Decentralization and fiscal performance in Central and Eastern Europe

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Abstract

The 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 1996-2012, controlling for the effects of various demographic, institutional, and macroeconomic variables. Also, for robustness check we make a comparison with a panel of 18 industrialized European economies. The main findings from the empirical investigation suggest that decentralizing government activities in Central and Eastern Europe leads to an increase in the efficiency in the provision of public goods. Also, we show that not only the extent of fiscal decentralization, but the composition of local revenue, too, matters for fiscal discipline. In these regards, providing local governments with higher autonomy in financing their activities by relying more on their "own" tax revenues instead of intergovernmental grants seems to be conducive with fiscal discipline. In contrast to the sample consisting of the former transition economies, we cannot find evidence on the association between decentralization and fiscal discipline in the developed European countries.

Keywords: Fiscal decentralization, Budget deficits, Central and Eastern Europe, Panel data models.

JEL Classification numbers: H50, H76, H77.

Introduction

The existing theoretical models and the accumulated empirical evidence offer divergent views on the association between decentralization and the fiscal performance of the general government. 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 as they are set up by the central government. This problem is emphasized when the local governments operate in terms of the so-called "soft budget constraints". In that case, they are prone to excessive local expenditure, trying to pass over the fiscal burden on the taxpayers outside their own jurisdiction (Prud'homme 1995).

On the other hand, fiscal decentralization may have positive effects on the fiscal performance of the general government. For instance, under some theoretical assumption 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, decentralization increases the overall fiscal performance of the general government. In addition, as contrasted to the central governments that 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, as a result of these subnational fiscal rules, the more decentralized government may lead to better fiscal performance of the general government (Pereira, 2000).

In light of these contrasted propositions it is fair to say that fiscal decentralization may produce different overall fiscal outcomes depending on the way the local authorities are financed. Yet, there is no 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 increase their public expenditure (Oates, 1991). 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 (the theory of tax-exporting).

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 sub-national 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).

The discussion on the effects of fiscal decentralization on overall fiscal performance cannot ignore the existence of another channel related to the political decision-making process and the relations between the politicians and the elites. For instance, decentralization may lead to weak central government, which is exposed to lobbying and influence from various powerful social groups. In these regards, in each society there are influential groups that benefit from the specific types of public expenditure. Consequently, they try to influence the politicians to make decisions such that the public policy is in line with their private interests. Here, the more decentralized political decision-making process makes the central government weaker as its policy will reflect the particular pressures from various interest groups. 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 (Velasco, 2000).

Despite the divergent views on the macroeconomic effects of fiscal decentralization it seems that there is a general consensus that a badly designed decentralization system, in which there are no tight limitations on local government borrowing accompanied by explicit or implicit central

government guarantees of local debt, inevitably generates sustained fiscal deficits, ever rising public debt and macroeconomic instability (Martinez – Vasquez and McNab, 2003).

In this paper we provide empirical evidence on the relationship between decentralization and fiscal performance of the general government on a panel of 11 countries from Central and Eastern Europe during the period of 1996-2012. In order to check for any possible differences in the decentralization-fiscal performance link between the "new" EU member states (the former communist economies) and the industrialized European countries we run an additional regression on a sample consisting of 18 developed European economies. In these regards, we employ two measures of the extent 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 activities in Central and Eastern Europe leads to an increase in the efficiency in the provision of public goods. Also, we show that not only the extent of fiscal decentralization, but the composition of local revenue, too, matters for fiscal discipline. This finding can be justified on the ground that local governments use the resources more efficiently when they are financed by their own tax revenues. In contrast to the sample consisting of the former transition economies, we cannot find evidence on the association between decentralization and fiscal discipline in the developed European countries.

As for the organization of the paper, the following section provides an overview of the empirical literature on the association between decentralization and fiscal performance. In the third section we offer some stylized data on budget deficits and public debt in a number of European countries grouped by the degree of fiscal decentralization. The fourth section provides formal econometric evidence on the relationship between decentralization and budget deficits, whereas the last section concludes.

A brief review of the empirical literature

In this Section we provide a brief overview of several empirical studies on the relationship between decentralization and the overall fiscal performance of the government after which we summarize the main findings.

