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Off-budget revenues and debt limit in municipalities in the Wielkopolska

Abstract: The paper aims to assess whether the size of municipal off-budget activities carried out by municipally-owned companies (MOCs) depends on the municipality's outstanding debt and unused debt capacity. The fiscal debt rule limits municipal debt capacity based on the individual debt ratio. In other words, the article attempts to establish whether and to what extent the size of off-budget financing through fees for local public services provided by MOCs depends on the municipality's financial situation. We use panel data of 89 municipalities in Wielkopolska voivodeship (499 observations) retrieved from consolidated financial statements, reports on surplus/deficit of municipalities for 2010–2018, the Bank of Local Data and information on the MOC's ownership structure and revenue volume obtained from the Orbis database. The models were estimated by the General Method of Moments (GMM) on a total sample of all municipal shareholders of MOCs in the Wielkopolska voivodeship. We show that municipalities shifted off-budget activities in response to fiscal debt limit restrictions valid since 2014 and election years. Furthermore, the structure and size of budgeted activity are linked to municipal activities' relative opportunity costs. It is because increasing municipal fees generates lower political costs than raising taxes or local fees. Thus, we show that the fiscal debt constraint introduced in 2014 raises the scale of shifting expenditure off-budget using MOCs in the Wielkopolska voivodeship.

Key words: local government, fiscal debt constraint, off-budget activity, municipally-owned companies, Wielkopolska

Introduction

The paper considers the issue of off-budget activity of the local government as the effect of the exclusion of municipally owned companies' debt public from the fiscal debt limit. It identifies whether municipalities in Wielkopolska use municipally owned companies (MOCs) to carry out tasks related to satisfying the needs of inhabitants and bypass the fiscal debt rule.

Research on the growth of the public sector is one of the research areas of public choice, looking for an answer to how much "state" is in the state. The public sector's growth seems universal at all levels, as the *Fiscal Monitor* report prepared by International Monetary Fund (IMF, April 2020) indicates. Many competing and complementary hypotheses have been proposed to explain the growth of the public sector, including Wagner's law, rent-seeking and the fiscal illusion. The effectiveness of different constraints to control the size of the public sector and, in particular, public spending has been studied in the literature. Among the studies questioning the effectiveness of different fiscal rules imposed on local governments or states, we can point to the analyses carried out by Kotia, Duarte Lledó (2016), Foremny (2014), Cuadrado-Ballesteros et al. (2013), Rodden et al. (2003), Sutherland et al. (2005), Marlow and Joulfaian (1989), Abrams and Dougan (1986), Stein et al. (1983), Bennett and DiLorenzo (1982), Bails (1982) and Toma and Toma (1980).

It is worth stressing that data on employment in the public sector and simple ratios of public expenditure to GDP do not fully reflect the size of the public sector. Government expenditure is financed from many sources, but many areas of government activity escape simple evaluation (legal regulations, allocation of resources through subsidies and legislation).

Among the many studies related to the size of the public sector, some point to the specific situation of decentralised public finances. However, although decentralisation is promoted to improve public sector efficiency, it raises several problems. Some studies show that the public sector grows with decentralisation, including the public sector deficit (De Mello 2000). Therefore, various restrictions are introduced to control local government spending. Among these are fiscal rules on local government debt.

The issue of measurement is essential for understanding the public sector. Moreover, it is crucial for the possibility of empirical testing of relevant research hypotheses from the point of view of the effectiveness and efficiency of fiscal rules. They include the debt rule introduced in the amended Polish Public Finance Act in 2009, being in force since 2014 (Article 242 of the Public Finance Act of 27.08.2009, Journal of Laws of 2017, item 2077 as amended). In addition to the fiscal debt rule based on individual debt ratio, the Public Finance Act 2009 introduced constraints on the current budget deficit. The individual debt ratio (IWZ) replaced two limits in force until 2013 concerning (1) the level of total debt, which could not exceed 60% of the local government's revenue; (2) the level of debt service, which could not be higher than 15% of the local government's revenue. These limits were criticised for not taking into account the individual financial situation of each local government unit. On the other hand, the IWZ indicator was expected to differentiate the debt capacity of local governments better than the previous ones, although there were also voices of criticism (Poniatowicz 2011, Marchewka-Bartkowiak, Wiśniewski 2012, RIO 2014, Tetla 2016).

Undoubtedly, the fiscal debt rule based on IWZ is more restrictive for most local government units. Therefore, a 5-year adjustment period was introduced, and the law became effective only from 2014 (Kopańska, Kopyt 2018).

The pandemic and lockdown introduced in 2020 highlighted the importance of the state's role in the face of crisis and health risks (Cho et al. 2020, Grossi et al. 2020). As a result, there has been a renewed discussion on the legitimacy and significance of the public debt limits set by the Constitution, especially in Poland. Furthermore, as municipal indebtedness translates into public debt and the tools of creative accounting and off-budget financing are used at the state and the local government level, the issue addressed in this paper becomes topical and gains in importance.

The paper aims to assess whether the size of off-budget activities of municipalities carried out by MOCs depends on the municipality's outstanding debt and unused debt capacity, limited by the fiscal debt rule based on the so-called individual debt ratio (IDR) of the municipality. In other words, the paper tries to establish whether and to what extent the size of off-budget financing through fees for local public services provided by MOCs depends on the financial situation of the local government.

The empirical study was conducted on data of 89 municipalities and cities with county rights in Wielkopolska voivodeship for 2010–2018. We obtained data from municipal financial statements available on the website of the Ministry of Finance (statement of surplus/deficit of local government (RB-NDS), data from consolidated balance sheets (B-Skon), Local Data Bank (BDL data) and information on the ownership structure and revenue size of their municipal companies from the Orbis database provided by Bureau van Dijk. Panel models were estimated using the General Method of Moments (GMM) on the data of all municipal shareholders of MOCs that generated positive revenue in the Wielkopolska voivodeship.

