

Public Spending: The Effect of Political Fragmentation

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Abstract

This paper analyses the effects of political fragmentation of central government expenditure. We have defined political fragmentation as the number of spending ministers in the government and the number of political parties in the governing coalition. Previous studies have found evidence of a positive relationship between the two sides. We have tested this relationship using more recent data (from 1999-2011) on a panel of 29 countries. Furthermore, due to an intense debate about the effects of monetary policy on fiscal discipline, we also investigate a rather unorthodox idea that the absence of independent monetary policy in a country diminishes the effects of political fragmentation. We have found that the coalition size interacting with economic growth has an effect on public spending but that the traditional measures of political fragmentation, in themselves, do not have any effect – in contradiction with past findings. We have also failed to find a relationship between independent monetary policy on fiscal discipline.

Keywords: government expenditure, political fragmentation, political economy, monetary policy.

JEL Classification: E52, H1, H5

Introduction

During the Great Recession, several countries around the world entered a sovereign debt crises, which many believe was caused by national governments' wasteful spending. As a consequence, the debate on the relevance and effectiveness of fiscal policy has become more intense, especially among the countries of the Eurozone. Quite a few previous studies have considered how fragmentation in the decision making system might influence the levels of government expenditure, finding robust

evidence that there is a positive relationship between them. However, the existing literature in this field has some drawbacks, such as: (i) the studies are based on outdated samples, (ii) they seldom take into account the interaction between different political variables and (iii) to our knowledge, none of them have tried to include the aspect of monetary policy framework into their analysis. This article addresses these shortcomings.

We define political fragmentation in a narrower sense as the number of spending ministers in the cabinet and political parties in the governing coalition. Quite a few previous studies emphasized the significance of political fragmentation in regard to explaining variations in government expenditure, while other variable relevance is rather limited (Ricciuti, 2004; Wehner 2010; Blais, Kim and Foucault, 2010). Theory assumes that the more fragmented governments are, the more difficulties they undergo reaching an agreement on spending. Each actor in the majority can negotiate for higher expenditure but they only have to bear a part of the costs (Perotti and Kontopoulos, 2002; Ricciuti, 2004), thus, they are always seeking to benefit themselves at the expense of others. In addition, common pool resource theorists (e.g. Gyroffy, 2007, etc.) claim that membership in a monetary union increases the chance of the moral hazard of overspending as it is harder to punish individual members for not cooperating. However, the opposing view (e.g. De Grauwe and Ji, 2013, etc.) suggests that being subject to a common monetary policy actually prevents governments from wasteful spending. Keeping that in mind, the main aim of this paper is to investigate whether fragmentation

in a decision making system has a significant and positive influence on central government expenditure and whether having a common monetary policy, like in the Eurozone, makes a difference in regard to the discipline on expenditure.

The rest of the paper is organized as follows: the next section presents a review of the importance of political fragmentation in affecting fiscal performance. We also contrast the theory about fragmentation with the theoretical framework of monetary policy and central banks' ability to influence government spending. After that we present our research aims along with our empirical model. Finally, we analyse our results and propose some policy suggestions.

Literature review

Currently there is an ongoing debate whether fiscal and monetary policies are complementary or actually act as alternatives to each other in pursuing macroeconomic objectives (Napoletano, Roventini, Dosi, Fagiolo & Treibich, 2015). Researchers agree that one of the answers is what determines the magnitude of government expenditure lies behind political actors. Successive studies suggest that the number of spending ministers and (to a smaller extent) the size of governing coalition in the parliament in particular have a significant effect on public expenditure (Roubini & Sachs, 1989; Perotti & Kontopoulos, 2002; Ricciuti, 2004; Wehner, 2010, etc.). In addition, there is a separate debate whether monetary policy setting has an influence on fiscal discipline towards expenditure. Therefore, in this section, we will concentrate on the analysis of two factors influencing expenditure: fragmentation in the structure of decision-making and the monetary policy setting.