De Mello (2000) studies the effects of decentralization on the general government fiscal performance in 30 OECD and developing countries during 1970-1995. He finds that the greater local government tax autonomy undermines their own fiscal position. Further on, in the development countries, the greater reliance on intergovernmental fiscal transfers is associated to larger budget deficits of the central government. In the OECD countries, central government grants strengthen the fiscal position of local governments up to a certain limit. In addition, according to DeMello (2000), the fiscal performance of various levels of government depends on several determinants, such as: the central bank's behavior, the terms of trade, the developments in the pension system associated with the demographic factors etc.

Ebel and Yilmaz (2002) draw on the study of De Mello (2000) using the OECD tax autonomy data set so that they take into account only the tax revenue which are determined by local governments' decisions. As a result, they obtain opposite results, i.e. higher tax autonomy reduces the extent of local governments' fiscal deficits whereas intergovernmental transfers worsen their fiscal position. Also, they confirm that the macroeconomic effects of decentralization depend on the reaction of monetary policy as well as the demographic structure.

Rodden and Wibbels (2002) investigate the association between fiscal decentralization and macroeconomic stability in 15 federal countries during 1978-1996. They find that the higher degree of expenditure decentralization leads to smaller fiscal deficits and lower inflation. Also, they show that the political process, too, affects the decentralization-macroeconomic performance link, i.e. fiscal deficits and inflation are lower in the countries where the same political parties hold the power on both national and sub-national level.

Recently, based on a sample of 16 industrialized and developing countries over 1980-1998, Neyapti (2010) confirms the negative effects of decentralization on budget deficits, but shows that these effects are not uniform, depending on various institutional features. Finally, Eyraud and Lusinyan (2013) provide empirical evidence for the OECD countries suggesting that to the extent that local governments are financed mostly by fiscal transfers and borrowing it undermines their fiscal discipline, thus, leading to larger fiscal imbalances of the general government.

Therefore, it is safe to conclude that the empirical literature suggests that the macroeconomic effects of fiscal decentralization depend on various factors, such as: the extent of the local expenditure decentralization, the degree of tax autonomy, the importance of intergovernmental

transfers and borrowing as sources of finance, as well as the country's demographic, political and institutional characteristics.

Decentralization and fiscal performance: Industrialized European countries versus Central and Eastern European countries

Before providing the formal econometric evidence we present some stylized facts on the general government fiscal performance (budget deficits and public debt) in 31 European countries with different extent of fiscal decentralization during 1995-2013. In these regards, we divided the countries in the following four groups: highly decentralized countries, i.e. those where the share of sub-national in the total public expenditure exceeds 20% (Denmark, Finland, and Sweden); upper-middle decentralized countries in which sub-national expenditure account from 10% to 20% in the total public expenditure (the Czech Republic, Croatia, Estonia, France, Iceland, Italy, Latvia, Netherlands, Norway, Poland, Romania, Slovenia, and UK); lower-middle decentralized countries whose share of sub-national expenditure ranges from 5% to 10% (Austria, Belgium, Bulgaria, Germany, Hungary, Lithuania, Luxemburg, Portugal, Slovakia, Switzerland, and Spain); and countries with low degree of decentralization with the share of sub-national expenditure less than 5% (Cyprus, Greece, Ireland, and Malta). Figure 1 shows the budget deficits in each of the four groups over 1995-2013.

Fugure 1 approx. here

As can be seen, the budget balance show similar cyclical pattern in all the countries in our sample. However, it is clear that, in general, the countries with higher degree of decentralization of public expenditure have lower budget deficits compared to the other groups. Indeed, highly decentralized countries form the only group showing a positive budget balance (0.4% on average). In contrast, the upper-middle decentralized countries show an average budget deficit of 2% whereas the fiscal performance of the lower-middle group is slightly worse (an average deficit of 2.7%). Finally, the countries with low level of decentralization are simultaneously those with higher budget deficits (4.9% on average). Further on, these countries have experienced the most dramatic worsening of the budget balance during the Global Economic Crisis when the group's average budget deficit

reached 9.8% in 2009 and 12.6% in 2010. As an illustration, the average budget deficit of the highly decentralized group stood at 2.2% in 2009 while the corresponding figures of the two middle groups were 5.7% and 5.55, respectively.

