GRAŻYNA BUKOWSKA
JOANNA SIWIŃSKA-GORZELAK

CAN FISCAL DECENTRALISATION CURB FISCAL IMBALANCES?

Can fiscal decentralisation curb fiscal imbalances?

GRAŻYNA BUKOWSKA Faculty
of Economic Sciences
University of Warsaw
e-mail: g.bukowska@uw.edu.pl

JOANNA SIWIŃSKA-GORZELAK
Faculty of Economic Sciences
University of Warsaw
e-mail: siwinska@wne.uw.edu.pl

Abstract

The aim of this paper is to study the impact of fiscal decentralisation on fiscal discipline. We use annual data for more than 2400 Polish municipalities, over the years 2002-2014. We introduce the distinction between "de facto" and "de jure" fiscal decentralisation, what is the first novelty of this study. The second novelty is that we control for the characteristics of the political scene and include interactions of decentralisation and political variables. We show that higher decentralisation is associated with higher fiscal discipline and that this result is robust for all our decentralisation measures. We also show that the impact of decentralisation is different, depending on the characteristics of the local political scene. Therefore, its overall effect on fiscal balance is not necessarily straightforward.

1. Introduction

The increasing scope of decentralisation observable in many countries, has brought its possible impact on fiscal policy and stability to the fore of economic research (Plekhanov and Singh, 2006). Among others, the literature has been paying increasing attention to the possible consequences of decentralisation for fiscal balances. Although the number of empirical studies on this topic is steadily growing, the results are divergent and there is still no consensus regarding the impact of decentralisation on fiscal discipline. The complexities associated with the proper measurement of decentralisation, coupled with limitations of the existing data, are probably among the more important reasons for the opposing conclusions (Baskaran, 2010; Neyapti, 2010). Some studies also indicate that the impact of decentralisation on fiscal balances is significantly influenced by institutional and structural factors (Neyapti, 2010), what makes the empirical assessment of the link between decentralisation and fiscal prudence at the cross-country level an even more complex task.

The aim of this paper is to amend the literature on the impact of decentralisation on fiscal balances, by offering extensions of the current discussion. Our work is based on the data for over 2400 Polish municipalities. Poland makes an excellent "laboratory" to study decentralisation. The large number of local territorial units that are characterised by different degree of revenue autonomy, allows to base the research on decentralisation on a very large and comprehensive database that contains rich information on the structure of local revenue. Such large and detailed database is unattainable when studying the cross-country experience.

We measure the scope of decentralisation by own revenues of the local territorial units. The first novelty of this study is that we make a distinction between the amount of revenues that the local authorities are entitled to collect and the revenues that are actually collected, after various tax policy measures have been implemented. We call the former "de jure" revenues, and the latter - "de facto" revenues. "De jure" revenues are therefore the potential own revenues, that the local governments are entitled to, given the local tax base. "De facto" revenues are the revenues which are shaped by the local tax policy. Most empirical studies use the latter measure, however it is prone to endogenity – it cannot be a priori excluded that lower share of "de facto" own revenues is driven by policy choices at the local level, which also affect the fiscal deficit. For example, the local policymakers might choose to decrease the own tax revenues, what will lead to lower share of these taxes in total revenues and to higher deficits. There will be an observable positive correlation between the higher share of own revenues and fiscal balances, yet this correlation will be a result of lax tax policies implemented at the local level, and not of systematic, positive impact of fiscal decentralisation on fiscal prudence. The inclusion of both "de facto" and "de jure" revenues alleviates this problem and allows to assess the robustness of the relationship between decentralization and fiscal discipline.

The second novelty of this paper is that we carefully control for the characteristics of the political scene at the local level. As numerous papers have shown, the political variables have a large impact on the shape of fiscal policy (see, for example (Besley and Case, 2003; Persson and Tabellini, 2002a). Nevertheless, these political links are often ignored by the decentralisation literature that studies the cross-country experience, what might lead to biased

results. We also suspect that the characteristics of the local political scene might have a different impact on public finances, depending on the scope of decentralisation. Higher share of own revenues gives the local policymakers more discretion over spending and taxation and allows them to pursue their political goals. Therefore, political variables might interact with decentralisation measures, complicating the link between decentralisation and fiscal discipline. In this study, we control for these interactions

The structure of this paper is as follows: the next section shortly reviews the literature on fiscal decentralisation and fiscal imbalances; section 3 discusses political variables that have been found to be significant determinants of fiscal deficits. Section 5 describes fiscal decentralisation in Poland and section 6 describes our database and shows the results of our econometric work. The last section concludes.

2. *Fiscal decentralisation and fiscal imbalances – review of the literature*

The local governments rely not only on their own revenues, but also on transfers from the central level. Since both the scope and the regulations of this "partial fiscal decentralisation" are diverse, it constitutes a multi-faced phenomenon that is not easy to quantify (Brueckner, 2009). Consequently, the impact of partial decentralisation on fiscal discipline is neither simple nor uniform.

From theoretical perspective, there are a number of well established arguments which show that higher reliance on own revenues i.e. a higher degree of fiscal (revenue) decentralisation or higher fiscal autonomy (we use the two terms interchangeably) might contribute to fiscal discipline.

A vivid exposition of the link between fiscal autonomy and fiscal imbalances can be found for example in works that focus on the so-called "vertical fiscal imbalances" (Eyraud and Lusinyan, 2013; Wibbels, 2000) i.e. the disproportion between own revenues of the local governments and their spending duties. These works highlight that the effects of decentralisation depend among others on the revenue structure of the local governments. The general conclusion that emerges out of these studies is that higher reliance on transfers from the central level is detrimental to fiscal prudence (Eyraud and Lusinyan, 2013). An excellent summary of these arguments has been done, among others, by Eyraud and Lusinyan, (2013); hence we just provide a short description of the most important ones.

Firstly, high reliance on fiscal transfers from the central government might give rise to a fiscal illusion at the local level. Since the local revenues are detached from the local tax base, citizens do not fully internalise the costs of spending programs and in consequence demand an inefficiently high amount of public goods (Wibbels, 2000). This separation of benefits stemming from public spending, which are enjoyed by the local units from their costs, which are borne at the central level is at the root of the common pool problem and leads to inefficiently high fiscal imbalances (Plekhanov and Singh, 2006). These arguments allow to formulate the

conclusion that higher share of own revenues makes the common pool problem less severe and increases fiscal discipline.

Secondly, some authors argue that less revenue autonomy often implies soft budget constraints on the side of local governments. When the local governments depend on the central level, the local policymakers might be tempted to overspend, expecting a bailout in times of a fiscal crisis (Baskaran, 2012; Foremny, 2014; Goodspeed, 2002; Neyapti, 2013; Rodden, 2002).

