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BUDGET DEFICITS AND FISCAL DECENTRALIZATION: EVIDENCE FROM CENTRAL AND EASTERN EUROPE

Abstract:

This paper provides empirical evidence on the association between decentralization and fiscal performance of the general government on a panel of 11 former transition countries during 1991-2016, controlling for the effects of various demographic, institutional, and macroeconomic variables. The main findings from the empirical investigation suggest that decentralizing government is associated with better fiscal performance activities in Central and Eastern Europe (CEE) countries. However, we show that only the extent of fiscal decentralization matters for fiscal discipline notwithstanding the composition of local revenue Also, we find that fiscal rule may have favourable effects on the fiscal discipline, though their magnitude is rather modest.

Keywords: *Fiscal decentralization, Budget deficits, Central and Eastern Europe, Panel data models.*
JEL Classification numbers: *H50, H76, H77.*

1. Introduction

Following the collapse of the centrally-planned systems the former communist countries have embarked in comprehensive institutional, political and economic reforms. Decentralization in Central and Eastern Europe (CEE) countries should be seen in the light of these massive changes, i.e. it has been related to the need for improving the inefficient public sector as well as the more general process of introducing political democracy (Ebel and Yilmaz 2002). Hence, since 1990s, there has been a growing interest in studying fiscal decentralization in the CEE countries (For a comprehensive coverage of decentralization in CEE see Dabla-Norris 2006, Horvat 2000, Péteri 2002, Šević 2008, Slukhai 2003, and Swianiewicz 2004). Swianiewicz (2014) provides a typology of local government systems in the CEE countries, concluding that most of them can be characterized as low or medium-decentralization countries. However, the accumulated empirical evidence on the macroeconomic effects of the fiscal decentralization in this region is rather scarce. For instance, Ebel and Yilmaz (2002), Meloche et al. (2004), and Makreshanska-Mladenovska and Petrevski (2019b) study the effects of the fiscal decentralization on the size of the public sector; Rodríguez-Pose and Krøijer (2009) focus on the growth effects of the fiscal decentralization; Makreshanska-Mladenovska and Petrevski (2019a) investigate the relationship between decentralization on income inequality. As can be seen, there is a considerable research gap in this field with many important issues to be dealt with. In these regards, the main goal of our study is to provide empirical evidence on the effects of the fiscal decentralization on the fiscal performance in the CEE countries, which, to the best of our knowledge, is a largely unexplored issue.

Specifically, in this paper we provide empirical evidence on the relationship between decentralization and fiscal performance of the general government on a panel of 11 CEE countries during the period of 1991-2016. In these regards, we employ the three common measures of fiscal decentralization: expenditure decentralization and vertical fiscal imbalance. In addition, the regression model includes several control variables capturing macroeconomic, demographic and institutional factors affecting the fiscal position. The main findings from the empirical investigation suggest that decentralizing government is associated with better fiscal performance activities in the CEE countries. However, we cannot confirm the favourable effects of decentralization when working with subnational revenue and intergovernmental grants. These results imply that it is only the extent of the fiscal decentralization that matters for fiscal discipline notwithstanding the composition of local revenue Also, we find that fiscal rule may have favourable effects on the fiscal discipline, though their magnitude is rather modest.

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As for the organization of the paper, the following section provides an overview of the theoretical and empirical literature on the association between decentralization and fiscal performance. In section III we present formal econometric evidence on the relationship between decentralization and budget deficits, whereas the last section concludes.

2. Decentralization and fiscal performance – Theoretical arguments and empirical evidence

Both the existing theoretical models and the accumulated empirical evidence offer divergent views on the association between decentralization and fiscal performance of the general government. In this section we present the various channels in which fiscal decentralization might affect the financial position of the general government accompanied by a brief review of the relevant empirical evidence on the subject matter.