Figure 2 depicts the public debt in the four groups of European countries confirming the previous conclusion that more decentralized countries have superior fiscal performance than less decentralized ones. Specifically, the highly decentralized group had managed to reduce the public debt from 66.1% in 1995 to 46.5% in 2013, which stands in sharp contrast to the other three groups where the level of indebtedness had increased during the same period. It is striking that the public debt in the less decentralized countries had almost doubled from 64.5% in 1995 to 117.6% in 2013. As a result, despite the same initial level of public debt, the fiscal performance in the most and least decentralized countries had diverged sharply.

Figure 2 approx. here

The above plots of the relationship between decentralization and budget deficits (public debt) are given for illustrative purpose only and need not be interpreted as implying causality from decentralization to fiscal performance. For instance, one may argue that, in addition to decentralization, it is reasonable to assume that the overall fiscal position of the government depends on various other determinants, which have been omitted in the above figures, such as: the demographic characteristics of the population, the social welfare system etc. Moreover, it may be interesting to explore whether the observed pattern is true for the former transition economies from Central and Eastern Europe. Therefore, we now provide a formal econometric testing of the association between these two variables.

Decentralization and fiscal performance: Econometric evidence

Data and methodology

The above descriptive analysis suggests that there may be a negative association between fiscal decentralization and budget deficits (public debt). At least, we have the observed the mere fact that, on average, the European countries with higher degree of decentralization at the same time have lower budget deficits and lower public debt. In this Section we provide a formal econometric

evidence of the above proposition and, specifically, to test its validity on the sample of Central and Eastern European countries. In these regards, we regress the budget balance as a proxy for the fiscal discipline on public expenditure. As this measure represent an imperfect proxy for fiscal decentralization, we use another measure of decentralization – the intergovernmental fiscal transfers. In this way, we are able to check whether the composition of local financing, i.e. the reliance on own revenues versus fiscal transfers, has any effect on the fiscal position of the general government.

Our empirical investigation of the relationship between decentralization and fiscal performance is based on annual data for a panel of 11 countries from Central and Eastern Europe during the period of 1996-2012. Specifically, the panel consists of the following countries: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. In order to check for any possible differences in the decentralization-fiscal performance link between the "new" EU member states (the former communist economies) and the industrialized European countries we run an additional regression on a sample consisting of 18 developed European economies: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom.

As mentioned above, we measure the overall fiscal discipline by the budget balance (*budget)* of the general government (as a percent of GDP), which is the dependent variable in the regression model. We employ two measures of the extent of fiscal decentralization: expenditure decentralization (*locexp*), i.e. the share of sub-national government expenditure in total government expenditure (general government) and the vertical fiscal imbalance (*grant*), i.e. the share of intergovernmental grants in total local government revenue.

Since fiscal policy is normally influenced by various macroeconomic, institutional and demographic factors, the budget balance is specified as a function of the following control variables: unemployment (output gap), public debt, health care expenditure, and the older population. The public debt (*debt*) is included in the regression because it affects the budget balance through the costs for servicing the existing debt. The output gap variable (*gap*), expressed as a percent of GDP, is included in order to control for the fiscal implication of the business cycle via the so-called automatic stabilizers. The output gap is constructed as a difference between the actual and potential output. The data on the output gap are extracted from the IMF's World Economic Outlook Database, which contains such data for the 18 industrialized European

countries and only for three out of 11 Central and Eastern European economies. As a consequence, in the regression with the latter sample the output gap has been replaced by the unemployment rate (*unemploy*) as a proxy of the business cycle. As social welfare accounts for a large share in total government expenditure, we include two control variables: the health care expenditure as a percent of GDP (*health*) and the share of older people (those aged 65 and over) in the total population (*old*), which affects the size of the pension system.