Thirdly, lower revenue autonomy is related to lower fiscal flexibility in face of unexpected fiscal shocks (Asatryan et al., 2015), which can lead to higher short-term fiscal imbalances, that may turn out to be difficult to fully erase over the long run.

Earlier works on fiscal decentralisation also provide important arguments in favour of the hypothesis that fiscal decentralisation might lead to greater fiscal discipline. The literature that departs from the tradition of Brennan and Buchanan (1977), who see the government as a Leviathan, argue that decentralisation might limit the rent-seeking behaviour of politicians by fostering "yardstick competition" (Besley and Case, 1995) or by imposing stronger accountability (Keen and Marchand, 1997). Hence, decentralisation may lead to lower, more efficient public spending.

However, the decentralisation literature also supplies important arguments that give rise to opposing views on decentralisation and fiscal discipline, i.e. that decentralisation might attribute to loosening of the fiscal stance. Firstly, higher reliance on own revenues might lead to increased competition between local units for the mobile capital, which in turn might lead to a "race to the bottom" in taxation (Edwards and Keen, 1996; Wilson and Wildasin, 2004). Secondly, decentralisation, due to inability to use the economies of scale and due to coordination problems, the costs of supplying public goods can go up (Neyapti, 2010). Thirdly, decentralisation, without the proper institutions that allow for higher accountability, may lead to higher corruption (Neyapti, 2010). All these factors might lead to higher fiscal deficits.

Hence, the theoretical arguments are in general supportive of the idea that higher fiscal autonomy might result in lower fiscal imbalances, although there are also important arguments that suggest that an opposite relationship cannot be excluded.

The empirical literature on fiscal decentralisation and fiscal discipline does not resolve this dispute, as its conclusions are also diverse (Asatryan et al., 2015). One of the biggest difficulties that empirical studies is finding the correct measures of fiscal decentralisation, that capture the true degree of subnational governments' fiscal autonomy (Baksaran, 2010; Asatryan et al., (2015). Existing works adopt different measures of fiscal decentralisation what partly explains the diversity of results.

Using evidence from a cross-country setting, de Mello (2000) shows that higher level of decentralisation, measured by the share of local revenues (or expenditures) in total public revenues (or expenditures) is associated with higher fiscal imbalances. Plekhanov and Singh (2006) reach a similar conclusion, measuring fiscal decentralisation from the expenditure side,

i.e. as the share of total local expenditures in general government expenditures. Wibbels (2000), who uses political variables to measure decentralisation, formulates analogous conclusions.

In a more recent work, Neyapti (2013), shows evidence that fiscal decentralisation, measured by both revenue and expenditure decentralisation (proxied by the share of total local revenue (spending) in overall government revenue (spending)) is related to higher fiscal deficits of the general government in OECD countries. However fiscal decentralisation coupled with fiscal rules is associated with lower deficits. He concludes that fiscal decentralisation leads to fiscal discipline, only when accompanied by fiscal rules.

In a very interesting study, Thornton, (2009) argues that when revenue decentralisation is properly measures (only the revenue over which the local government has full autonomy), it turns out to have no impact on fiscal deficits of the general government in the sample of OECD countries. Foremny (2014) reports that higher tax autonomy has an impact on fiscal imbalances, but only in OECD countries that have federal structure (Austria, Belgium, Germany and Spain); while it has no impact on fiscal deficits in unitary countries (Denmark, Finland, France, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Sweden, UK).

On the other hand, Rodden, (2002) and Eyraud and Lusinyan, (2013) who focus on the impact of vertical fiscal imbalances, provide evidence that lower dependence on transfers from central government leads to lower fiscal imbalances. These works also stress that fiscal deficits may be curbed by limited borrowing autonomy of the local governments.

In a very interesting work, Neyapti, (2010) using a sample of 16 developed and developing countries shows that higher level of both expenditure and revenue autonomy; where revenue autonomy is defined as the share of own local revenues (as opposed to total local revenues) in total general government revenue decreases fiscal deficits of the general government. He also shows that when the measure of revenue autonomy includes revenues that are shared between the central and sub-national level, the impact on fiscal discipline is smaller. This stresses the importance of proper measurement of fiscal decentralisation. This work also highlights that the effects of decentralisation on fiscal deficits depend on structural and institutional factors.

Asatryan et al., (2015) using the sample of OECD countries also show that higher revenue autonomy, measured in a similar way to Neyapti, (2010) is associated with smaller fiscal imbalances at the local level. This work also discusses various measures of decentralisation used in empirical studies, highlighting their flaws and stresses the importance of using data that illustrates the true extend of fiscal autonomy.

Baskaran, (2010), using a sample of OECD countries, finds evidence of a different impact of revenue and expenditure decentralisation. While revenue decentralisation, defined as the share of total revenue of the local government in the general government revenue, does not affect the level public debt; expenditure decentralisation lowers it. Baskaran, (2012) in turn finds a U-shaped relationship between public deficits and revenue decentralisation.

The literature offers also a limited number of a single-country studies that provide interesting evidence on the link between fiscal decentralisation and fiscal imbalances. Schaltegger and

Feld, (2009) using the data from Swiss cantons show that higher share of transfers in local revenues decreases the likelihood of successful fiscal stabilisation. On the other hand, Freitag and Vatter, (2007), find that more decentralized Swiss cantons tend to have smaller deficits in times of economic crisis; but there is no relationship between decentralisation and fiscal outcomes in normal times.

Summing up, the results of the empirical literature are diverse; a significant constraint on this literature is put by the relatively scant data that measures the extend of revenue and expenditure autonomy.

3. *Political factors shaping fiscal imbalances*

While the scope of decentralization is an important factor that shapes fiscal imbalances, it is not the only one. According to the vast public choice literature, fiscal policy is significantly affected by the decisions of selfish policymakers (Musgrave, 1985; Persson and Tabellini, 2002b; Strauch and Hagen, 2012), who aim at maximizing votes (see, for example Buchanan and Wagner, 1977) or at maximizing revenue and rents in spirit of the Leviathan model (Brennan and Buchanan, 1977)[1]. One of the lessons from this literature is that characteristics of the political scene, such as political fractionalization, political competition or the ideology of the ruling party have a major impact on fiscal policy (Persson and Tabellini, 2002; Solé-Ollé; 2006). Therefore, political variables need to be taken into account, when studying the empirics of fiscal policy, as otherwise the results might be severely biased.