The structure of the paper is as follows. In the first part, the literature review is provided, and research hypotheses are formulated; the second section visualises data on the geographical location of Polish municipalities and the number of owned municipal companies. The third part provides examples of MOCs owned by Poznań – the city with county rights. The fourth section discusses data sources, definitions and descriptive statistics of variables. The fifth section describes the research design, and the sixth verifies the research hypotheses and interprets the results. Finally, the last section formulates the conclusions from the conducted research.

Literature review

In the literature, the increase in the size of the public sector has been explained by several competing and complementary hypotheses, such as Wagner's Law (Wagner 1893), Olson's particular interest group formations (Olson 1982), bureaucratic monopoly power (Niskanen 1971), rent-seeking (Weede 1984), fiscal illusion (Buchanan, Wagner 1977), crises (Higgs 1985), legislative specialisation (Crain et al. 1985), an extension of the voting franchise (Meltzer, Richards 1983), demand for state welfare (Bordo, Landau 1987) and decentralisation of public finance. However, although decentralisation improves the efficiency of the public sector, it raises problems of increasing public sector deficits (De Mello 2000). Therefore, various restrictions (fiscal rules) are introduced to control local government expenditure or debt.

Bennett and DiLorenzo (1982) argue that local governments avoid tax constraints and fiscal spending restrictions by placing significant spending outside the budget. They have shown that relative price (cost) and policy constraints affect local government expenditure and its off-budget shifting (circumventing the limitations imposed by fiscal rules through off-budget activities implemented by municipal companies). Marlow and Joulfaian (1989) analysed the relationship between budgetary and non-budgetary activities of state and local self-governments to explain the determinants of the choice of total budget allocation. The study was conducted on data from 18 US states, including Arizona, California, Colorado, Hawaii, Idaho, Louisiana, Michigan, Missouri, Montana, Nevada, New Jersey, Oregon, Rhode Island, South Carolina, Tennessee, Texas, Utah and Washington. Alaska was omitted. The results suggest that budgeted expenditures strongly influence the amount of off-budget spending and the scale (size) of off-budget activities. Furthermore, it was found that local governments with relatively 'large' budget expenditures also tend to have larger off-budget activities carried out by public enterprises, including municipal companies or government foundations. The actions of such public enterprises include energy, energy supply (electricity), gas, water and sewage services (wastewater) and transport services.

Literature on the size of the public sector usually measures public sector activities (expenditures) relative to government revenue or population. However, the government's contribution to the economy far beyond its expenses does not go unrecognised. While off-budgetary items reflect the differential disposition of not always consistent government policy objectives, they affect the allocation of resources. As a result, measuring the size of the state has traditionally led to an underestimation of the impact of the public sector on resource allocation, and this issue seems inevitable to permeate empirical research by introducing measurement error. Furthermore, off-budgetary enterprises effectively avoid taxpayers' control over public spending (Bennett, DiLorenzo 1982). Because debt, spending and additional revenue do not require voter approval, politicians feel incentivised to "go off-budget" and increase off-budget activity. The results of a study conducted for the United States indicate that the so-called "tax revolts" that led in the 1970s to restrict the ability of local governments to raise local taxes to increase fiscal discipline led to the growth of the local government sector.

Creating MOCs to transfer local services outside the budget allows for circumventing the fiscal constraints on a large scale (Bennett, DiLorenzo 1982). Evidence that local and state governments deliberately avoid tax revenue and public expenditure constraints has been provided by earlier studies (Bails 1982, Abrams, Dougan 1986). At the federal level, Marlow and Manage (1987) showed that existing public debt limits did not stop Congress from approving higher ceilings as soon as they became binding. Moreover, the 1980s saw a significant increase in off-budget activity.

Marlow and Joulfaian (1989) analyse two factors that determine the salient features of a financing constraint: the relative costs of different financing sources and the impact of supply-side factors. Regarding the first factor, it is concluded that the optimal use of financing parameters depends on the relative costs of taxes, debt issuance, off-budget revenues, subsidies, etc.

The political costs of increasing local taxes and charges are usually higher than the costs of growing direct charges for purchased municipal services provided by MOCs. They may lead to a loss of votes (support) from voters. Therefore, when authorities choose between increasing taxes – which may be met with voter reluctance – or rising debt, they choose the latter. But when the debt becomes too high (the cost of servicing it becomes high, placing an excessive burden on current and future generations), they choose to increase taxes. Additionally, when debt is more expensive in the market (e.g. issuing bonds during a period of high-interest rates), citizens may fear that this debt will affect the operation of the local government in the future (Buchanan 1997). Finally, it should be made clear that the conclusions of studies for the US will not necessarily be the same as for European countries, nor as evident for European conditions. This is because, in the US, the freedom of local government units to shape taxes (even if limited) is much greater than in most European countries. Another difference is referendums on finance in the US, which do not exist in Europe (apart from Switzerland).

Two examples suggest that changes in relative costs affect how a country is financed and grows regarding the second factor. First, more spending is financed by increased debt and less by tax revenues when politicians or citizens lower the restrictions on deficit financing (Buchanan, Wagner 1977). Second, deficit reductions may result from increasing the relative cost of financing expenditure growth through debt issuance (Marlow, Manage 1987). These examples suggest that supply-side institutional considerations, such as constraints on tax revenue formation, expenditure restraint, and balanced budgets, can affect the relative cost of financing and the size and composition of the public sector.