The empirical model has the following general specification:

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

where:

- y is the dependent variable (*budget*);
- z represents the various alternative measures of fiscal decentralization (*locexp* and *grant*);
- x is a k-dimensional vector of explanatory control variables (*debt*, *gap*, *unemp*, *health*, *old*);
- α , γ and β are the constant, the parameter before the fiscal decentralization variable and the k-dimensional vector of parameters of the control variables, respectively;
- u are the residuals;
- i and t are the country and time subscripts, respectively.

We employ the fixed-effects panel data model, which seems to be more appropriate when working with macro panels, especially when the cross-sections are not sampled randomly and when the research focuses on the behaviour of the specific sample without drawing inferences about the whole population. In addition, the fixed-effects estimator is consistent even when individual effects are correlated with the regressors (Baltagi, 2008). In these regards, the assumption that the regressors are not correlated with the disturbance term, which is critical for employing the random effects model, seems to be a priori unrealistic (Wooldridge, 2002) as many of the regressors included in the model may be correlated with the unobserved country-specific effects. Formally, we base our choice of the fixed-effects vis-á-vis the random-effects model on the Hausman-test (Hausman, 1978), which in each case rejects the null-hypothesis that the regressors and the disturbances are not correlated. In addition, our preference for the fixed-effects model is supported by the results of the F-test for the joint significance of the fixed effects. Finally, coping with

heteroskedasticity and serial correlation we have estimated the panel model with AR(1) error term using the White's heteroskedasticity-consistent estimator.

Main findings and discussion

Since we use different measures of fiscal decentralization we have estimated two regressions for the Central and Eastern European countries and two regressions for the industrialized European economies.

Table 1 approx. here

The second column of Table 1 shows the estimates from the regression with the expenditure decentralization as explanatory variable. As can be seen, the coefficient of *locexp* has a positive sign and it both statistically significant (at 1%) and economically important. Specifically, increasing the share of local expenditure in total public expenditure by one percentage point is associated with an improvement in the budget balance by 0.25 percentage points. Hence, this finding implies that fiscal decentralization in Central and Eastern Europe 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).

Further on, the positive influence of fiscal decentralization on overall fiscal performance is confirmed the third column of Table 1, too, which shows the estimates of the regression with the vertical fiscal imbalance (*grant*) as a proxy for decentralization. Here, the regression coefficient is negative and statistically significant (at 10%) though with a much lower magnitude, i.e. increasing the share of fiscal transfers in total local government expenditure by one percentage point is associated with a decline of the budget balance by 0.025 percentage points. Hence, this finding supports the view that not only the extent of fiscal decentralization, but the composition of local revenue, too, matters for fiscal discipline. In these regards, providing local governments with higher autonomy in financing their activities by relying more on their "own" tax revenues instead

of intergovernmental grants seems to be conducive with fiscal discipline. This finding can be justified on the ground that local governments use the resources more efficiently when they are financed by their own tax revenues. In addition, it is common that in the countries where institutions are weak fiscal transfers are allocated on discretionary terms based on pure political considerations and disregarding economic efficiency.

As for the effects of the control variables included in the regression the main findings are in line with the *a priori* expectations, i.e. we find a negative association between the level of public debt, unemployment and health care expenditure on the budget balance. All these regression coefficients are statistically significant at 1% or 5%. Also, the inclusion of the autoregressive term of order one is warranted, thus, confirming the existence of considerable inertia in the fiscal position of the general government. The only exception is the coefficient of the older population, which is not significant and/or has the "wrong" sign.

In sum, we provide empirical support to the advocates of decentralization, who claim that it delivers more efficient government, thus strengthening the fiscal position of general government. In these regards, the result from our study are consistent with several theoretical explanations. For instance, Oates (1972) argues that local governments usually have a comparative advantage in the allocation of resources as compared to the central government, i.e. by bringing government "closer to the people", fiscal decentralization provides a better match between local preferences and local policies. In addition, some authors (for instance, Grossman, 1989; Grossman and West, 1994) emphasize that the importance of the way the decentralization is implemented. When the local and central government, instead of competing for the scarce fiscal resources, engage in various arrangements for sharing the common fiscal resources, it results in the "race" for larger expenditure from the "common pool" of public revenues. This is the essence of the so-called "collusion" or "common pool" hypothesis, which claims that, when local expenditure is financed by fiscal transfers, decentralization results in larger government (Grossman, 1989). Similarly, Rodden (2003) argues that intergovernmental transfers undermine fiscal discipline for the following reason: when local public goods are financed by transfers from the central government the costs are borne not only by the local citizens (who benefits from the local public goods) but they are spread on the whole population. In that case, the demand for local public goods will be larger because part of the costs is transferred to the non-residents instead of being internalized.