Among the more important political factors that shape fiscal policy is political fragmentation – a complex phenomenon, with many possible consequences. Political fragmentation can be discussed both with respect to the shape of the incumbent decision-making political bodies and with the respect to the political scene, from which the policymakers are drawn (elected) to serve in public institutions.

Political fragmentation defined as dispersed decision-making process within the incumbent political bodies, is seen as a factor that strengthens the common pool problem associated with competing interest groups. Many studies have shown, that it might lead to higher fiscal deficits (Persson and Tabellini, 2002; Ashworth et al., 2005; Borge, 2005; Geys, 2007).

Political fragmentation in the context of elections is often described by the number of parties or candidates competing for votes. Therefore, political fragmentation, which in this context is also referred to as political competition, is seen as way to discipline politicians, reducing the rent-seeking activities of the "Leviathan" government or increasing the resistance to lobbies (Solé-Ollé and Viladecans-Marsal, 2012). If political competition is intense, the incumbent politicians have stronger incentives to ensure good performance as otherwise, they can be easily replaced by the public during the next elections. Hence, political fragmentation can be also

---

[1]Persson and Tabellini, (2002) make a distinction between two approaches – models that treat opportunistic politicians as „office-seeking" or „rent-seeking"

seen as an indicator of "political turnover" and be associated with the concept of political "accountability" (Bardhan and Yang, 2004).

The political agency literature (Ferejhon, 1986; Rogoff, 1990; Besley and Case, 1995; Persson and Tabellini, 2002) suggests that higher political competition will lead to lower expenditure and lower deficits.

On the other hand, Acemoglu and Robinson (2006) suggest that higher political competition may intensify political instability and diminish the incentives of policymakers to implement growth-enhancing policies. Assuming that voters are characterized by fiscal illusion, in the spirit of Buchanan and Wagner (1977); tight elections might lead to promises of higher spending or tax cuts (Rogers and Rogers, 2000). As a result, fiscal discipline will be relaxed. A similar argument holds that when political competition is intense, the electoral base of each party tends to be smaller. In order to cater to their narrow support base, politicians find it expedient to promise pork-barrel policies rather than policies that benefit the electorate as a whole. The resulting policies lead to higher spending and deficits (Besley and Ghatak, 2005; Lizzeri and Persico, 2005).

According to yet another approach, higher political competition shortens the planning horizon of the government. With political competition, the incumbents know that with certain probability they will not retain the governmental control in the next period, hence policymakers may face incentives to increase fiscal deficits, driven by the intensified rent-seeking behavior, before being replaced in office (Acemoglu and Robinson 2006). Another similar argument is provided by the strategic debt models (Persson and Svensson; 1989). When the current government fears to be voted out of office during the next elections, the incumbents may strategically engage in deficit spending in order to limit the policy of a possible successor from another party. Moreover, as Besley and Case (1995) argue, a longer time in office strengthens the policymaker's chances of resisting spending pressures and building reputation in office.

Summing up, as this literature shows, political competition may have a significant impact on fiscal policy; yet the magnitude or even the sign of this impact is difficult to establish a priori.

In recent years, a new and steadily growing literature has emerged which links the government's performance to individual characteristics of incumbent political leaders (Jones and Olken, 2005; Hayo and Neumeier, 2012). The empirical research documents a connection between sociodemographic characteristics of leaders and fiscal policy (e.g., Mikosch, 2009; Hayo and Neumeier, 2012, 2014). Another factor of relevance is the political ideology of the policymaker or the ruling party. It has been reported; although the evidence is not uniform[2] that left-wing parties, being more in favor of public intervention, are more likely to present higher levels of debt than conservative parties (Geys; 2007, Tovmo; 2007, Vila and Vila; 2010, for an overview, see Ribeiro 2015).

---

[2]Ashworth et al. (2005) obtained a unexpected result and found that left-wing parties favoring a larger public sector with increased functions, but lower debt.

Overall there is no doubt, that factors related to the shape of the political scene or to characteristics of policymakers are prominent in shaping fiscal balances and they should not be forgotten when modeling fiscal policy. Moreover, it seems that the role of political factors may be stronger, when policymakers have higher degree of discretion over revenues and spending. Hence, a similar degree of fiscal decentralization that transfers the discretion over spending and taxation to the lower level, might have different impact on the shape of public finances, due to the differences in the local political scene. In this study we aim, among others, to present evidence that supports this hypothesis

4. Main features of the fiscal decentralisation in Poland

In Poland, the role of local governments in shaping the socio-economic environment is significant, with local public spending amounting to around 30% of the total general government expenditures.

Table 1. Expenditure of the general and local government in Poland, in % of GDP

	2010	2011	2012	2013	2014	2015
General government's expenditure	45,6	43,6	42,6	42,4	42,2	41,5
Local government's expenditure	14,9	13,9	13,2	13,2	13,5	12,7

Source: Polish Ministry of Finance.

The local government encompasses three tiers: voivodship, county and municipality (*gmina*). The main unit of the local government is the municipality – its dominant role is guaranteed by the Constitution. This is reflected, among others, in the size of the local budgets: the total municipalities' revenues have been on average 6,4 times higher than the revenues of counties and 8,6 times higher, compared to the revenues of voivodships.

At present in Poland there are in 2478 municipalities, out of which, 303 are officially classified as urban, 1559 are rural and 616 are of mixed urban-rural character. Out of the 303 urban municipalities, 66 of the biggest cities are also classified as counties and they form the so-called "city with the rights of the county".

The responsibilities of Polish municipalities include the financing and supply of: pre-school and primary education, communal services such as water supply and distribution, sewage disposal, solid waste collection and street lighting, the maintenance of local roads and, in case of cities, also local public transportation. Other own municipal competences include the supply of communal housing, spatial planning, social services, i.e., social benefits, maintenance of voluntary fire brigades, local libraries, maintenance of public parks, commentaries and market places (Municipal Self-Governance Act, 1990[3]). Total annual expenditure for an average municipality amounted to around 807 Euros per capita in 2014.

The public revenue of municipalities comes from a number of different sources, including own taxes and charges for specific services, shared taxation (PIT & CIT) and targeted and untargeted

---

[3] Ustawa o samorządzie gminnym (1990)

grants received from the central government and the higher levels of the regional government. The structure of municipalities' revenue is given in Figure 1.