Marlow and Joulfaian (1989) hypothesise that the size of off-budget activity is related to the demand for all state activity and the relative costs of different forms of financing. It is shown that states with high public spending tend to favour a relatively large government sector. Since it is assumed that politicians do not have a non-cost-related preference for how public activities are financed, the size of budget expenditure is one way of measuring demand for public services. It measures the share of the public sector in a given state (country). States with large public expenditures are assumed to prefer a relatively large public sector overall, and politicians' preferences for off-budget activities are supposed to be based on relative costs. For that, budget expenditures are determined by demand, which depends on the median income of the residents, the population size and density, and the population's education. Variables describing the population of residents also affect off-budget activities (public services provided by MOCs). Explaining the OFF variable (volume of off-budget activity per capita) by the ON variable (budget expenditure per capita) avoids potential problems of collinearity between the ON variables (budget expenditure) and the corresponding variables related to the demand for public services. To the extent that federal subsidies reduce the price of public services and local government activity, larger contributions, defined as the ratio of federal to state and local revenues, should be associated with a reduced need to "hide" off-budget activities and result in lower off-budget activities. Evidence that subsidies to local governments reduce the price (cost) perception of taxes can be found in the literature (Winer 1983, Logan 1986).

In states where legislatures strongly prefer a sizeable public sector, the presence of public spending limits should lead to an expansion of off-budget activities. A binary variable for fiscal constraints (rules) was used to argue that growth in off-budget activity is associated with restrictions on the scope of tax revenue formation and fiscal rules on expenditure (Bennetta, DiLorenzo 1982).

While Misiolek and Elder (1988) showed that tax-shaping restrictions and fiscal rules on spending significantly impacted public budgets, Abrams and Dougan (1986) did not confirm their effectiveness. For those who believe that discretionary tax and expenditure restrictions are ineffective in controlling public budgets, a dummy variable indicating the presence of such a fiscal rule should not have a statistically significant effect on off-budget activity. A positive sign at this dummy variable would confirm the hypothesis of Bennett and DiLorenzo (1982) that such fiscal constraints on tax revenue formation and restrictions on public spending lead to increased off-budget activity. US research suggests that debt financing can create the fiscal illusion of a low tax burden, raising expectations about the need to "hide" off-budget spending. The structure and complexity of tax systems are one way to create a fiscal illusion (Wagner 1893, Pommerehne, Schneider 1978, Breeden, Hunter 1985, Feenberg, Rosen 1987). Therefore, debt, defined as the ratio of (outstanding) debt to total revenue, is expected to hurt the volume of off-budget activity. It should be noted that the above arguments seem less evident in Europe, where local government fiscal policy is heavily constrained. The phenomenon of local governments (LGs) running off-budget through the activities of MOCs (or into debt) is rather related to legal constraints (fiscal rules) and the inadequacy of revenues to expenditures, etc. It can be said that European politicians tend to promote themselves with spending for which they have limitations imposed by the Public Finance Act because they have low, dependent revenues. When the revenues of the member states are insufficient, they increase debt, but when debt limits appear, they expand off-budget activities. So in Europe, there is no (or very little) fiscal illusion in the American sense.

Marlow and Joulfaian (1989) also considered the impact of an increase in budgetary activity (budgetary expenditure) on the size of the off-budget activity. It was assumed that local governments experiencing the highest growth in budget expenditures have a greater need to increase the size of off-budget activities. Considering that there is no change in the relative cost burden of off-budget financing for the entire state relative to other funding sources, a faster increase in total financial needs should be associated with greater use of off-budget funding.

In Poland, local governments have limited possibilities to shape taxes or local public service fees. Therefore, the model does not analyse taxes but only debt and total revenue/expenditure. The capacity of Polish local governments to incur debt is not accessible in choosing the purposes of incurring debt and is not limited in terms of the amount of debt relative to the capacity to service it. Four legal restrictions on the deficit and debt of a local government unit are specified in the Public Finance Act (Article 242 of the Public Finance Act of 27th August 2009, Journal of Laws of 2017, item 2077 as amended). These restrictions specify:

- permissible sources to cover liabilities,
- the requirement to obtain the Regional Chamber of Auditors' opinion on the possibility of deficit financing,
- the limitation as to the amount of planned budget revenues of the units,
- the limitation of total LG's debt, which until 2013 could not exceed 60% of LG's revenues, determined at the end of each quarter according to the planned values and at the end of the budget year according to the executed values (Satoła 2012),
- the level of debt service, which could not be higher than 15% of LG's revenues (Kopańska, Kopyt 2018).

The increase in the indebtedness of the local authorities led to the introduction of the Public Finance Act of 2009, the prohibition of deficit in the current budget and a new so-called individual debt ratio (IDR) in the following form:

$$IDR_t = \frac{1}{3}\left(\frac{CRev_{t-3} + SRev_{t-3} - CE_{t-3}}{Rev_{t-3}} + \frac{CRev_{t-2} + SRev_{t-2} - CE_{t-2}}{Rev_{t-2}} + \frac{CRev_{t-1} + SRev_{t-1} - CE_{t-1}}{Rev_{t-1}}\right) \quad (1)$$

where:
CRev – current revenues,
SRev – revenues from the sale of tangible assets (property),
CE – current expenditures,
Rev – total revenues of the municipal budget,
t – fiscal year.