Finally, intergovernmental transfers lead to the so-called “soft budget constraints” at the local government level. In these regards, Stein (1998) argues that, when faced with various fiscal shocks (higher interest rates on the debt, lower local tax revenue etc.), local governments that rely on intergovernmental transfers as a source of finance feel lesser pressure for adjustment and could afford a higher level of local expenditure for a longer time period (by increasing their debt). The reason for this type of behavior is that both the politicians and the voters expect that the central government, which has already finances the current expenditure of the local governments, would finance their debt, too, especially when the allocation of the intergovernmental transfers is based on discretion instead of legally-binding rules.

Comparison with the industrialized European countries

The fourth and fifth columns of Table 2 list the estimates from the same regression model on a sample of 18 industrialized European economies. Again, we provide the results for the two specifications, which employ different measures of decentralization. In contrast to the sample consisting of the former transition economies, we cannot find evidence on the association between decentralization and fiscal discipline in the developed European countries. Specifically, the coefficients of expenditure decentralization is negative, thus, implying that decentralization threatens the overall fiscal position. On the other hand, the obtained negative coefficient of the vertical fiscal balance suggests that the reliance on intergovernmental transfers weakens the fiscal position of the general government. However both regression coefficients are not statistically significant. One possible explanation of these findings could be related to the presumed higher fiscal discipline of the central government in the industrialized European countries in comparison with the former transition economies. At the same time, the presence of rule-based allocation of intergovernmental transfers alleviates the negative effects associated with the “common pool” problem. As a result, decentralizing expenditure to the sub-national level does not offer the same benefits that are observed in the Central and Eastern European countries. Finally, with regards to the other variables in the empirical model, the results are comparable to those for the former transition economies.

Conclusion

In this paper we provide empirical evidence on the relationship between decentralization and fiscal performance of the general government on a panel of 11 countries from Central and Eastern Europe during the period of 1996-2012. In order to check for any possible differences in the decentralization-fiscal performance link between the "new" EU member states (the former communist economies) and the industrialized European countries we run an additional regression on a sample consisting of 18 developed European economies. In these regards, we employ two measures of the extent 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 activities in Central and Eastern Europe leads to an increase in the efficiency in the provision of public goods. Also, we show that not only the extent of fiscal decentralization, but the composition of local revenue, too, matters for fiscal discipline. In these regards, providing local governments with higher autonomy in financing their activities by relying more on their "own" tax revenues instead of intergovernmental grants seems to be conducive with fiscal discipline. This finding can be justified on the ground that local governments use the resources more efficiently when they are financed by their own tax revenues. In contrast to the sample consisting of the former transition economies, we cannot find evidence on the association between decentralization and fiscal discipline in the developed European countries.

