeneity.

A special case of the above model, used to analyze data related to factors affecting the fiscal adjustment, is the fixed effects logit model:

$$y^*_{it} = \alpha_i d_{it} + x'_{it}\beta + \varepsilon_{it} \quad (i = 1, \ldots, n, t = 1, \ldots, T_i)$$
$$y_{it} = 1 \text{ if } y^*_{it} > 0.0 \text{ in p.p.}$$

where:
$d_{it} = 1$ for a given country i, otherwise 0.

Table A3
Variables used in the model

Variable	Name	Coding
Fiscal adjustment	F_ADJ	Binary variable that takes the value of 1 if general government primary net lending/borrowing (% of GDP) has increased by at least 0.5 p.p.
Government spending	EXP_P	Normalized continuous variable, government expenditure improvement/deterioration (% of GDP), in p.p.
General public services	PUB_SER	Normalized continuous variable, percentage share of total government spending
Defense	DEFENCE	Normalized continuous variable, percentage share of total government spending
Public order and safety	SAFETY	Normalized continuous variable, percentage share of total government spending
Economic affairs	ECON_AF	Normalized continuous variable, percentage share of total government spending
Environment protection	ENVIRON	Normalized continuous variable, percentage share of total government spending
Housing and community amenities	HOUSING	Normalized continuous variable, percentage share of total government spending
Health	HEALTH	Normalized continuous variable, percentage share of total government spending
Recreation, culture and religion	CULTURE	Normalized continuous variable, percentage share of total government spending
Education	EDUC	Normalized continuous variable, percentage share of total government spending
Social protection	SOCIAL	Normalized continuous variable, percentage share of total government spending

Source: own elaboration.

Hence, log likelihood function for this model has the following form:

$$lnL = \sum_{i=1}^{n} \sum_{t=1}^{T_i} \ln P\left(y_{it} \mid \alpha_i + x'_{it}\beta\right)$$

where:
P – probability of the observed result.

With the model defined this way, the study was conducted on a sample of 171 observations: data for 19 eurozone countries from 2007 to 2015 for the variables adopted, as presented in Table A3.

The results (presented in Tables A1 and A2) indicate that only two variables are of significance at 0.05: the share of defense expenditure, and housing and community amenities' expenditure. These two variables have a negative impact on the probability of fiscal adjustment – improvement of the original budget balance by at least 0.5 p.p. At 0.1, another significant variable is that illustrating the share of public order and safety expenditure. If the share of this expenditure in total government spending is above the sample average, the probability of fiscal adjustment increases, meaning that active policy has been implemented only in the case of these spending categories.

FISCAL ADJUSTMENT AND PUBLIC FINANCE MANAGEMENT IN THE EURO AREA

Abstract

This article focuses on the effects of corrections to the budgetary policy in eurozone economies. The goal is to check whether advancement in implementing modern tools of public management is helpful in the time of fiscal adjustment. The authors assume that the most important role of a performance approach in conducting fiscal policy is the ability of government to implement an active budgetary policy meant as structural changes in the composition of public expenditures. In the case of the need to cut general levels of public spending, public sector managers should be able to conduct fiscal adjustment in such a way as to minimize negative outcomes of spending correction on society. The most important finding of the research is that performance budgeting (PB) has a very limited usefulness in a time of fiscal adjustment meant as a reduction in public spending. There is no statistical evidence that countries more advanced in the utilization of PB tools conduct more active fiscal policy; the dominating approach is cutting all expenditures by a given percentage rather than looking at priorities and social outcomes.

Keywords: public finance, fiscal adjustment, euro area

JEl: H30, H61, H72

DOSTOSOWANIA FISKALNE A ZARZĄDZANIE FINANSAMI PUBLICZNYMI W STREFIE EURO

Streszczenie

Artykuł omawia skutki korekt polityki budżetowej w gospodarkach strefy euro. Celem jest sprawdzenie, czy postęp we wdrażaniu nowoczesnych narzędzi zarządzania publicznego jest pomocny w przeprowadzaniu korekt budżetowych. Autorzy zakładają, że najważniejszą rolą podejścia wynikowego w prowadzeniu polityki fiskalnej jest zdolność rządu do realizacji aktywnej polityki budżetowej, rozumianej jako zmiany w strukturze wydatków publicznych. W przypadku konieczności obniżenia ogólnego poziomu wydatków publicznych menedżerowie sektora publicznego powinni być w stanie przeprowadzić korektę budżetową w taki sposób, aby zminimalizować negatywne jej skutki dla społeczeństwa. Najważniejszym wnioskiem z przeprowadzonego badania jest stwierdzenie, że tzw. budżet zadaniowy ma bardzo ograniczoną przydatność przy przeprowadzaniu redukcji wydatków publicznych. Nie ma statystycznych dowodów na to, że kraje bardziej zaawansowane w wykorzystaniu narzędzi budżetu zadaniowego prowadzą bardziej aktywną politykę fiskalną – dominuje podejście polegające na cięciu wszystkich wydatków o określony procent, a nie na priorytetach i analizie społecznych skutków.

Słowa kluczowe: finanse publiczne, dostosowania fiskalne, strefa euro

JEL: H30, H61, H72

ФИСКАЛЬНОЕ РЕГУЛИРОВАНИЕ И УПРАВЛЕНИЕ ПУБЛИЧНЫМИ ФИНАНСАМИ В ЗОНЕ ЕВРО

Резюме

В статье обсуждаются последствия корректировок бюджетной политики в экономиках зоны евро. Ставится вопрос, как в проведении бюджетных корректировок помогает прогресс во внедрении современных инструментов публичного управления. Авторы полагают, что при проведении фискальной политики подход, нацеленный на получение результата, играет очень важную роль. Он помогает правительству осуществлять активную бюджетную политику, понимаемую как способность к осуществлению изменений в структуре публичных расходов. В случае необходимости понижения общего уровня публичных расходов менеджеры публичного сектора должны быть готовы к корректировке бюджета таким образом, чтобы минимизировать ее отрицательные последствия для общества. Самым важным выводом из проведенного исследования является утверждение, что бюджет, нацеленный на решение конкретных задач, имеет ограниченную способность к проведению сокращения публичных расходов. Нет статистических доказательств того, что страны, более продвинутые в использовании инструментов программно-целевого бюджетирования, проводят более активную фискальную политику. Преобладает подход, заключающийся в урезании всех расходов на определенный процент, а не основанный на приоритетах и анализе последствий для общества.

Ключевые слова: публичные финансы, фискальное регулирование, зона евро

JEL: H30, H61, H72