According to the budgetary accounting standards in force in Poland, MOCs are not subject to consolidation. Therefore, capital companies allow local governments to adjust flexibly to the restrictions imposed by the Public Finance Act by obtaining off-budget sources of financing (e.g. in the form of fees for public services provided by MOCs). On the other hand, in some European countries, e.g. Spain, municipal companies wholly owned by the local government are subject to consolidation. Therefore, Spanish local governments are looking for alternative ways to hide expenses outside the budget. They can do this, for example, by setting up foundations to carry out off-budget activities. This problem has been empirically investigated by Cuadrado-Ballesteros et al. (2013). First, the authors identified the causes of the functional decentralisation processes of local governments. Then, they made a complete analysis of them, taking into account corporatisation (establishment of municipal companies) and the creation of foundations, not subject to consolidation. For this purpose, a variable representing overall budget management was introduced. The period they considered

– 1999–2007 – allowed them to use panel data methods, which provide more reliable results than cross-sectional data tests. Estimators for panel data make it possible to control for heterogeneity in observations. Additionally, the Generalised Method of Moments (GMM) allows for avoiding problems with endogeneity between dependent and independent variables.

The study results are consistent with those obtained in previous studies using static and dynamic models on panel data, using the Generalised Method of Moments (GMM) estimator developed by Arellano and Bond (1991). Moreover, it provides new evidence on the relationship between the fiscal characteristics of a local government unit and the decentralisation process. For this purpose, the authors considered 153 Spanish municipalities with a population above 50,000 during the decentralisation process. More accurate results were obtained in models estimated separately on company and foundation data. This allowed a comparison of the determinants of the decentralisation process depending on the legal status (legal form) of the entities created (companies or foundations). The study results confirm the initial use of municipal decentralisation to transfer part of municipal debt to external agencies in Spain. These results are consistent with previous studies (Bennett, DiLorenzo 1984, Blewett 1984, Bunch 1991, Marlow, Joulfaian 1989). Thus, Spanish local governments, using the same motive of corporatisation (the implementation of public tasks through commercial MOCs) as in Germany (Bremeier et al. 2006) and Italy (Grossi, Mussari 2008), seek to escape from the traditional local government budgeting system with its built-in inefficient mechanisms of spending and transfer (redistribution) of resources. The results of the Cuadrado-Ballesteros et al. (2013) study are in line with Chan's (2003). They confirm that functional decentralisation (implementation of public tasks by separate smaller government agencies, e.g. local governments, instead of centrally through government agencies) can harm the transparency in spending. As a result, cases of corruption and opportunistic behaviour by authorities can be observed. However, the study results indicate that opportunistic behaviour ceases with legal restrictions (fiscal rules) on debt and accounting rules requiring local administrations to include public debt incurred by their agencies in their consolidated financial statements (Riherd 1995). In addition, this consolidated information guides decision-making on policy actions and increases accountability and transparency (Grossi, Mussari 2008, Grossi, Newberry 2009, Grossi, Pepe 2009, Grossi, Thomasson 2011).

Based on empirical evidence, Cuadrado-Ballesteros et al. (2013) highlight the need for stricter regulation in Spain, as politicians are increasingly using public foundations for the same purpose they have used MOCs for in the past: raising external funds (Tellier 2006). By distinguishing between direct and indirect taxes, they conclude that municipalities that collect high taxes from construction activities are not as interested in creating municipal companies as those that do not. Moreover, since they do not increase the public debt to implement their policies, they do not need to develop off-budget activities to hide institutional debt.

State-imposed restrictions in the 1970s did not reduce local government spending. Instead, they responded to restrictions on their ability to increase taxes and limit spending by shifting multi-billion dollar expenditures off-budget. They financed them through various 'off-budget enterprises' (OBEs), including MOCs (Bennett, DiLorenzo 1982).

The conclusion is that constitutional and statutory restrictions on LG's taxing and spending powers have significantly increased off-budget spending and borrowing outside of budget constraints. Since 1975, off-budget corporate debt has grown faster than voter-approved debt issued by state and local governments. While property tax and expenditure statistics may indicate a slowdown in local tax growth, the costs to local governments may continue to grow at the previous rate. Off-budget enterprises are heavily subsidised by local, state and federal governments. These subsidies represent implicit tax liabilities for current and future generations of taxpayers. Moreover, the debt and spending of off-budget enterprises (OBEs) contribute significantly to crowding out private investment.

Off-budget financing is through fees for municipal services provided by MOCs. In comparison, local taxes and fees are often unavailable because of the limited fiscal autonomy of municipalities in Poland. In the course of the analysis, the following hypotheses will be verified:

H1: The size of off-budget activities of local governments (LGs) (approximated by the sum of revenues of municipal companies owned by a given municipality or city with county rights) is related to the demand for their activities.

The political costs of increasing local taxes and charges are usually higher than the costs of growing direct charges for purchased municipal services provided by MOCs. They may lead to a loss of votes (support) from voters. Therefore, we assume that the relative costs of different financing forms matter for off-budget activities, and we expect that:

H1A: The size of LGs' off-budget activities is related to the election cycle.

Under the assumption that there is no change in the municipality's relative cost of off-budget financing to other funding sources, we expect that:

H2: The fiscal debt limit restricted since 2014 increases off-budget activities carried out by MOCs.

H3: Increased total financial needs are associated with greater use off-budget activities.

H4: LGs with higher debt capacity have shifted more activities off budget using MOCs.

H5: LGs with higher total revenue growth increase the size of off-budget activities.

Selected municipally-owned companies in Wielkopolska Voivodeship

The capital city of the Wielkopolska region is the city with county rights – Poznań. Table 1 shows selected MOCs owned by Poznań with the municipal share in their equity. By analysing the principal business activity of the companies indicated in

Table 1, it can be concluded that, for the most part, their profile can be associated with the performance of particular public tasks.