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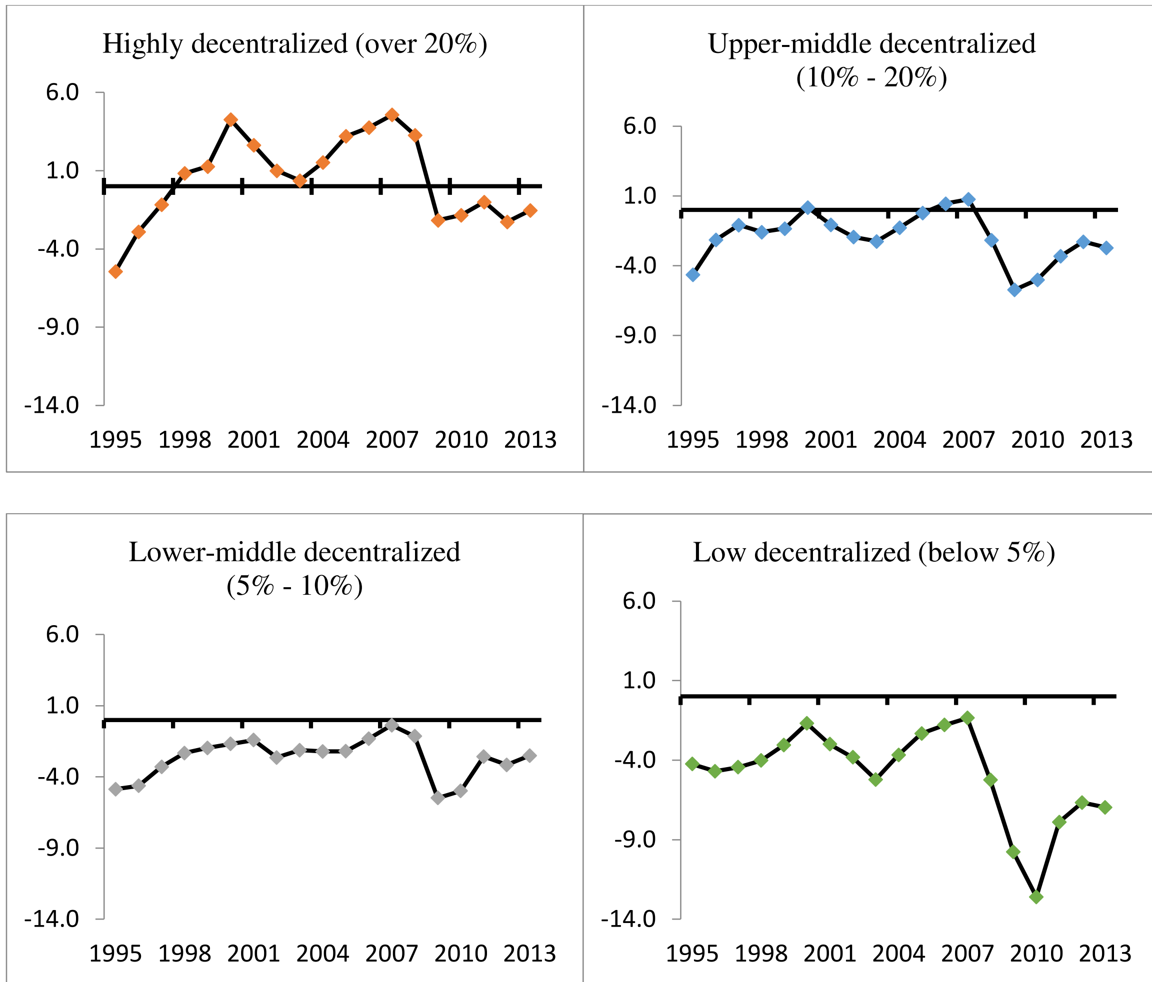
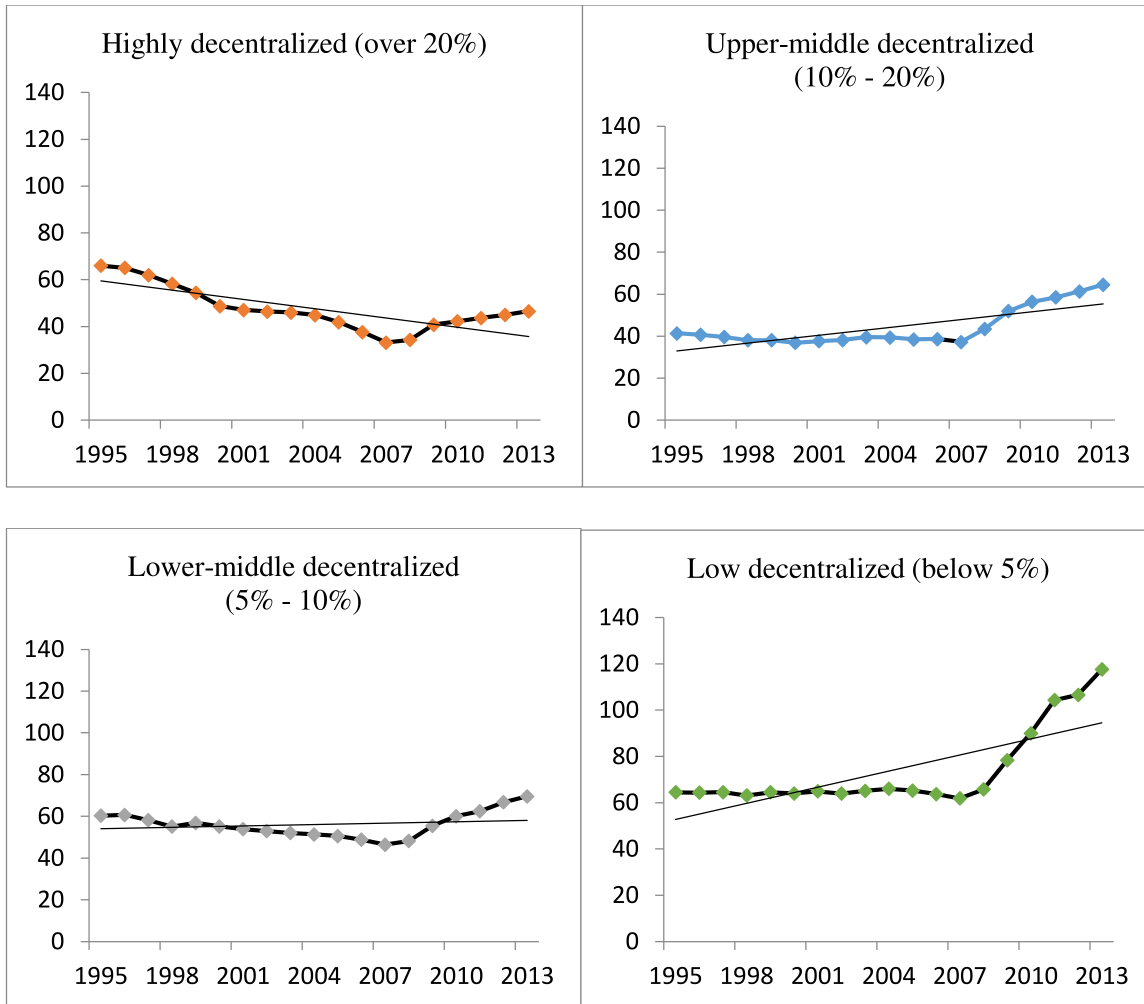
Figure 1: The budget balance in selected European countries, 1995-2013 (% of GDP)