Importance of coalitions

Government expenditure is influenced by the governing bodies of the country. The more fragmented a governing body becomes, the more difficult it is to coordinate decisions inside it. One of the early studies on government fragmentation was conducted by Roubini and Sachs (1989) who claim that the ruling coalition's structure has an effect on the levels of spending. Specifically, more divided coalitions incur more expenditure and larger deficits. This happens because, in the case of budget deficits, political parties face the so-called prisoner's dilemma. Even though all parties understand the necessity of budget cuts, each of them has an objective to safeguard its own part of the budget from a reduction. In order to protect their interests, parties may threaten to split up the coalition, thus, the non-

cooperative action overrules the cooperative one and the budget is not changed. To verify this hypothesis Roubini and Sachs (1989) used a political cohesion index for a sample of 14 OECD countries. The time period they covered was from 1960 to 1985. They found that the political variable is significant over the whole period. More precisely, there is a positive increase in government spending and budget deficits when the government structure changes from the minority to the majority government. This study prompted a discussion among academics. The opposing works mainly criticized the classification of political data and the index used in the empirical part (Edin and Ohlsson, 1991, etc). The subsequent studies have tried to come up with a better definition of what is political fragmentation (e.g. De Haan and Sturm, 1994) and to improve its measurement for the sake of objectivity.

Usually, political parties in power share the costs of spending, thus, each party wants to maximize its utility at the expense of others leading to a common resource problem. This idea has been analysed in a study by Perotti and Kontopoulos (2002), where they address both, the size and procedural fragmentation, effects on fiscal outcomes. Perotti and Kontopoulos (2002) use a sample of 19 countries, again, all from OECD for a period between 1970 and 1995. Their results show that an additional party in the coalition increases government expenditure by 0.12 percentage points of GDP. Their overall conclusion is that spending ministers have a significant influence on the magnitude of government expenditure. In addition, the size and ideology differences inside the coalition are important for expenditure in general and for transfer payments in particular.

A more recent study by Blais, Kim and Foucault (2010) contributes to the literature on fragmented governments by addressing the problem of wasteful spending from a veto player perspective. Their study examines the question of how different types of governments in power influence the level of public expenditure. As previously mentioned, public expenditure should increase if the fragmentation in the governing coalition also increases (Perotti and Kontopoulos, 2002). However, Blais, Kim and Foucault (2010) challenge this notion claiming that coalitions get themselves into a situation of status quo and are not able to increase the levels of spending because each party in coalition has a veto power to block other parties' pursuits. Their investigation is tested using a panel of 33 democratic countries for the years from 1972 to 2000. The study draws the conclusion that coalitions consisting of many parties tend to spend more than governments having one party in power when a situation in the

economy is difficult. However, their spending tends to level out when the situation improves. The idea that government expenditure depends on economic cycles was covered in the previous section but Blais, Kim and Foucault (2010) suggest that political fragmentation in particular might only be important during the periods of economic crises. We will try to account for this idea in our study.

Fragmentation in the cabinet

While the collaboration between the parties in power seems to be a valid determinant of government expenditure levels, the co-operation between the ministers in the cabinet is an even more important one. Von Hagen and Harden (1995) were one of the first academics to address the importance of ministers and their influence on fiscal policy. Their study analysed what kind of effects the decision making system in the cabinet has on the development of the budget. One of the conclusions the authors drew is that in situations where expenditures are planned by each spending minister independently, the budget itself tends to get bigger. This happens because of the common-pool resource problem. The study by Perotti and Kontopoulos (2002) described before presented considerable evidence that the size of the cabinet in the government is especially important in times of economic downturns and fiscal distress. They found that an additional minister in the cabinet increases general public expenditure by 0.19 percentage points of GDP. However, their selection of spending ministers is not entirely justifiable because they included finance and prime ministers, who do not have independent spending departments and only supervise other spending ministers (Volkerink and De Haan, 2001). Wehner (2010) also criticized the choice of selecting specific spending ministers by Perotti and Kontopoulos (2002) as being choosy and, at the same time, excluding other portfolios, which relate to welfare and social assistance.