Table 1. MOCs owned by the City of Poznań as at 31st December 2018

No.	MOC	National Court Register	Registered Capital (PLN)	City's share in registered capital [%]	PKD (Polish Classification of Activities) code and principal business activity
1	Miejskie Przedsiębiorstwo Gospodarki Mieszkaniowej S.A.	0000218977	6 600 000	100.00	63.32. Management of real estate on a fee or contract basis
2	Miejskie Przedsiębiorstwo Komunikacyjne w Poznaniu sp. z o.o.	0000067030	399 651 500	100.00	49.31 Urban and suburban passenger land transport
3	Międzynarodowe Targi Poznańskie Sp. z o.o.	0000202703	42 310 200	100.00	82.30 Activities related to the organisation of trade fairs, exhibitions and congresses
4	Poznańskie Inwestycje Miejskie Sp. z o.o.	0000503225	4 100 000	100.00	41.20 Construction work for residential and non-residential buildings
5	Przedsiębiorstwo Komunikacji Samochodowej w Poznaniu S.A.	0000339648	10 000 000	100.00	49.39 Other passenger land transport, n.e.c.
6	Targowiska Sp. z o.o.	0000033085	4 522 000	100.00	68.20 Rental and management of owned or leased real estate
7	Wielkopolskie Centrum Wspierania Inwestycji Sp. z o.o.	0000134012	81 672 800	100.00	68.20 Rental and management of own or leased real estate
8	Zakład Zagospodarowania Odpadów w Poznaniu Sp. z o.o.	0000427416	11 005 000	100.00	38.21 Treatment and disposal of waste
9	Zarząd Komunalnych Zasobów Lokalowych Sp. z o.o.	0000483352	149 404 500	100.00	38.21 Treatment and disposal of waste
10	Poznańskie Towarzystwo Budownictwa Społecznego Sp. z o.o.	0000030524	98 348 500	99.00	68.20 Rental and management of own or leased real estate
11	Termy Maltańskie Sp. z o.o.	0000114386	41 609 600	99.94	93.11. Operation of sports facilities
12	Aquanet S.A.	0000234819	1 121 290 222	77.38	37.00 Sewage collection and treatment
13	Remondis Sanitech Poznań Sp. z o.o.	0000168556	14 640 000	49.66	38.11 Activities related to collection, processing and disposal of waste; recovery of raw materials

No.	MOC	National Court Register	Registered Capital (PLN)	City's share in registered capital [%]	PKD (Polish Classification of Activities) code and principal business activity
14	Port Lotniczy Poznań-Ławica Sp. z o.o.	0000003431	290 385 000	37.00	52.23 Service activities incidental to air transportation
15	Poznański Fundusz Poręczeń Kredytowych Sp. z o.o.	0000110866	5 500 000	22.22	64.99 Other financial service activities n.e.c.
16	Modetrans Poznań Sp. z o.o.	0000250168	28 628 000	15.82	33.17 Repair and maintenance of other transport equipment
17	Centrum Obsługi Biznesu Sp. z o.o.	0000055612	42 214 500	13.09	55.10 Hotels and similar accommodation

Source: own elaboration based on data from the 2018 Report on the standing of the City of Poznań and the National Court Register.

Undoubtedly, the provision of communication services (No. 2, 5, 14, 16), municipal services, waste collection, water supply (No. 8, 12, 13), real estate management – including construction (No. 1, 4, 6, 7, 9, 10), sports services (No. 11) belong to the primary tasks of the municipality. Hence the city's participation in these companies is reasonable. Although the possibility for these MOCs to set up subsidiaries should also be borne in mind, which affects the transparency of the MOCs themselves.

On the other hand, the issue of the municipality's provision of services related to the organisation of various fairs, events, exhibitions (No. 3), the provision of financial services – guarantees or warranties (No. 15) and, in particular, hotel services (No. 17), may raise concerns as to the purpose of the municipality's shareholding in these MOCs. Municipal management is defined as tasks of a public utility nature, aiming to satisfy the inhabitants' collective needs on an ongoing and uninterrupted basis by providing universally accessible services. Given the hardly discernible link between the scope of activities of these municipal companies and the function of performing public tasks, it can be stated that they may be more exposed to the risk of transferring the off-budgetary activities of the municipality.

Moreover, it is worth paying attention to the issue of the inheritance of shares by municipalities. Pursuant to article 935 of the Civil Code Act, if the testator has no other heirs (spouse, relatives, children, etc.), the inheritance falls to the competent municipality according to the last place of residence of the testator. Shares are subject to inheritance like any other asset – they belong to the testator's property rights and obligations, as provided in Article 922 § 1 of the Civil Code Act. It means that municipalities can, and in the absence of other heirs, are obliged to inherit property from deceased persons. Hence, in the event of the death of a person holding shares in a company for which there are no other heirs, the municipality inherits these shares and can become the owner. A separate issue is the circumstances relating to the state of the inherited companies – their potential debts or business activities. It can be argued that if the municipality inherits all the shares in a company, its role will be limited only to participating in the liquidation proceedings of that entity. Given the above, there may be cases of municipalities becoming owners of, for example, indebted companies in the process of bankruptcy/restructuring or liquidation for reasons beyond their control.