The benefits and perils of fiscal decentralization

Fiscal decentralization may have positive effects on the fiscal performance of the general government. For instance, under some theoretical assumptions it is argued that local governments are able to supply the public goods more efficiently and to conduct the public policy in more transparent and accountable manner than the central government for several reasons, such as: tax competition, informational advantages, closer proximity to consumers and better matching of local preferences, better governance, consumer efficiency etc. (Brennan and Buchanan 1980, Musgrave 1959, Oates 1972, Shah 1998, Thießen 2003, Tiebout 1956). Over time, a large body of literature has accumulated providing empirical evidence on the positive effects of the fiscal decentralization on the fiscal performance. For instance, Ebel and Yilmaz (2002), Freitag and Vatter (2008), and Rodden and Wibbels (2002) find that expenditure decentralization leads to smaller fiscal deficits, thus, showing that local governments have advantages in balancing public expenditure with public revenues. Similarly, taking account of the subnational governments' taxing autonomy, Thornton (2009) shows that fiscal decentralization does not have a negative impact on the overall fiscal discipline. Neyapti (2010) confirms the negative effects of the decentralization on the budget deficits, but shows that these effects are not uniform, depending on various institutional features. In addition, Baskaran (2010) and Horváthová et al. (2012) find that expenditure decentralization leads to lower level of public debt.

However, neither economic theory nor empirical evidence provide consensus on this issue. For instance, Prud'homme (1995) argues that decentralization has more detrimental than favorable effects on the overall fiscal position for two basic reasons: first, decentralization itself leads to several taxation tiers in a country; and second, the larger the autonomy of local authorities in deciding on the size and the composition of local expenditure, the more difficult is the co-ordination between the various tiers of government. Under these circumstances, the process of formulating fiscal policy on a national level becomes increasingly complex and burdened with co-ordination problems as the local governments might behave in accordance with their own goals and priorities, which might be in conflict with the macroeconomic goals set by the central government. This problem is emphasized when the local governments operate in terms of the so-called "soft" budget constraints when they are prone to excessive local expenditure, trying to pass over the fiscal burden on the taxpayers outside their own jurisdiction.

The theoretical considerations on the negative effects of the fiscal decentralization find support in a number of empirical studies. For instance, Afonso and Hauptmeier (2009), Burki et al. (1999), Fornasari et al. (2000), and De Mello (2000) find that decentralization worsens fiscal discipline leading to excessive public expenditure and high budget deficits. Similarly, De Mello (2007) show that decentralization leads to deterioration in local governments' net-worth, while Baskaran (2012) suggests that subnational tax autonomy has negative effects on fiscal stability of the public sector.

As already mentioned, the empirical literature dealing with the association between decentralization and government size can provide indirect evidence on the effects on fiscal performance, too. In these regards, a number of studies suggest that fiscal decentralization leads to a rise in public expenditure and ultimately to larger size of the government (See Burki et al. 1999, Cassette and Paty 2010, Forbes and Zampelli 1989, Grossman 1989, Grossman and West 1994, Heil 1991, Jin and Zou 2002, Martinez-Vazquez and Yao 2009, and Stein 1998).

Some extensions - the role of institutional arrangements

When discussing the effects of the fiscal decentralization on the fiscal performance it is important to take into account the institutional set-up and the rules pertaining to local government borrowing autonomy. On the one hand, in contrast to the central governments, which are rarely subject to constitutional constraints with respect to borrowing, legal limitations on budget deficits and borrowing of local governments are common practice throughout the world. Hence, the more decentralized government may lead to better fiscal performance of the general government (Pereira, 2000). On the other hand, if unconstrained, local governments may engage in excessive borrowing, which result in unsustainable level of indebtedness, thus worsening fiscal discipline. The perils of local government borrowing are especially pronounced if subnational debt is issued to public banks or if there are widespread expectations of central government bail-outs (Goodspeed 2002, Oates 2006, Rodden et al. 2003). Rodden (2002) and de Mello (2007) provide empirical evidence that restricting local government borrowing is associated with better fiscal performance. In these regards, it is interesting to note that local governments often have limited access to bond markets due to the credibility problems associated with their low fiscal capacity. As a result, this feature leads to at least two opposite effects: on the one hand, the limited borrowing capacity makes local governments more dependent on intergovernmental transfers (de Mello 2007); on the other hand, this market-discipline mechanism seems to impose certain limits on local government borrowing by preventing them from excessive borrowing (Ter-Minassian 1997a, 1997b).