Using the insights from previous studies, Granados (2003) considered four independent variables, ranging from the differences in party ideologies and the time left till next elections to the size of ruling coalitions and cabinets. All of this was used to analyse twelve different dependent variables for 15 EU countries during the period from 1970 to 2001. His study results were similar to those of Perotti and Kontopoulos (2002) probably because both papers used the same definition of cabinet fragmentation. There is a positive relationship between the increase in fragmentation and higher expenditures. The reason behind this, as we have mentioned before, is that every party in power can negotiate for more spending, however, the overall

costs are shared by all of the parties. Nevertheless, the variance of the coalition size was found to be significant only for a part of the period covered (1970-1994) and, according to the author, the significance disappeared due to a desire to join the European Monetary Union. Therefore, this study not only provides support for the idea of political fragmentation effects on expenditure but it also addresses a possibility that common monetary policy pushes for fiscal discipline, which we will investigate later.

A further study by Volkerink and De Haan (2001) provided some additional empirical results to support the idea that indeed there is a link between the fragmentation in the government and fiscal outcomes. However, contrary to previous research, these authors modified their definition of spending ministers. While counting the number of spending ministers, they chose to exclude the ministers of finance/budget and the prime minister because their position in the cabinet is a bit different from other ministers. In theory, those ministers should care more about the “average” citizen or, in other words, the public interest while the spending ministers think about the needs of some interest groups (Alesina & Perotti, 1999). Assuming that the logic behind this idea is correct, our measurement of cabinet fragmentation is the same: when counting spending ministers we exclude the number of prime, finance/budget ministers and those without portfolios overall. Volkerink and De Haan (2001) carried out their analysis using a data set of 22 OECD countries for a 25-year period beginning from 1971. The average number of spending ministers in their sample was 15. Their study also suggested that it is harder to coordinate the communication and requests of ministers when there are a lot of them, thus, as a consequence, it leads to a positive effect on public expenditure. Volkerink and De Haan (2001) findings were in line with the idea that cabinet fragmentation has a significant influence on the levels of government spending.

Ricciuti (2004) presented an in-depth analysis to determine the factors influencing fiscal performance. In order to be able to compare the results with other studies, he used a similar sample consisting of 19 OECD countries. Even the time period was alike, ranging from 1975 to 1995. However, he advanced this field of research by approaching the issue of fragmentation in quite a detailed manner. The relationship between fragmentation and fiscal policy performance was tested with 20 independent political variables, the average number of spending ministers in his investigations was around 16, while the overall number fluctuated from 7 to 33. He found evidence that the magnitude of public spending is

indeed positively related to fragmentation (Ricciuti 2004). If the cabinet size increases by one spending minister, it boosts government expenditure by a bit more than 0.1 per cent of GDP. In addition, the author proclaimed the spending minister variable to be “the only consistently significant determinant” of central government expenditure in regard to the size of fragmentation (Ricciuti 2004, p. 380). This is the main reason why we also apply this variable as one of the main independent political variables.

Most recently Wehner (2010) advanced the literature by employing a different approach. Not only did he strongly promote using the Volkerink and De Haan (2001) definition but he also criticized previous studies due to their small and not diversified samples. He claimed that some authors (e.g. Perotti and Kontopoulos, 2002; Granados 2003, etc.) do not take the influence of partisan fragmentation on cabinet decision-making into full consideration. Wehner’s (2010) research covered a new and vast dataset of 60 countries between 1975 and 1998. However, even though the author made a huge step forward incorporating such a huge number of countries, the problem of the relatively outdated time period remains. We take into account this deficiency in our empirical research. Wehner (2010) also found a strong positive relationship between the cabinet size and expenditures as well as empirical evidence that the partisan fragmentation of the cabinet has an influence on the increase of expenditure. To be more precise, one additional spending minister leads to 0.117% of GDP increase in public expenditure.

Monetary policy and fiscal discipline

The findings of the studies analysed in the previous sections suggest that political fragmentation leads to larger public expenditures. However, it is important to understand that politicians are also constrained by various other factors. One of these factors is monetary policy in a country. For example, according to Calmfors et al. (2003): “countries with stronger growth also have higher inflation” (p. 43) in general. Indeed, some countries, such as Ireland, Greece and Spain in the Eurozone, or Estonia, Slovenia and Slovakia, whose exchange rates were pegged to the euro, experienced higher growth accompanied by higher inflation than the European Central Bank’s (ECB) 2% target. If the ECB interest rates are too low to cool down inflation for all of member countries together, it should be done through fiscal policy, which naturally limits fiscal behaviour compared to countries with independent monetary policy.