Variables and data sources

We conducted an empirical study on panel data of 89 municipalities in Wielkopolska to assess the extent to which the volume of off-budget financing through fees for local public services provided by municipal companies depends on the municipality's financial situation. Data from financial reports of municipalities retrieved from the website of the Ministry of Finance statement of surplus/deficit of local government (RB-NDS), B-Skon (consolidated balance sheet) for 2010–2018, BDL (Local Data Bank) and information on the ownership structure and revenue size of municipal companies from the Orbis database provided by Bureau van Dijk were used. The panel-data model was estimated using the Arellano-Bover/Blundell-Bond estimator of the system General Method of Moments (GMM) on the sample of all municipalities with municipal companies gaining positive revenues in Wielkopolska. Table 2 shows the definitions of the variables used in the study. According to the Public Finance Act 2009, the so-called Individual Debt Ratio (IDR) was defined earlier in equation (1).

Table 2. Definition of variables

Variable	Definition	Data sources
dependent variable OFF	size of off-budget activities measured as a logarithm of the sum of revenues of municipal companies owned by the municipality i, scaled by the size of the municipality's population	Orbis Local Data Bank
	Independent variables	
ON	the volume of budgetary activity measured as a logarithm of the sum of current expenditure and capital expenditure scaled by the size of the population of the municipality i	Ministry of Finance: RB-NDS (statement of surplus/ deficit of local government) B-Cons (consolidated reports) Local Data Bank
VFI	share of transfers (measured as municipal revenue from grants and subsidies) in total municipal revenue	Ministry of Finance RB-NDS Local Data Bank
DEBT	municipal debt ln(short-term financial liabilities + long-term debt)	Ministry of Finance B-Cons
election	a binary variable indicating years when local governments elections were conducted	

Variable	Definition	Data sources
debt_limit	a binary variable indicating years when fiscal debt limit based on individual debt ratio was in force	
Debt60_ratio	municipal debt to incoming revenues that should not be higher than 60%	Ministry of Finance B-Cons RB-NDS
Debt_due_ to_rev	municipal debt due divided by total revenue	Ministry of Finance B-Cons RB-NDS
Debt_service_to_ current_revenue	debt service expenses divided by current revenue	Ministry of Finance B-Cons RB-NDS
udc_lg_all	(IDR – repayments of scheduled debt with interest) / total revenue, where IDR = 1/3*(l.idr+l2.idr+l3.idr) as in eq. (1), idr = (current revenues + sale of assets - current expenditures) / total revenues	Ministry of Finance RB-NDS
udc_lg_exclude	(IDR – repayments of scheduled debt with interest)/total revenue less transfers	Ministry of Finance RB-NDS
no_udc_lg	dummy variable taking the value one if udc_lg_all≤0 and 0 if udc_lg_all > 0	Ministry of Finance RB-NDS
udc_moc	total unused debt capacity of MOCs owned by a municipality i	defined as in Białek-Jaworska (2021)
GROWTH	growth in total revenue of municipality i over time = total revenue for year t/total revenue for year t–1	RB-NDS
year2010-2018	time dummy variables for the years 2010–2018	
year	a discrete variable equals 2010, …, 2018 in the following years	

Research design

The analysis aims to assess whether and to what extent the volume of off-budget financing through charges for local public services provided by municipal companies depends on the financial situation of the local government. For this purpose, the following regression model can be used for the selected function f (estimated by GMM) with OFF as the dependent variable.

OFF = f (ON, GRANTS, DEBT, election, debt_limit, debt_rule*, udc*, GROWTH, time effects)

where: debt_rule* – test variable defined in 3 different ways, as a continuous variable: *Debt60_ratio*, *Debt_due_to_rev*, *Debt_service_to_current_revenue*,
udc* – test variable defined in different ways as a continuous variable: *udc_lg_all*, *udc_lg_exclude*.

For the linear function f (used in the paper), the above model takes the form:

$$OFF_{it} = \beta_0 + \alpha_1 OFF_{it-1} + \alpha_2 OFF_{it-2} + \beta_1 ON_{it} + \beta_2 VFI_{it} + \beta_3 DEBT_{it} + \beta_4 election_{it} + \beta_5 debt\_limit_{it} + \beta_6 debt\_rule*_{it} + \beta_7 udc*_{it} + \beta_8 GROWTH_{it} + controls + time + \upsilon_i + \varepsilon_{it}$$

where: α_i, β_i – parameter, i – observation number, t – subsequent year, υ_i – panel-level effects, ε_{it} – independent and identically distributed effects.

The significance and sign of β coefficients at respective variables will be used to verify particular hypotheses. The expected relationships for confirming the above research hypotheses are presented in Table 3.

Table 3. Expected signs of β coefficients for testing hypotheses

H	Variable	***β***	Expected sign
H1	ON	β_1	–
H1A	election	β_4	+
H2	debt_limit	β_5	+
H3	Debt60_ratio, Debt_due_to_rev, Debt_service_to_current_ revenue	β_6	+
H4	udc_lg_all, udc_lg_exclude	β_7	+
H5	GROWTH	β_8	+

Results

Table 4 presents the results of models for OFF normalised by population size for the 89 LGs owing MOCs generating positive revenues in 2010–2018, together with model diagnostics.