Further on, fiscal decentralization may produce different overall fiscal outcomes depending on the design of the fiscal decentralization system. Specifically, it is important how the local authorities are financed, i.e. whether they are able to collect their own tax revenues or depend on the financial sources provided by the central government. Yet, economic theory does not provide consensus on this issue either. On the one hand, according to the "fiscal illusion" theory, the local governments that are financed primarily by intergovernmental transfers usually show a tendency to overspend, especially in the presence of "soft" budget constraints and expectations of bail-outs. Since fiscal transfers blur the relationship between the costs and the benefits of public goods, local taxpayers are stimulated to increase their demand for public goods. At the same time, local governments have incentives to increase the supply of public goods because they are able to pass the costs to the taxpayers outside their jurisdiction (Oates 1991, Rodden et al. 2003). On the other hand, some argue that the higher level of tax autonomy associated with fiscal decentralization can worsen the overall fiscal performance of the general government. Specifically, when larger proportion of taxes is determined and collected on a subnational level, the individual local governments' fiscal policies may show strong procyclical behavior, thus, accentuating the macroeconomic instability. As can be seen, this argument implies that the increased reliance of local authorities on tax-sharing and central government grants reduces the competition for fiscal resources between the various tiers of government. As a result, the co-ordination of fiscal policy on a national level becomes easier (Thornton, 2007).

Unlike the other dimensions of fiscal decentralization, there is a consensus in the empirical literature that higher reliance of local governments on central government grants deteriorates the overall fiscal position, especially when there are no constraints on local government borrowing (See Burki et al. 1999, De Mello 2000 and 2007, Ebel and Yilmaz 2002, Eyraud and Lusinyan 2011 and 2013, and Rodden 2002). Therefore, the main message from these studies is that the effects of fiscal decentralization on fiscal discipline depend on the local governments' sources of finance, i.e. the decentralization of the government functions should be accompanied by providing suitable tax autonomy.

Finally, the discussion on the effects of the fiscal decentralization on the overall fiscal performance cannot ignore the existence of another channel related to the political decision-making process. Specifically, in centralized countries the central government is able to exert stronger control over public expenditure; in contrast, in more decentralized countries the political decision-making process is largely fragmented, i.e. the decisions on the allocation of resources are made by many agents (the central government and the subnational governments). In these regards, decentralization may lead to weak central government, which does not have affective control over the overall public expenditure. As a direct consequence of these political economy issues, the higher degree of decentralization can lead to larger public expenditure, higher fiscal deficits and, ultimately, to macroeconomic destabilization (Prud'homme 1995, Tanzi 1995, Ter-Minassian 1997a, Velasco, 2000).

3. Decentralization and fiscal performance: Empirical evidence for CEE countries

Data and methodology

In this section we provide formal econometric evidence of the above proposition and, specifically, to test its validity on the sample of CEE countries. Our empirical investigation of the relationship between decentralization and fiscal performance is based on annual data for a panel of 11 CEE countries during the period of 1991-2016. Specifically, the panel consists of the following countries: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.