Furthermore, it is not rare that excessive spending leads to government’s budget deficits and

in turn public debt. One way to solve a country’s debt problems is to embrace quantitative easing (large-scale asset purchasing) financed by the national bank. If the monetary stimulus is large enough, purchasing medium and long term government bonds should improve aggregate demand. For example, during the recent crisis, the Bank of England acquired around £200 billion of assets, which are tantamount to almost 15% of annual GDP (Joyce, Tong & Woods, 2011). Government can easily finance its own additional spending by selling bonds to the central bank. However, as there is no such thing as Eurobonds, the ECB cannot finance individual members’ spending. This leads to an assumption that those countries in the Eurozone should act more responsibly while carrying out their fiscal policies because there is no safety net from the monetary policy side and the central bank.

The logic behind the central bank’s ability to constrain political actors is quite straightforward. Strong central banks have a possibility to amend political choices and, consequently, fiscal policies, through interest rate elevation and refusal to finance their government’s debt. If politicians in a country are acting irresponsibly and implementing loose fiscal policies, a strong and independent central bank with its low inflation target policy would do everything in its power to maintain stability, therefore, the interest rates would be raised and the additional government spending would be undermined (Dell’Erba & Sola, 2016). Castellani and Debrun (2005) concluded that the central bank’s independence ensures economic stability in terms of fiscal responsibility. If the central bank is not independent enough and cannot commit to be credible to keep its policy, public expenditure and inflation should stay high.

Lucotte (2009) challenged previous empirical findings supporting central banks’ independence theory claiming that they are weak and not even continuously statistically significant. He also suggested that the results depend on central banks’ independence measurements, which cannot only be based on laws in place (*de jure*), because this approach is not appropriate for all countries. Therefore, Lucotte (2009) also took into account the *de facto* independence by using a specially designed indicator. The theory was tested over the period from 1995 to 2004 for a panel of almost 60 developing countries. The investigation presented significant results that suggest the level of central banks’ independence is negatively linked to budget deficits as well as public expenditure. Bodea (2011) presented another study stressing the importance of strong independent monetary policy. The long-run link between expenditure, deficits and

inflation means that independent central banks prefer fiscal orderliness. This association was empirically tested using data over a 12-year period from 1990 to 2002 among 23 democratic and less democratic post-communist states. The analysis also suggested that central banks have the ability to constrain budget deficits. However, the effect was visible only in democratic countries. Actually, in regard to fiscal discipline, less democratic post-communist countries tended to perform even better than those democracies where central banks are not so independent. This suggests that a strong and independent monetary policy is really important in determining fiscal outcomes. In addition, as this study suggests, different regime types might have influence on expenditure, however, due to limited availability of data, this goes beyond the scope of this paper.

Strong independent monetary policy should help maintain fiscal discipline. However, the most interesting question now is whether the monetary union in Europe preserves or disrupts fiscal discipline. No one can deny that the European Central Bank (ECB) is a truly independent institution but the findings regarding monetary union effects on fiscal discipline are again controversial. On the one hand, some empirical studies (Detken, Gaspar & Winkler, 2004; Györfy, 2007, etc.), firmly claim that a common central bank is unable to credibly commit to its policy, hence, fiscal discipline decreases. Due to variations in the interest rate, the introduction of the euro in Europe has had a significant impact on the fiscal conditions for governments. The common interest rate in the European Monetary Union does not fluctuate in response to a single government's alterations of its fiscal policy as much as a domestic interest rate would respond in a relatively closed economy (Detken, Gaspar & Winkler, 2004). This means that the ECB is unable to "punish" each country separately for their fiscal irresponsibility, therefore, countries tend to create moral hazard of overspending. Each government understands that this incentive simultaneously exists for all the other governments and that only the aggregate of all fiscal policies in the currency union will determine the common interest rate. Hence, all member states create a collective action problem and so the spending bias prevails (Detken, Gaspar & Winkler, 2004). The probability of the collective action problem happening especially increases knowing that the European Central Bank will step in to help individual countries with their struggle to fight the economic and financial recession after all.