Table 4. Results for municipalities with MOCs generating positive revenues

H	Variable	OFF Coeff. Std err (1)	OFF Coeff. Std err (2)	OFF Coeff. Std err (3)	OFF Coeff. Std err (4)	OFF Coeff. Std err (5)	OFF Coeff. Std err (6)	OFF Coeff. Std err (7)
	L1.OFF	0.6667*** (0.0387)	0.6225*** (0.0329)	0.6546*** (0.0389)	0.6514*** (0.0375)	0.6569*** (0.0385)	0.6609*** (0.0345)	0.6508*** (0.0390)
	L2.OFF	0.0189 (0.0143)	0.0309** (0.0132)	0.0236 (0.0152)	0.0175 (0.0152)	0.0162 (0.0159)	0.0191 (0.0137)	0.0331** (0.0161)
H1	ON	–0.1981** (0.0872)	–0.1611* (0.0864)	–0.0954 (0.0947)	–0.1457 (0.0921)	–0.1673* (0.0951)	–0.2128** (0.0827)	–0.1543* (0.0855)
	VFI	–0.1691 (0.1705)	–0.0248 (0.1510)	–0.0082 (0.1709)	0.0273 (0.1589)	0.0290 (0.1593)	0.0946 (0.1519)	0.1020 (0.1665)
	DEBT	0.0005 (0.0033)	0.0026 (0.0029)	0.0024 (0.0033)	0.0041 (0.0030)	0.0042 (0.0028)	0.0042 (0.0031)	0.0002 (0.0031)
H1A	election	0.1065** (0.0423)	0.0823** (0.0409)	0.0696* (0.0422)	0.0851*** (0.0298)	0.0902*** (0.0306)	0.0957** (0.0424)	0.0081 (0.0096)
H2	**debt_limit**	0.0537*** (0.0103)	0.0436*** (0.0096)	0.0668*** (0.0151)	0.0766** (0.0299)	0.0751** (0.0302)	0.0611*** (0.0112)	0.0406*** (0.0098)
H3	Debt60_ratio	0.2720*** (0.0663)						
H3	Debt_due_ to_rev		1.547*** (0.3151)					
H3	Debt_service_ to_ current_ revenue			0.1310 (1.9426)				

H3	L1.Debt_se-rvice_ cur-rent_revenue			3.7819** (1.9053)				
H4	udc_lg_all				0.0634 (0.1528)			
H4	L1.udc_lg_all				0.7145*** (0.1295)			
H4	udc_lg_exc-lude					0.0701 (0.1664)		
H4	L1.udc_lg_exclude					0.5942*** (0.1619)		
	no_udc_lg						–0.0485** (0.0188)	
	L1.no_udc_lg						–0.0266** (0.0105)	
	udc_moc							0.0299*** (0.0087)
	L1.udc_spo-lka							0.0060 (0.0059)
H5	GROWTH	0.1726*** (0.0600)	0.1326** (0.0552)	0.1316** (0.0610)	0.1522*** (0.0511)	0.1548*** (0.0540)	0.2131*** (0.0469)	0.1449** (0.0598)
	year 2012	0.0091 (0.0074)	0.0093 (0.0075)	0.0268 (0.0169)	0.0299*** (0.0088)	0.0274*** (0.0091)	0.0163** (0.0081)	0.0089 (0.0078)
	year 2014	–0.1160** (0.0449)	–0.0835* (0.0436)	–0.0780* (0.0459)	–0.1363*** (0.0458)	–0.1364*** (0.0471)	–0.1145** (0.0443)	–
	year 2015	–	–	–	–0.0113 (0.0215)	–0.0097 (0.0219)	–	–
	year 2016	0.0446* (0.0247)	0.0178 (0.0221)	0.0113 (0.0232)	–	–	0.0119 (0.0226)	0.0005 (0.0234)
	year 2017	0.0767** (0.0307)	0.0467 (0.0295)	0.0379 (0.0307)	0.0418** (0.0184)	0.0430** (0.0190)	0.0473 (0.0305)	0.0248 (0.0291)
	year 2018	–	–	–	–	–	–	0.0611 (0.0392)
	year	0.0017*** (0.0003)	0.0017*** (0.0004)	0.0013*** (0.0004)	0.0015*** (0.0004)	0.0016*** (0.0004)	0.0017*** (0.0003)	0.0015*** (0.0003)
Number of observ		499	499	499	497	497	499	499
Number of groups		89	89	89	88	88	89	89
Number of instr		45	45	46	46	46	46	46
Wald test		427.8K***	405.1K***	424.7K***	363K***	357.5K***	346.8K***	308.4K***
Sargan test		42.73108	41.13574	46.7553	41.1169	42.0667	40.2856	40.6096
p-value		0.0782	0.1054	0.0345	0.1057	0.0887	0.1227	0.1159
Arellano-Bond test								
AR(1)		–3.1426	-3.2274	–3.1441	–3.2459	–3.1535	–3.3701	–3.4028
p-value		0.0017	0.0012	0.0017	0.0012	0.0016	0.0008	0.0007
AR(2)		–0.6710	–0.64232	–0.80113	–0.6312	–0.6279	–0.64015	–0.81475
p-value		0.5022	0.5207	0.4231	0.5279	0.5300	0.5221	0.4152

Significance level '***' *p-value* < 0.01 '**' *p-value* < 0.05 '* ' *p-value* < 0.1.

Table 4 presents the estimation results. The relationship between the explained variable (the size of off-budgetary activities carried out jointly by all municipal companies owned by the given municipality) and the demand for their budgetary activities is significant and negative, in particular in models (1) and (6). It is more meaningful when we control municipalities with high debt-to-incoming revenues ratio (required to be lower than 60%) or no unused debt capacity. It means that off-budget revenues substitute budgetary debt when municipal debt capacity is close to the fiscal debt limit. It confirms hypothesis H1. Estimates of models (1)–(6) show positive significant coefficients at the *election* variable. This means that the size of LGs' off-budget activities is more extensive in the election years. Thus, they align with hypothesis H1A.