The budget balance (*budget)* of the general government (as a percent of GDP), is the dependent variable in the regression model. The data on the budget balance are taken from the International Monetary Fund (IMF) World Economic Outlook Database as well as from EUROSTAT. We regress the budget balance on three measures of fiscal decentralization: revenue decentralization (*locrev*), i.e. the share of local government expenditure in the total public expenditure (revenue decentralization); expenditure decentralization (*locexp*), i.e. the share of local government revenue in the total public revenue (expenditure decentralization); and vertical fiscal imbalance (*vfi*), represented by the share of intergovernmental fiscal transfers in the total subnational revenue. The data on the three decentralization variables (*locexp*, *locrev*, and *vfi*) are taken from the March 2014 issue of the World Bank's Fiscal Decentralization Indicators Database, which is derived from the IMF's Government Finance Statistics.

Since fiscal policy is normally influenced by various macroeconomic, institutional and demographic factors, we introduce the following control variables: unemployment rate, public debt, health care expenditure, and dependent population. Public debt (*debt*), expressed as a percent of GDP, is included in the regression because it affects the budget balance through the costs for servicing the existing debt. Growth (*growth*) serves as a proxy for the business cycle effects via the so-called "automatic stabilizers". As social welfare accounts for a large share in total government expenditure, we include two control variables: the expenditure for health care, expressed as a percent of GDP (*health*), and the share of dependent people (those aged less than14 and over 65 years) in the total population (*depend*), which affects the size of the social welfare system. The World Bank Development Indicators Database serves as a source of the data on data on public debt, unemployment, health expenditure, and dependent population. Finally, in order to test for the presumed beneficial effects of fiscal rules (*rule*) we employ the Fiscal Rule Index taken from the European Commission Fiscal Rule Index Database.

As for the methodology, we employ the fixed-effects panel data model, which seems to be more appropriate when working with macroeconomic data (Baltagi 2008, Wooldridge 2002). The main rationale for using this methodological approach is as follows: Often one of the main obstacles in conducting empirical analyses in economics is related with the lack of available data. For instance, since most of the countries publish data on fiscal decentralization on an annual basis, the researcher cannot conduct quantitative analysis by means of statistical techniques, such as the regression analysis. Panel data models alleviate this problem by combining annual data for many countries instead of working with data on a single country. Therefore, by creating a "panel" as a combination of the time and cross-country dimension the researcher is able to obtain enough observations necessary for the quantitative investigation.

The empirical model has the following general specification:

$$y_{it} = \alpha_i + \gamma z_{it} + x_{it}\beta' + u_{it} \tag{1}$$

where: y is the dependent variable (*budget*); z represents the various alternative measures of fiscal decentralization (*locexp, locrev* and *vfi*; x is the vector of control variables (*debt*, *growth*, *health*, *depend*, *rul*); α, γ and β are the constant and the parameters before the fiscal decentralization variable and the control variables, respectively; u are the residuals; while i and t are the country and time subscripts, respectively.

Main findings and discussion

Table 1 presents the results of the empirical model estimated on the sample of CEE countries. Here, the regressions differ only by the fiscal decentralization variable employed (*locexp*, *locrev*, and *vfi*, respectively).

Regression 1 shows the estimates with expenditure decentralization (*locexp*). As can be seen, the coefficient of *locexp* has a positive sign, i.e. increasing the share of local expenditure in total public expenditure is associated with an improvement in the budget balance. Hence, this finding implies that fiscal decentralization in the CEE region can be considered an effective mechanism for ensuring fiscal discipline of the general government. This result may be explained with the initially high level of centralization in the former communist countries in which the public sector was large and highly inefficient. Under these conditions, decentralizing government activities (accompanied by widespread reforms towards democratization of the society and introducing market economy) leads to an increase in the efficiency in the provision of public goods (Shah 2004). The above finding that fiscal decentralization strengthens the fiscal position of the general government in the CEE countries is consistent with several theoretical explanations arguing that local governments usually have a comparative