On the other hand, Beetsma with Bovenberg (1998) argued that, with the increasing number of

members in the monetary union, the overspending problem diminishes. If the union is small, then fiscal authorities exploit the situation by strategically raising taxes and expecting to encourage the central bank to raise inflation in order to preserve employment. However, with each additional member in the union they have less individual power to influence the monetary position of the common central bank. Also, if the common central bank is a conservative one and somehow can truly commit to keep its inflation target, fiscal authorities understand that increasing taxes will not make the central bank increase the inflation rate. In addition, even though Beetsma and Bovenberg (1999) suggested the scales of expenditure could tip either way – they claimed that appropriate constraints should prevent superfluous deficit and public debt accumulation. Indeed, EU countries have been constrained by the Stability and Growth Pact (SGP) and its successor, the European Fiscal Compact (EFC). Under these agreements, countries are required to maintain specific levels of inflation, long term interest rates, budget deficits and debt (Creel, Hubert & Saraceno, 2012). While it is true that the ECB did not lend to member states' governments, it did, eventually, focus some of its power on directly lending to banks at a very low interest rate (Fawley & Neely, 2013). This leads to an assumption that the ECB will actually help with the money supply in times of serious trouble.

Furthermore, De Grauwe and Ji (2013) supported the idea that fiscal discipline in the Eurozone has essentially tightened instead of loosening. Fiscal constraints, like the Stability and Growth Pact in the EU, could not have been the main reason for not loosening fiscal policies because the SGP was not as strict as the European Fiscal Compact is today and quite a few other constraints were not even present (e.g. two-pack, six-pack¹). The reason is that the new conditions put down by the single currency prevented countries from issuing debt in their own currency. Non-independent monetary policy eliminated part of the guarantees that a country will always be able to repay the debt. Therefore, individual monetary union member states have more difficulty in raising money by issuing debt, which naturally limits possibilities to increase public expenditure.

Even though researchers have not reached an agreement on the particular effects of monetary policy unification on expenditure, there is a clear indication that it does have an effect. However, due to the fact that the existence of the common monetary policy has not led to government profligacy (De Grauwe & Ji, 2013; Appendix: Figure 1), it may be that the absence of an independent monetary policy

does constrain political actors from pursuing their own objectives. We expect the influence of political fragmentation on the levels of expenditure to diminish under a common monetary policy.

Research methodology

The aim of this research is to test two main questions that have emerged from the literature review: (1) whether political fragmentation has a significant influence on fiscal policy performance in an updated sample and (2) whether this effect is the same among countries with and without independent monetary policies. We may divide the research into several tasks. Firstly, we will investigate these questions by constructing a regression model taking into account what has been done by authors in the past. We will begin by addressing the choice of variables to be included in our regression. After that, we will describe the specific method we use (system GMM) and justify its use based on the specific circumstances of our study. Finally, we will run the regressions and include various sensitivity tests.

Dependent variable: We will use public spending (PS) as our dependent variable. It is expressed as a percentage of GDP to avoid high fluctuations in nominal values. In order to make the data set balanced, information about central government expenditure comes from several databases: IMF Government Finance Statistics and Eurostat.

Main independent variables of interest: To address fragmentation in the government we will include two main independent variables. We will include the number of spending ministers in the cabinet (NM) and how many parties there are in the governing coalition also known as the size of the coalition (SC). The data for the number of parties in the governing coalition come from the Parliament and Government Composition Database. Data indicating the number of spending ministers has been compiled from three different databases: The Party Government Data Set by Woldendorp, the updated Party Government Data Set and Europa World Plus, which is the online version of the Europa World Year Book. These two Independent variables were also included by Wehner (2010) and the results later will be compared. In addition, we will also check for the interaction effects that these variables have with GDP growth in order to catch the effects that swings in the economy produce. In order to test for the influence that independent monetary policy has on public spending we will also separately run a regression with a dummy variable for countries with independent monetary policy.