Table 2. The share of different revenue sources in total revenues of Polish municipalities,in years 2003-2015

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Own revenues	35,6	33,7	34	32,2	32,1	31	30	29,8	29,5	30,2	31,2	32	31,4
Shared taxes (PIT&CIT)	11,7	14,6	14,7	15,2	17,4	18,2	16,3	14,8	16	16,4	16,9	17,4	18,3
Conditional grants	10,5	12,5	16,2	20	19,2	18,8	19,8	24	23,8	22	20,9	21,6	21,3
Unconditional grants	42,2	39,3	35,1	32,6	31,3	32	33,9	31,4	30,7	31,4	31	29,1	29

Source: The Polish Ministry of Finance.

The biggest share of revenues – approximately 30% of total revenues – comes from own revenues, i.e. local taxes, charges and other payments such as properties or fines, where the municipality has a degree of control over the tax rate and the base. The own taxes include: the real estate tax, the agricultural tax, the forest tax, the tax on means of transport, the tax on civil law transactions, tax on dogs, and the so-called "tax card" – a simplified tax which can be used by entrepreneurs. Among own taxes, the most important source of revenue is the real estate tax; that constitutes approximately 70% of the own revenues. Municipalities within the statutory limits, can shape the revenues from these taxes by changing the rates of local taxes, granting tax reductions or exemptions to taxpayers.

Around 18% of municipalities' revenue comes from shared taxes – PIT and CIT. Municipalities receive around 37% of total national PIT revenues and 6,7% of total national CIT revenues, with the exact revenue shares determined each year by the Parliament. Municipalities have no direct influence over this source of taxation. Although according to Polish law (The Act on Revenues of the Local Territorial Units[4], 2003), the shares of PIT and CIT received by the municipalities are classified as "own revenues", the literature is uniform that these revenues cannot be regarded as true own revenues (Swianiewicz, 2016).

Unconditional grants - vertical and horizontal - are the third main source of financing municipalities' public tasks. The purpose of horizontal unconditional grants is to equalize the economic differences among municipalities. The vertical unconditional grants are transferred from the central budget to municipalities, mostly in the form of the so called "educational subsidy", which in accordance to its name, is the most important source of financing the local expenses related to education.

Prior to each fiscal year, the local governments make decisions regarding current spending, revenues, investment activity, and debt policy. The role of the mayor[5] in local decision making process is quite significant. According to the provisions of the Municipal Self-Governance Act

---

[4] Ustawa o dochodach jednostek samorządu terytorialnego (2003)
[5] In Poland, the position of the mayor is named differently, depending on the character of the municipality. In case of cities with more than 400,000 inhabitants, the highest-ranking official is the „prezydent"; in smaller cities and in mixed, urban-rural municipalities, this position is held by the „burmistrz" and in rural municipalities, by "wójt".

(1990), the mayor plays a prominent role in the early stages of the budgetary process, and puts forward a budget proposal for the local council. The councilors are however free to make amendments and to work out alternative budget proposals; the final budget has to be accepted by the local council. After the municipal council or in towns, the town council passes the budget in a form of resolution, the mayor is responsible for its realization (The Public Finance Act, 2009) [6].

Since 2002 the mayors of municipalities are elected by universal suffrage, have exercised all executive and management powers. Currently, a local referendum is necessary to dismiss the mayor before the end of his term. Municipal councils have the powers traditionally associated with the regulatory and policy-making bodies The municipal council also controls the activities of the mayor and can block some of the mayor's action by refusing to approve the draft budget. The local public finances are subject to national regulations regarding the size of public deficit and debt (Galiński, 2015). The Public Finance Act (2009) imposes a relation between the overall national public debt and local budgetary deficits. When the total public debt is between 55% and 60% of GDP, the local current public spending cannot exceed the municipalities' revenues; and when the total public debt exceeds 60%, the total local spending (including investments) needs to be equal to local revenues.

In 2014 a new fiscal rule has been implemented that has imposed local debt limits, which are estimated separately for each local government. The rule holds, that the ratio of debt servicing costs in a given year to revenues in the same year cannot exceed the average operating surplus (the difference between current revenues and current expenditure) calculated for three previous years individually for each municipality (Public Finance Act, 2009)

The political scene of municipalities is shaped by elections held every 4 years. During elections, both the mayor and the council are elected by the citizens. Until present, 4 elections were held: in year 2002; 2006; 2010; 2014. In case of mayoral elections, if the first-ballot is indecisive (no candidate receives more than 50% of votes) the second, run-off election is being held, in which the two leading candidates compete. As already said above, in between elections, the mayor may be recalled only by the citizens in the local referendum.

The political parties have weak local structures and are not attractive on the local electoral market; as a result more experienced local politicians are less dependent on political parties. More than half of mayors and local councillors are not affiliated with any political party. Among political parties in Poland, only those represented in national parliament count in local politics (Gendźwiłł and Żółtak, 2014, Gendźwiłł, 2012).

5. *Description of data and regressions' results*

The goal of our empirical research is to assess the impact of revenue decentralisation (or revenue autonomy) on fiscal discipline of the local territorial units, using the sample of over 2400 Polish municipalities, over the years 2002-2014. We also aim to verify the hypothesis that

---

[6] Ustawa o finansach publicznych (2009)

the relationship between decentralisation and fiscal balances depends on the characteristics of the political scene.

Precisely, the questions, which we want to answer are the following: do municipalities with higher level of revenue autonomy are characterised by higher fiscal discipline? Do the political variables interact with measures of fiscal decentralisation? The estimations are based on both the annual data and on 4-year averages.

5.1 Data

Our data comes from three sources: the data on local revenues and expenditures is from the Polish Ministry of Finance; the data on local demographic characteristics has been taken from the Local Database of Central Statistical Office (Bank Danych Lokalnych GUS) and data on political variables were provided by the National Electoral Commission (Państwowa Komisja Wyborcza)

The dependent variable is the fiscal balance of municipality *i* in time t (fb_{it}), measured as a difference between total revenues and current expenditures of the local government of municipality i, where current spending is defined as total spending minus investment spending. To make this number comparable across different local units, we divide it by total revenues of the municipality. Hence, fiscal balance is given by:

1. $fb_{i,t} = \dfrac{(\text{total spending}_{i,t} - \text{investment spending}_{i,t}) - \text{total revenue}_{i,t}}{\text{total revenue}_{i,t}}$

Our main explanatory variable is the revenue autonomy of each municipality. It is measured by the share of own revenues in total revenues of the territorial unit, where own revenues are defined as taxation over which the local government has discretion in establishing both the tax rate and the tax base (see, for example (Asatryan et al., 2015; Baskaran, 2012; Thornton, 2009).