Table 1: FISCAL PERFORMANCE AND DECENTRALIZATION IN CEE

Variables	(1)	(2)	(3)
const	-0.085001* (0.043116)	0.042110 (0.041224)	-0.018124 (0.047407)
locexp	0.209834*** (0.072964)		
locrev		-0.110910* (0.057023)	
vfi			0.013852 (0.017858)
debt	0.00131 (0.018256)	0.013821 (0.015219)	0.010006 (0.017187)
growth	0.185832*** (0.036958)	0.219331*** (0.035706)	0.219070*** (0.039371)
health	-1.483069*** (0.341209)	-0.742151** (0.332359)	-1.291116*** (0.410315)
depend	0.148269* (0.079568)	-0.055617 (0.079735)	0.063548 (0.105177)
rule	0.006157** (0.002631)	0.006557*** (0.002353)	0.004979* (0.002755)
R^2	0.621218	0.611513	0.577803
F-stat.	11.086439***	9.902251***	7.909017***
Obs.	229	229	225
Hausman	16.589098***	9.613935	10.303295

1. ***/**/* denotes significance at 1%, 5% and 10% level of significance, respectively.
2. F-test for the significance of the fixed effects.
3. White's standard-errors in the parentheses below the regression coefficients.

advantage in the allocation of resources as compared to the central government. In other words, by bringing government "closer to the people", fiscal decentralization provides a better match between local preferences and local policies, which ensures more efficient resource allocation with favourable effects on the fiscal performance (Oates 1972).

However, the favourable impact of the fiscal decentralization on the fiscal discipline does not show up with revenue decentralization as a proxy for fiscal decentralization. As can be seen from regression 2, *locrev* is negative, implying that revenue decentralization worsens the fiscal position of general government. In fact, this is a common finding in the empirical studies (see Afonso and Hauptmeier 2009, Baskaran 2010, and Neyapti 2010), suggesting that this indicator fails to provide a precise measure of fiscal autonomy of local governments. Specifically, revenue decentralization only shows the amount of funds that are available to local governments, i.e. this indicator sums up the total revenue of subnational government from notwithstanding the sources. As such, it is an imperfect measure of decentralization because it does not differentiate between the "own" sources and the funds transferred from the central government. This distinction is of critical importance for the favourable effects of the fiscal decentralization as it is related to the local governments' incentives collecting tax revenues as well as for more efficient spending. Regression 3 shows the estimates with vertical fiscal imbalance (*vfi*) as a proxy for decentralization. Here, the regression coefficient is positive, suggesting that the greater reliance on intergovernmental grants as a source of finance versus "own" revenues has favourable effects on the overall fiscal discipline. However, the regression coefficient is not statistically significant. Combined with the above results, our findings imply that the composition of local revenue does not matter for fiscal discipline, i.e. decentralizing government activities has favourable influence on the overall fiscal discipline notwithstanding whether local government expenditure is financed by intergovernmental transfers.

As for the effects of the control variables included in the regression, we obtain the following findings: the association between the output growth and the budget balance is both positive and statistically significant, confirming the cyclical nature of the fiscal position, which improves in period with stronger growth and deteriorates when economic activity slows down. The coefficient of *debt* is insignificant and with the "wrong" sign (positive). Expenditures on health care exert negative effects on the budget balance, which is in line with the *a priori* expectations. As for the dependent population, we find mixed results: the sign of the regression coefficient varies and it is significant only in the first regression in which its sign is counterintuitive (positive). Finally, we provide some weak evidence on the favourable effects of fiscal rules on fiscal performance: the coefficient of *rule* is positive and significant in the three regressions, though its magnitude is low.

The main findings from our econometric investigation on the association between decentralization and fiscal performance in CEE countries are broadly in line with several recent empirical studies. For instance, Afonso and Hauptmeier (2009) suggest that the effects of decentralization on the budget deficits depend on the measures of fiscal decentralization. Our results with expenditure decentralization (*locexp*) are consistent with the findings in Baskaran (2010), Freitag and Vatter (2008), and Horváthová et al. (2012), who show that fiscal decentralization improves fiscal performance.

5. Conclusion

In this paper we provide empirical evidence on the relationship between decentralization and fiscal performance of the general government on a panel