Control variables: In addition, we will include control variables to control for variable omission

bias. We will use GDP growth, which is probably one of the best measurements of the overall growth of the economy because it includes the output of all sectors of the economy and accounts for demographic changes. Also, according to Freeman (2008), general economic growth has a very strong correlation with labour productivity growth. Therefore, we expect the GDP indicator to capture the effects of Wagner's law and Baumol's cost disease on public expenditure together. We will include inflation as a control because it is also an indicator of the how well the economy is doing, which may then impact the decision of policy makers to increase or decrease spending. The last control variable we will use is the unemployment rate. The unemployment rate as a variable is more sensitive in reflecting the economic cycles than GDP growth. Less wealthy countries do not necessarily have higher unemployment rates even if GDP growth is simply smaller (Leonhardt, 2011). As our dataset also covers the time period of the global financial crisis of 2007 we will include a dummy variable to account for its effects on public spending. In past studies, authors included additional control variables, like trade openness (Alesina et al., 1999), a dummy for electoral cycles (Franzese, 2002) and a dummy for countries which have participated in war (Wehner, 2010). Some of these variables, like the dummy variable for war, do not apply to our data. In addition, due to the method which we will employ, it is important to keep the number of variables to as low as possible. Therefore, only the most important control variables will be included. An explanation of this reasoning will be discussed in the Method section.

Table 1 reports the basic summary statistics for all the variables used in the regression. The results show that on average there are about 15 spending ministers in a single country and their number varies from 6 to 34. These results are not different compared to studies covered in the literature review. In total, there were 481 observations.

Table 1

Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.
GDP growth	2.662	3.563	-18	12.2
Inflation	3.819	6.314	-4.5	64.900
Unemployment	7.545	3.806	1.8	21.6
Number of ministers	15.41	4.096	6	34
Coalition size	2.52	1.374	1	9
Public spending	27.355	7.296	10.3	58.2
Crisis dummy	0.308	0.462	0	1
GDP* ministers	40.63	57.912	-306	224.4
GDP* coalition	6.612	11.447	-90	55.8
Money dummy	0.405	0.491	0	1

Having all of the economic and political variables determined and described, we have conducted a regression analysis using panel data. The regression equation is as follows:

$$PS_{i,t} = \beta_0 + \beta_1 PS_{i,t-1} + \beta_2 NM_{i,t} + \beta_3 SC_{i,t} + \beta_4 X_{i,t} + \gamma_i + \varepsilon_{i,t}$$

In this case, we have opted for a dynamic model to account for the observed persistence in the public spending variable over time. We have included our independent variables that measure political fragmentation (number of ministers and coalition size). $X_{i,t}$ are our control variables, γ_i represents the country fixed effects and $\varepsilon_{i,t}$ represents the error term. Later on we will also test a more complex regression taking into account interaction terms in an attempt to capture the differing effects that political fragmentation has depending on how the economy is faring (Brambor, Clark & Golder, 2006; Franzese & Kam, 2009). We will also test the effect of an independent monetary policy. The regression equation can be described as follows:

$$PS_{i,t} = \beta_0 + \beta_1 PS_{i,t-1} + \beta_2 GDP_{i,t} + \beta_3 NM_{i,t} + \beta_4 SC_{i,t} + \beta_5 NM_{i,t} * GDP_{i,t} + \beta_6 SC_{i,t} * GDP_{i,t} + \beta_7 Money Dummy + \beta_8 X_{i,t} + \gamma_i + \varepsilon_{i,t}$$

Method

Given the data set and the use of a dynamic panel data model, the methods available to us are quite limited. Given that we have 29 countries and 13 years of data (1999-2011), using the fixed effects method would be problematic due to Nickell bias. The work by Wehner (2010), which ran a similar regression to ours also using dynamic panel data, employed the fixed effects method because he claimed that the Nickel bias is less problematic when the time period covered is more than 20 years. We have a much smaller time span so we have been forced to use a different method. We have also faced an endogeneity problem stemming from the fact that it is theoretically unclear as to whether political fragmentation is affecting the amount of government spending or whether government spending levels lead to changes in voter opinion, which then affect political fragmentation. To address the problem stemming from large “N” small “T” samples using dynamic panel data models, several authors have proposed using variants of the generalized method of moments (GMM). Using difference GMM or system GMM we may be able to account for the country fixed effects, reduce the Nickell bias and also deal with the endogeneity problem inherent to the model (Roodman, 2009a). Endogeneity is dealt with by constructing instruments from the differences of lagged endogenous variables, and so no other

outside instruments are necessary. According to a Monte Carlo simulation performed by Soto (2009) on a sample of N=35, T=12, system GMM was the method which produced the least amount of bias in a dynamic panel setting. We, therefore, propose to use the same method in our case.