In Poland, as we have already stated above, own revenues as defined by the law include: the property tax, the agricultural tax, the forest tax, the tax on means of transport, the tax on civil law transactions, tax imposed on dog owners, the tax card and PIT and CIT (Public Finance Act, 2009). However, since the regulations regarding PIT and CIT are established at the central level and the local territorial units do not have any control over the tax rate, we exclude them from own revenues. This "deviation" from the official definition of own revenues is common in the literature that studies decentralisation in Poland (Swianiewicz, 2016).

We differentiate between "de facto" and "de jure" revenue decentralisation (autonomy), which is a novelty of this study. "De jure" revenue decentralisation of a municipality measures the share of own revenues to which the local government is entitled to, in total revenues of a municipality, i.e. before any tax exemptions have been granted.

2. $De\ jure\ RD_i = \dfrac{own\ revenues\ of\ municipality\ i}{total\ revenues\ of\ municipality\ i}$

"De facto" revenue decentralisation is the actual share of own revenues in total revenues of a municipality, i.e. after the municipality has implemented its own tax policy. We are able to make this distinction, as we have exact data on the amount of tax exemptions that each municipality has granted during a given year.

3. $De\ facto\ RD_i =$
$$\frac{potential\ own\ revenue\ of\ municipality\ i_i - tax\ exceptions\ granted\ by\ municipality\ i}{total\ revenue\ of\ municipality\ i}$$

The median "de facto" fiscal decentralisation is 28% of total revenues, while the median measure "de jure" decentralisation is 32%. In 10% of municipalities with the lowest degree of fiscal decentralisation, the "de facto" decentralisation does not exceed 16%, while "de jure" decentralisation – 21%. In 10% of municipalities with the highest degree of fiscal decentralisation, the "de facto" decentralisation is above 42%, while "de jure" decentralisation is above 46%.

As we have already stressed, to make sure that the results are robust, we also model the characteristics of the local political scene. The data contains among others, the information on the number of candidates for the mayoral elections, which were held in year 2002, 2006, 2010 and 2014. In total, we observe 9775 elections for 2,448 municipalities. More than 9 percent of all elections are single-candidate elections, while about 24 percent had 2 or 3 candidates, 18 % had 4 candidates, and less than 27 % had 5 or more candidates. The level of turnover has decreased over the years in elections. Incumbents are significantly more likely to win compared to challengers, and this incumbency advantage has increased after the 2000's. The average incumbent turnover is only about 31%, although there is considerable variation in the degree of incumbent turnover across municipalities.

The database contains also the information on the gender, age, educational attainment, political affiliation of all the candidates.

This allows us to utilise the following indicators: a measure political fragmentation at the elections, which on one hand measures political competition and on the other might indicate a high diversity of political interests and a fragmentation of the council, the number of members in the municipal or town council, the level of educational attainment of the mayor, and her/his membership in a party.

To measure political fragmentation and political competition, we follow Alfano and Baraldi, (2015). Firstly, we calculate a Herfindahl index, equal to the sum of the squared vote shares of all candidates in the mayoral election in a municipality. The Herfindahl index, ranging from 0 to 1 compares the concentration of votes in the hands of political candidates, with higher values corresponding to higher level of political competition, i.e. lower concentration of votes. More precisely, if the value of the index is high, it means that votes are spread over many political candidates of almost equal size and that no candidate strictly dominates over the others.

The value of the political competition index for municipality *i* is equal to one minus the Herfindal index described above:

4. $Pol\_comp_i = 1 - Herfindahl\ index = 1 - \sum_{p=1}^{n} U_p^2$

where U_p is the vote share of a candidate p (p = 1,...., n) at each municipal election.

We control also for the number of councilors in the municipal or town council (*council_fragm*). The number of councilors ranges from 15 to 60, depending on the size of municipality's population. This measure is closely related to the measure of political fragmentation given by the number of decision-makers in the government. This measure has been used for example by Perotti and Kontopoulos (2002), who used the number of spending ministers.

To control for the individual characteristics of the politicians, we follow the literature (e.g. Dreher et al., 2009) and draw upon the education of politicians, firstly, by including a dummy variable equal to one if the mayor has higher education (*mayor_edu*) and secondly, by including the share of councillors with higher education (*council_edu*).

We also control for the membership of the elected mayor in a political party, to test whether the specific partisanship of the mayor matters for the shape of fiscal policy. We assign dummies if the mayor belongs to one of the 6 main national parties: SLD (Democratic Left Alliance) - a central–left party, PSL (Polish People's Party) - center-right party, PO (Civil Platform) - center, PiS right-wing party, (Law and Justice), Samoobrona (Self-Defence of the Republic of Poland) left-wing populist, LPR (League of Polish Families) nationalist and conservative party.

To ensure the robustness of our results, we also include several control variables, that control for the demographic and economic situation of municipalities: the logarithm of the size of population (*population*), the share of young people under 18 in the population (*young*), and the unemployment rate (*unemployment*). We also include a dummy variable equal to one for the 66 biggest cities which have a status of a country (*big city*).

The rationale for using these variables is as follows: unemployment rate is related to municipality's economic condition and business cycle fluctuations. Higher unemployment puts a strain on public finances, hence a negative correlation is expected.

The population size is expected to have an impact on public finances throughout two mechanisms. Firstly, bigger population is related to heterogeneity of preferences (see Neyapti, 2013) hence it might lead to higher spending and higher deficits. Secondly, in presence of increasing returns to scale in the provision of public goods, higher population might allow to lower public spending per capita and lower deficits. It is therefore difficult to establish the sign of the association, but the significant impact of the number of inhabitants on the level of public spending and has been confirmed in many empirical applications (for an overview, see Shelton, 2007).

The age structure of population also tends to influence the level of both public spending and tax revenues. The share of population below 18 influences the demand for schooling, nevertheless the sign of the correlation between this variable and fiscal balances is a priori unclear. Since the financing of the primary and lower secondary education in Poland is the exclusive responsibility of municipalities, thus a higher share of young people can put a strain on local public finances. On the other hand, municipalities receive transfers from the central

government to finance education, which are strongly tied to the number of pupils in given municipality. Since bigger schools and bigger average class size give rise to economies of scale, higher share of young people can improve fiscal situation of municipalities as on one hand, it leads to higher transfers from the central government, while on the other hand it could allow to use scale economies and decrease the per pupil spending on education.

The rationale for the inclusion of the dummy for the biggest cities is that these cities perform jointly the obligations of the municipality and the county. Therefore, their fiscal behaviour might be divergent from the remaining municipalities.