Source: Own estimates based on the EUROSTAT database.

Figure 2: The public debt in selected European countries, 1995-2013 (% of GDP)



Source: Own estimates based on the EUROSTAT database.

Table 1: Regression output from the fixed-effects panel data model

Variables	Central and Eastern Europe		Industrialized European countries	
	(1)	(2)	(3)	(4)
const	11.286**	11.397**	11.597**	13.039***
	(4.489)	(4.551)	(4.906)	(4.710)
locexp	0.252***		-0.002	
	(0.047)		(0.015)	
grant		-0.025*		-0.024
		(0.014)		(0.020)
debt	-0.079**	-0.100**	-0.057*	-0.062**
	(0.033)	(0.042)	(0.030)	(0.031)
gap			0.373***	0.477***
			(0.058)	(0.051)
unemp	-0.183**	-0.191***		
	(0.071)	(0.066)		
health	-2.083***	-1.728***	-2.137***	-1.670***
	(0.589)	(0.550)	(0.518)	(0.412)
old	-0.278	0.025	0.357	0.155
	(0.271)	(0.202)	(0.394)	(0.368)
AR(1)	0.462***	0.489***	0.564***	0.546***
	(0.075)	(0.084)	(0.035)	(0.036)
R^2	0.713	0.709	0.879	0.886
F-statistics	20.509***	19.624***	82.943***	84.934***
Observations	149	146	261	260

Notes:

1. ***/**/* denotes significance at 1%, 5% and 10% level of significance, respectively.

2. F-test for the significance of the fixed effects (p-value in the parentheses).

3. White's standard-errors in the parentheses below the regression coefficients.