Earlier, when discussing the choice of control variables, we argued that there was a need to keep the amount of additional variables to a minimum. According to Roodman (2009b), system GMM works by creating instruments derived from past observations of the endogenous and exogenous variables. Thus, the more variables included, the more instruments to be constructed. This can be problematic when there are too many instruments because they may over fit the model and produce problematic results. Therefore, we have chosen to limit the amount of variables included, while other studies, using different methods, do not. This factor may be a cause of divergent results.

When using system GMM there are several tests which need to be performed to insure the reliability of the results. The Sargan and Hansen test both check the instrument sets created to see whether they are exogenous to the model. If the instruments were endogenous, it would defeat the purpose of instrumenting in the first place. The Hansen test has the advantage that it is robust to autocorrelation and heteroscedasticity. However, as the number of instruments is increased, the Hansen test becomes less reliable. Alternatively, the Sargan test is not robust to autocorrelation and heteroscedasticity but is also not negatively affected by the amount of instruments used. In addition, we have included the Arellano-Bond test, which looks for autocorrelation between groups. According to Roodman (2009a), the AR(1) test may find the presence of autocorrelation to the way that the system GMM coefficients are calculated, but the AR(2) test should be free from autocorrelation for the results of the specification to be considered valid.

Results

Table 2 reports the results for all 29 countries. The regression analysis shows that the level of central government expenditure in the previous year, unemployment and GDP growth levels have a significant influence on public spending, which is in line with past findings. However, the political variables representing political fragmentation were both found to be non-significant. This initial finding directly contradicts the findings of much of the literature mentioned earlier. This contradiction may be due to the fact that we have used a data set using more recent data than past major studies. If there were some kind of structural break in the data,

perhaps because of the 2007 financial crisis, this could possibly account for the difference. Another explanation is that this is the first study of the effect of political fragmentation of public spending to be done using system GMM as the main method.

In addition to presenting the main results using system GMM in (1), we have also included the results using fixed effects and OLS as additional

robustness checks. According to Roodman (2009a), the autoregressive variable coefficient using fixed effects should be downward biased and the OLS coefficient should be upward biased, so a good first test is to see that the system GMM coefficient is between these two numbers, which is true for our case.

Table 2

Estimation results			
	(1)	(2)	(3)
	System GMM	Fixed effects	OLS
L.Public spending	0.856***	0.572***	0.939***
GDP growth	-0.300***	-0.118***	-0.107***
Inflation	0.038*	0.026	0.019
Unemployment	-0.054**	0.033	-0.039***
Number of ministers	0.023	0.027	0.003
Coalition size	-0.002	0.007	-0.005
Crisis dummy	-0.065**	0.024	0.006
Sargan	0.3691		
Hansen	0.4729		
AR(1)	0.0087		
AR(2)	0.2191		
Instruments	14		

Standardized beta coefficients: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Our initial results indicate that there is no influence of coalition size or the number of ministers on public spending. These results were surprising given the impact that political fragmentation had in past studies. We, therefore, decided to attempt several slight variations of the model to try to uncover the effects of political fragmentation on an interaction with GDP growth (1). As a further robustness check,

we also ran the same regression using longer lags in the instruments, as added insurance against any endogeneity in the instrument set. In addition, we also attempted to test for the effect of independent monetary policy through the inclusion of a dummy variable, where values of 1 were given to countries with independent monetary policies (3).