5.2 Results

Firstly, we estimate the impact of fiscal decentralisation of the fiscal balance, not controlling for political variables. We use annual data, for years 2002-2014; collected for all municipalities in Poland. Since, the fiscal balance is characterised by inertia, we rely on dynamic panel data estimation specification (Neyapti, 2013). As it is well known, the presence of the lagged dependent variable makes the fixed or random effects estimator inconsistent (see, for example Hayashi, 2000). The appropriate method, which is usually applied to model this kind of data is the GMM dynamic panel data estimation (see Arellano and Bond, (Arellano and Bond, 1991; Arellano and Bover, 1995).

The general form of the equation which we estimate, is the following:

5.

$$fb_{i,t} = \alpha + \beta * fb_{i,t-1} + \gamma RD^n_{i,t_{i,t}} * + \vartheta * Z_{i,t} + \omega * time_i + e_{i,t}$$

where the subscripts *it* represents the municipality (i) and year (t); fb stands for fiscal balance, RD are the measures of revenue decentralisation, where the superscript n=1,2 denotes the de facto or de jure measure; Z is a set of control variables.

We estimate the impact of fiscal decentralisation, using the system GMM estimator. We utilise the whole sample of all municipalities, as well as the subsamples of only urban and only rural municipalities, to make sure that the results are robust. Time dummies are always included, but the results, to save space are not shown. We rely on Hansen test to determine the validity of the instruments.

Table 1. The impact of revenue decentralisation on fiscal balances

	(1) All municipalities	(2) Urban municipalities	(3) Rural municipalities	(4) All municipalities	(5) Urban municipalities	(6) Rural municipalities
Y_{t-1}	0.675*** (0.0670)	0.423*** (0.156)	0.635*** (0.0566)	0.680*** (0.0676)	0.417*** (0.156)	0.650*** (0.0572)
De facto RD	0.271*** (0.0115)	0.271*** (0.0371)	0.299*** (0.0142)			
De jure RD				0.225*** (0.0109)	0.216*** (0.0360)	0.243*** (0.0132)
Unemployment	-0.000482** (0.000226)	-0.000911 (0.000867)	-0.000335 (0.000215)	-0.000475** (0.000222)	-0.00121 (0.000844)	-0.000407** (0.000206)
Population	-0.00839*** (0.000926)	0.000819 (0.00268)	0.00196 (0.00197)	-0.00660*** (0.000814)	0.000145 (0.00268)	0.00120 (0.00181)
Young	0.0645*** (0.00570)	0.0669** (0.0265)	0.0386*** (0.00684)	0.0573*** (0.00542)	0.0430* (0.0252)	0.0412*** (0.00635)
Big city	0.0250*** (0.00328)	0.0154*** (0.00554)		0.0264*** (0.00313)	0.0153*** (0.00565)	
Constant	0.164*** (0.0206)	0.118** (0.0555)	0.0327 (0.0209)	0.138*** (0.0199)	0.100* (0.0536)	0.0444** (0.0189)
Observations	29,350	3,648	18,779	29,339	3,647	18,779
No. of municipalities	2,448	305	1,566	2,448	305	1,566
Hansen stat.	6.81	14.49	7.14	6.68	13.86	7.84
P-value	0.657	0.11	0.623	0.670	0.127	0.550

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The results indicate that higher level of fiscal autonomy, measured by the share of own revenues in total revenues, improves the fiscal balance. The increase of fiscal autonomy by one percentage point improves the fiscal balance in relation to own revenues on average by around 0,22-0,27 percentage point. Hence, an increase of fiscal autonomy by 10 percentage points will improve the fiscal balance by over 2 percentage points. The distinction between "de facto' and "de jure" measures does not bring very different results; the results remain robust also when we limit the sample to just rural or just urban municipalities.

The remaining variables have the expected impact. The lagged depended variable is highly significant. The size of population has a negative impact on fiscal balance, suggesting that higher population is related to more diverse and conflicting interests that stimulate fiscal

deficits. The share of young people in the population is related to lower fiscal deficits. This can be explained among others, by the construction of the so called "education subvention" received by the municipalities from the central government. The algorithm that divides this subvention between municipalities is based on the number of pupils going to schools in the municipality. Therefore, higher share of young people usually implies higher education subvention per capita; while in the same time it allows to profit from economies of scale in providing education services (Herbst et al., 2009).

These results suggest that higher degree of fiscal decentralisation (autonomy) is related to more prudent fiscal policy. The inclusion of "de jure" measure shows that these results are not driven by policy choices of the local units. These results are also robust across different samples.

To further check the robustness of these conclusions, the next table presents the results, where we control for political variables. Since the data on political competition index is observed only in election years, i.e. 2002, 2006, 2010 and 2014, we chose to average the data over 4-year periods, with each period starting at the election year. This approach provides us with yet another valuable robustness check - the impact of fiscal decentralisation is tested over longer periods of time, therefore eliminating to a large degree the impact of cyclical factors.

More precisely, we estimate

1. $fb_{i,T} = \alpha + \gamma RD_{i,T} * + \vartheta * Z_{i,T} + \mu * Pol_{i,T} + \delta * Pol_{i,T} * RD_{i,T} + \omega * time_i + e_{i,T}$

where the subscript i,T stands for municipality i (as before) and T denotes consecutive four-year averages: 2002-2005; 2006-2009; 2010-2013. For the last period we have just one observation: for the year 2014. We chose to include it as well, however, to check the robustness of the results, we have also run estimations, that have excluded the observation for 2014 and the results were similar. Time dummies have been included, but to save space the results were not shown.

Since the data has a more long-run character, we resign from the dynamic specification and utilise a fixed effect estimator, with robust standard errors. The validity of the fixed effects, as opposed to random effects estimator, has been corroborated by the Hausman test.

Table 2. Fiscal decentralisation, political scene and fiscal balances; 4-year averages.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
De facto RD	0.325***	0.351***	0.388***			
	(0.0250)	(0.0367)	(0.0432)			
De jure RD				0.188***	0.211***	0.448***
				(0.0242)	(0.0348)	(0.0415)
Population	-	-	-	-	-	-
	0.0589***	0.0691***	0.0693***	0.0714***	0.0838***	0.0702***
	(0.0214)	(0.0189)	(0.0188)	(0.0217)	(0.0191)	(0.0188)
Young	-0.0126			-0.0191		
	(0.0237)			(0.0242)		
Unemployment	-6.08e-05			-0.000305		
	(0.000400)			(0.000406)		
Pol_comp	-	-	-0.00289	-	-	-
	0.0267***	0.0247***		0.0284***	0.0265***	0.0422***
	(0.00348)	(0.00396)	(0.0104)	(0.00355)	(0.00397)	(0.0108)
Council_fragm	-0.00109			-0.00115		
	(0.00121)			(0.00120)		
De facto RD*pol_comp			-0.0790**			
			(0.0352)			
De jure RD*Pol_comp						-0.210***
						(0.0315)
Mayor_edu	0.00224			0.00156		
	(0.00234)			(0.00240)		
Council_edu	-0.00650			-0.00561		
	(0.00651)			(0.00667)		
Constant	0.627***	0.717***	0.710***	0.767***	0.883***	0.702***
	(0.214)	(0.174)	(0.174)	(0.218)	(0.177)	(0.173)
Mayor's party included	yes	no	no	yes	no	no
Observations	9735	9,775	9,775	9,735	9,775	9,775
R-squared	0.088	0.086	0.087	0.054	0.052	0.094
No. of municipalities	2,448	2,448	2,448	2,448	2,448	2,448

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The main results proved to be robust. Higher revenue autonomy – both "de facto" and "de jure" is related to stronger fiscal position.