Based on the estimated models, no reason was found to reject hypothesis H2. Therefore, we confirm that the fiscal debt limit restricted since 2014 increases off-budget activities carried out by MOCs. For the three variants of the *debt_rule** variable: municipal debt to incoming revenues ratio *Debt60_ratio*, municipal debt due to total revenue ratio *Debt_due_to_rev* and lagged debt service expenses to current revenue ratio *Debt_service_to_current_revenue*, evidence was provided to confirm the relationship assumed in hypothesis H3. Thus, we show that increased financial needs are associated with greater use of off-budget activities in analysed municipalities in Wielkopolska. For alternative definitions of the *udc** variable: municipal unused debt capacity to all revenues ratio and municipal unused debt capacity to revenues excluded transfers ratio, we receive significant positive parameters, however, at the lagged variables. These findings give no basis to reject hypothesis H4. Thus, we conclude that LGs with higher debt capacity have shifted more activities off budget using MOCs in the previous period. Considering municipalities with no unused debt capacity in the model (6), we note that LGs without any opportunity to borrow under the fiscal debt limit have shifted off budget fewer activities. Checking how LGs utilise MOCs, we notice in model (7) that the size of MOCs' unused debt capacity positively relates to their revenues. Finally, in the case of hypothesis H5, significant positive estimates at the GROWTH variable confirm that LGs with higher total revenue growth increase the size of off-budget activities. Their financial needs motivate LGs to enlarge off-budget activities using municipally-owned companies.

Conclusions

The paper shows that the off-budget financing through fees for local public services provided by MOCs depends on LG's financial situation. In particular, off-budget activities relied on the municipality's debt to incoming revenues ratio, municipal debt due to total revenue ratio and lagged debt service expenses to current revenue ratio. In addition, it also depends on municipal unused debt capacity, limited by the fiscal debt rule based on the so-called individual debt ratio of the municipality. In the analysis, six hypotheses were verified.

It has been shown that the size of off-budget activities of local governments (approximated by the sum of revenues of MOCs owned by a given municipality or a city with county rights) is negatively related to the demand for their activities and the relative costs of different forms of financing. Furthermore, the political costs of increasing local taxes and charges are usually higher than the costs of growing direct charges for purchased municipal services provided by MOCs, as they may lead to a loss of votes (support) from voters. Therefore, LGs increase off-budget activity in the election years. Results confirm that the fiscal debt rule introduced in 2014 positively influences the off-budget activity using MOCs. Increased financial needs are associated with greater use of off-budget activities in analysed municipalities in Wielkopolska. Local governments with higher debt capacity constrained by the fiscal debt rule introduced in 2014 (with a lower individual debt ratio) in the previous year have more off-budget activities performed by MOCs. LGs with higher debt capacity have shifted more activities off budget using MOCs in the previous period. LGs with higher total revenue growth increase the size of off-budget activities. Their financial needs motivate LGs to enlarge off-budget activities using municipally-owned companies. When we assume no change in the municipality's burden of budgetary debt financing relative to other funding sources (local taxes or fees), faster growth in total revenue is associated with more use of off-budget funding.

It can be summarised that the structure and size of budgeted activity are related to the relative opportunity costs of local government activity. Increases in municipal service charges do not incur such high political costs as increasing taxes or local fees, especially in times with no inflation, crisis or recession issues. The study's added value provides evidence that the fiscal debt rule introduced in 2014 in Poland increases the scale of shifting (hiding) budget expenditures outside the budget using municipal companies. Local governments with higher unused debt capacity have higher off-budget expenses financed by fees for municipal services provided by MOCs. Our results confirmed the hypothesis stated by Bernett and DiLorenzo (1984). Moreover, our results extend previous knowledge. In the case of the United States, Marlow and Joulfaian (1989) did not observe a reason to confirm or not the effectiveness of budget constraints in tax design and expenditure restraint, as our study has shown for Wielkopolska.

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Przychody pozabudżetowe a limit zadłużenia w jednostkach samorządu terytorialnego w Wielkopolsce

Zarys treści: Celem artykułu jest ocena, czy rozmiar działalności pozabudżetowej jednostek samorządu terytorialnego prowadzonej przez spółki komunalne (MOCs) zależy od zadłużenia gminy i niewykorzystanej zdolności zadłużeniowej. Fiskalna reguła zadłużeniowa ogranicza zdolność zadłużeniową gminy w oparciu o indywidualny wskaźnik jej zadłużenia. Innymi słowy, w artykule podjęto próbę ustalenia, czy i w jakim stopniu wielkość finansowania pozabudżetowego poprzez opłaty za lokalne usługi publiczne świadczone przez spółki komunalne zależy od sytuacji finansowej gminy. Wykorzystano dane panelowe 89 gmin województwa wielkopolskiego pochodzące ze skonsolidowanych sprawozdań finansowych, sprawozdań o nadwyżce/deficycie gmin za 2018 r., Banku Danych Lokalnych oraz informacje o strukturze własnościowej MOCs i wielkości ich przychodów z bazy Orbis. Modele zostały oszacowane uogólnioną metodą momentów (GMM) na łącznej próbie wszystkich gmin posiadających spółki komunalne w województwie wielkopolskim. Wykazano, że gminy przesuwały działalność poza budżet w odpowiedzi na ograniczenia limitu zadłużenia fiskalnego obowiązujące od 2014 r. oraz w latach wyborczych. Co więcej, struktura i wielkość działalności budżetowej są związane z relatywnymi kosztami alternatywnymi lokalnych usług publicznych. Wynika to z faktu, że rosnące stawki opłat komunalnych generują niższe koszty polityczne niż podwyższanie podatków czy opłat lokalnych. Tym samym pokazano, że wprowadzona w 2014 r. reguła zadłużeniowa zwiększa skalę przesuwania wydatków poza budżet za pomocą spółek komunalnych w Wielkopolsce.

Słowa kluczowe: samorząd terytorialny, fiskalne ograniczenie zadłużenia, działalność pozabudżetowa, spółki komunalne, Wielkopolska