The inclusions of political variables provides more interesting insights into determinants of fiscal deficits. Political competition index has a significant and negative impact, indicating that tighter elections lead to deterioration of fiscal balances. This gives support to the literature that argues that political competition leads to pork-barrel policies and shortens the time horizon of the policymakers, leading to deterioration of fiscal balances.

Political fragmentation measured by the number of the councillors turned out to be insignificant. As this number depend on the size of population, we have also estimated its impact with the log of population excluded from the right hand side variables. The results were similar – this variable remained insignificant.

The political party dummies, which signal the partisanship of the mayor, turned out to be insignificant. To save space, we chose not to show the results – the political party dummies have been included in estimations, which are reported in columns 1 & 4. In remaining estimations they were excluded.

Mayor's education and the share of councilors with higher education has no significant impact on public deficit.

We have also tested whether the interactions between fiscal decentralisation and political variables are significant. Columns 4 and 5 show that indeed they are. The product of the fiscal decentralisation index (both de jure and de facto) and political competition is significant and negative.

This suggest an interesting phenomenon – decentralisation strengthens the negative impact of political competition on fiscal imbalances. High political competition in an environment of higher decentralisation will lead to even bigger fiscal imbalances. This could be explained by the proposition that higher decentralisation gives the policymakers more discretion over shaping the fiscal balance and when political competition is tight, incumbent policymakers will use this discretion to run higher deficits, in order to win the elections.

What is worth highlighting is that this result shows that the effects of fiscal decentralisation may depend on the shape of political scene. Higher political competition diminishes the positive impact of fiscal decentralisation, what might explain the conflicting empirical results found in the literature that focuses in the impact of fiscal decentralisation on fiscal discipline.

6. Conclusions

This work has shown that higher degree of fiscal decentralisation, measured by the share of own taxation in total revenue is related to more fiscal discipline at the local level. This result is robust, and does not change, if instead of the "de facto" own revenues, we use the " "de jure" measure of fiscal decentralisation. Since the study focuses on singe country case, these results are not driven by differences in cultural or institutional factors, which are often difficult to control for.

However, we have also found that the level of political competition interacts with fiscal decentralisation. Higher political competition not only leads to higher fiscal deficits, but the effect is stronger, when the revenue decentralisation is higher. Therefore, the overall effect of revenue autonomy on fiscal balances is not uniform, but depends on the strength of political competition. Hence, it is possible that higher fiscal autonomy coupled with strong political competition might lead to higher fiscal deficits.

These results give rise to important policy implications: although it seems that revenue decentralisation leads to higher degree of fiscal prudence at the local level, this relationship is not straightforward. It depends on the characteristics of the political scene, namely the degree of political competition. If decentralisation is prescribed as a cure for fiscal imbalances, it should be applied carefully, as the results might be divergent.

References

Acemoglu, D., & Robinson, J. A. (2006). Economic backwardness in political perspective. American Political Science Review, 100(01), 115-131.

The Act of 27 August 2009 on public finance (PFA), Poland: Journal of Laws. (2009), vol. 157, item 1240, with amendments, art. 242-243.

Alfano, M. R., & Baraldi, A. L. (2015). Is there an optimal level of political competition in terms of economic growth? Evidence from Italy. European Journal of Law and Economics, 39(2), 263-285.

Arellano, M., Bond, S., 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. Review of Economic Studies 58, 277–97.

Arellano, M., Bover, O., 1995. Another look at the instrumental variable estimation of error-components models. Journal of Econometrics 68, 29–51.

Asatryan, Z., Feld, L., Geys, B., 2015. Partial fiscal decentralization and sub-national government fiscal discipline: empirical evidence from OECD countries. Public Choice 163, 307–320.

Asatryan, Z., Feld, L., Geys, B., 2015. Partial fiscal decentralization and sub-national government fiscal discipline: empirical evidence from OECD countries. Public Choice 163, 307–320.

Bardhan, P., & Yang, T. T. (2004). Political competition in economic perspective. Working paper.

Baskaran, T., 2012. Tax Decentralization and Public Deficits in OECD Countries. Publius: The Journal of Federalism 42, 688–707. doi:10.1093/publius/pjr051

Baskaran, T., 2010. On the Link Between Fiscal Decentralization and Public Debt in OECD Countries (MPRA Paper No. 21599). University Library of Munich, Germany.

Besley, T., Case, A., 2003. Political Institutions and Policy Choices: Evidence from the United States. Journal of Economic Literature 41, 7–73. doi:10.1257/002205103321544693

Besley, T., Case, A., 1995. Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition. American Economic Review 85, 25–45.

Besley, T., & Ghatak, M. (2005). Competition and incentives with motivated agents. The American economic review, 95(3), 616-636.

Borge, L. (2005). Strong politicians, small deficits: evidence from Norwegian local governments. European Journal of Political Economy, 21 (1), 325–344

Brennan, G., Buchanan, J.M., 1977. Towards a tax constitution for Leviathan. Journal of Public Economics 8, 255–273. doi:10.1016/0047-2727(77)90001-9

Brueckner, J.K., 2009. Partial fiscal decentralization. Regional Science and Urban Economics 39, 23–32. doi:10.1016/j.regsciurbeco.2008.06.001

Buchanan, J.M., Wagner, R.E., 1977. Democracy in deficit: the political legacy of Lord Keynes. Academic Press, New York.

de Mello, L.R., 2000. Fiscal Decentralization and Intergovernmental Fiscal Relations: A Cross-Country Analysis. World Development 28, 365–380. doi:10.1016/S0305-750X(99)00123-0

Edwards, J., Keen, M., 1996. Tax competition and Leviathan. European Economic Review 40, 113–134. doi:10.1016/0014-2921(95)00057-7

Eyraud, L., Lusinyan, L., 2013. Vertical fiscal imbalances and fiscal performance in advanced economies. Journal of Monetary Economics 60, 571–587. doi:10.1016/j.jmoneco.2013.04.012

Ferejohn, J. (1986). Incumbent performance and electoral control. Public choice, 50(1), 5-25.

Foremny, D., 2014. Sub-national deficits in European countries: The impact of fiscal rules and tax autonomy. European Journal of Political Economy 34, 86–110.

Freitag, M., Vatter, A., 2007. Decentralization and Fiscal Discipline in Sub-national Governments: Evidence from the Swiss Federal System. Publius: The Journal of Federalism 38, 272–294. doi:10.1093/publius/pjm038

Galiński, P. (2015). Determinants of Debt Limits in Local Governments: Case of Poland. Procedia-Social and Behavioral Sciences, 213, 376-382.

Gendźwiłł, A. (2012). Independent Mayors and Local Lists in Large Polish Cities: Towards a Non-partisan Model of Local Government?. Local Government Studies, 38(4), 50.

Gendźwiłł, A., & Żółtak, T. (2014). Why Do Non-partisans Challenge Parties in Local Politics? The (Extreme) Case of Poland. Europe-Asia Studies, 66(7), 1122-1145.

Geys, B. (2007). Government weakness and electoral cycles in local public debt: Evidence from Flemish municipalities. Local Government Studies, 33(2), 237-251.

Goodspeed, T.J., 2002. Bailouts in a Federation. International Tax and Public Finance 9, 409–421. doi:10.1023/A:1016563902580

Hayo, B., & Neumeier, F. (2014). Political leaders' socioeconomic background and fiscal performance in Germany. European Journal of Political Economy, 34, 184-205

Hayo, B., & Neumeier, F. (2012). Leaders' impact on public spending priorities: The case of the German Laender. Kyklos, 65(4), 480-511.

Jones, B. F., & Olken, B. A. (2005). Do leaders matter? National leadership and growth since World War II. Quarterly Journal of Economics, 120, 835–864.

Hayashi, F., 2000. Econometrics. Princeton University Press, Princeton.

Herbst, M., Herczyński, J., Levitas, A., 2009. Finansowanie oświaty w Polsce - diagnoza, dylematy, możliwości, Wyd. 1. ed. Wydawn. Naukowe "Scholar," Warszawa.

Keen, M., Marchand, M., 1997. Fiscal competition and the pattern of public spending. Journal of Public Economics 66, 33–53. doi:10.1016/S0047-2727(97)00035-2

Lizzeri, A., & Persico, N. (2005). A drawback of electoral competition. Journal of the European Economic Association, 3(6), 1318-1348.

Mikosch, H. F., & Somogyi, F. S. (2009). Individuals vs. institutions. The impact of political leaders' education and profession on public deficits. ETH Zurich, mimeo.

Musgrave, R.A., 1985. Excess bias and the nature of budget growth. Journal of Public Economics 28, 287–308. doi:10.1016/0047-2727(85)90061-1

Neyapti, B., 2013. Fiscal decentralization, fiscal rules and fiscal discipline. Economics Letters 121, 528–532. doi:10.1016/j.econlet.2013.10.006

Neyapti, B., 2010. Fiscal decentralization and deficits: International evidence. European Journal of Political Economy 26, 155–166. doi:10.1016/j.ejpoleco.2010.01.001

Perotti, R., Kontopoulos, Y., 2002. Fragmented fiscal policy. Journal of Public Economics 86, 191–222. doi:10.1016/S0047-2727(01)00146-3

Persson, T., & Svensson, L. E. (1989). Why a stubborn conservative would run a deficit: Policy with time-inconsistent preferences. The Quarterly Journal of Economics, 325-345.

Persson, T., Tabellini, G., 2002a. Political economics and public finance (Handbook of Public Economics). Elsevier.

Persson, T., Tabellini, G., 2002b. Political Economics: Explaining Economic Policy (MIT Press Books). The MIT Press.

Plekhanov, A., Singh, R., 2006. How Should Subnational Government Borrowing Be Regulated?Some Cross-Country Empirical Evidence. IMF Staff Papers 53.

Ribeiro, N. A., & Jorge, S. (2015). Political-Ideological Circumstances and Local Authorities' Debt: Evidence from Portuguese Municipalities.Contemporary Economics, 9(2), 155-170.

Rodden, J., 2002. The dilemma of fiscal federalism: grants and fiscal performance around the world. American Journal of Political Science 670–687.

Rogers, D.L., Rogers, J.H., 2000. Political Competition and State Government Size: Do Tighter Elections Produce Looser Budgets? Public Choice 1.

Rogoff, K. (1990). Equilibrium political budget cycles. The American Economic Review, 80 (1), 21–36.

Roodman, D., 2006. How to Do xtabond2: An Introduction to "Difference" and "System" GMM in Stata (Working Paper No. 103). Center for Global Development.

Solé-Ollé, A. (2006), "The effects of party competition on budget outcomes: empirical evidence from local governments in Spain", Public Choice, Vol. 126, pp. 145- 176.

Solé-Ollé, A., & Viladecans-Marsal, E. (2012). Lobbying, political competition, and local land supply: recent evidence from Spain. Journal of Public Economics, 96(1), 10-19.

Schaltegger, C.A., Feld, L.P., 2009. Are fiscal adjustments less successful in decentralized governments? European Journal of Political Economy 25, 115–123. doi:10.1016/j.ejpoleco.2008.08.002

Strauch, R.R., Hagen, J. von, 2012. Institutions, Politics and Fiscal Policy. Springer Science & Business Media.

Swianiewicz, P. (2016). The Politics of Local Tax Policy-Making in Poland. NISPAcee Journal of Public Administration and Policy, 9(1), 167-189.

Thornton, J., 2009. The (non)impact of revenue decentralization on fiscal deficits: some evidence from OECD countries†. Applied Economics Letters 16, 1461–1466. doi:10.1080/13504850701564298

Tovmo, P. (2007). Budgetary procedures and deficits in Norwegian local governments. Economics of Governance, 8(1), 37-49.

Wibbels, E., 2000. Federalism and the Politics of Macroeconomic Policy and Performance. American Journal of Political Science 44, 687–702. doi:10.2307/2669275

Wilson, J.D., Wildasin, D.E., 2004. Capital tax competition: bane or boon. Journal of Public Economics 88, 1065–1091. doi:10.1016/S0047-2727(03)00057-4