Table 3

Estimation results			
	(1)	(2)	(3)
	Interaction	Longer instrument lags	Monetary policy
L. Public spending	0.791***	0.693***	0.789***
GDP growth	-0.486*	-1.342	-0.501*
Inflation	0.037*	0.053	0.038
Unemployment	-0.051	-0.051	-0.057**
Number of ministers	-0.000	-0.124	0.002
Coalition size	-0.044	-0.084	-0.051
GDP* ministers	0.144	0.729	0.157
GDP* coalition	0.205**	0.416	0.207**
Crisis dummy	-0.017	-0.054	-0.018
Ind. Monetary Policy			-0.022
Sargan	0.0300	0.4259	0.0280
Hansen	0.3533	0.4102	0.3513
AR(1)	0.0142	0.0833	0.0136
AR(2)	0.1534	0.8100	0.1579
Instruments	14	14	15

Standardized beta coefficients: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Looking at the first regression in Table 3, the lone effects of GDP growth have dropped in significance but the interaction between GDP growth and coalition is quite strong. This would imply that, in times of economic growth, having a larger amount of political parties fuels an increase in government spending. In good times, the ruling coalition appears to dole out more spending, perhaps for pet projects of the individual parties. The Sargan test did not support the exogeneity of the instrument set but it is not robust to autocorrelation or heteroscedasticity. Given the fact that only 14 instruments were used, it is likely that the Hansen test was not heavily affected by including too many instruments, thus, the rejection of the endogeneity of the instrument set is supported. Regression (3) includes the dummy with countries having an independent monetary policy. The coefficient was not significant and there does not appear to have been a large effect on the other coefficients. Thus, we can reject the idea that

monetary policy independence has a significant effect on public spending. However, we should note that the degree of monetary policy independence between countries must vary in a way more complex than the binary output which we have used with a dummy variable. Thus, studies, like those by Lucotte (2009), which used a more specialised measure of monetary policy independence, would be more accurate. Thus, further study of this problem with better data is required.

As a final sensitivity test, we have included the same regression as presented in Table 3 but this time we lag all of the independent variables by 1 year to account for the fact that any changes in these variables would only have a delayed effect on the budget as public expenditure changes often take quite a lot of time. In addition, we have also tried lagging the dependent variable by 2 years to further test the persistence of this variable.

Table 4

Estimation results with lags

	(1) Interaction	(2) 2 Lags	(3) Monetary policy dummy
L.Public spending	0.743***	0.943*	0.744***
L2.Public spending		-0.362	
L.GDP growth	-0.726	0.493	-0.654
L.Inflation	0.088	0.131	0.088
L.Unemployment	-0.112**	-0.146**	-0.144***
L.Number of ministers	-0.116	-0.097	-0.081
L.Coalition size	0.025	0.260	-0.018
L.GDP* ministers	0.731	0.315	0.700
L.GDP* coalition	0.013	-0.858	-0.037
Crisis dummy	0.046	0.099**	0.048
Ind. monetary policy			-0.117
Sargan	0.0000	0.0100	0.0001
Hansen	0.0032	0.0541	0.0057
AR(1)	0.0042	0.0740	0.0037
AR(2)	0.2572	0.9375	0.2216
Instruments	14	14	15

Standardized beta coefficients: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Including a one-year lag has significantly changed the results as compared to the previous regressions. Interestingly, many of the previously significant variables are no longer significant. However, lagged unemployment does significantly affect public spending in all of the regressions. Both the Sargan and Hansen tests reject exogeneity of the instrument set so we should be sceptical about the results here.

Conclusion

This paper has investigated the question of whether increasing political fragmentation has an influence on government expenditure and whether the presence or absence of independent monetary policy has influenced the outcome. In the first section, we have covered the literature on how political fragmentation affects spending. The literature argues that the number of spending ministers and the number

of parties in the governing coalition do shape public expenditure, which was later supported by empirical tests. In contrast to these past studies, we have found that the two variables for political fragmentation (number of ministers and coalition size) have no significant effect on public spending by themselves. However, we have found evidence to support an interaction effect between GDP growth and the size of a coalition on public expenditure, which, to the best of our knowledge, is a new finding. In regard to the ability of government fragmentation to affect public spending under different monetary policy circumstances, the empirical evidence suggests that monetary independence has no effect.

The finding of the interaction effect between GDP growth and the size of the coalition on public expenditure implies that an increase in spending associated with a larger coalition in the government is occurring only in the presence of economic growth. If we assume that economic growth leads to higher tax revenue (in the absence of tax rate changes), then this higher growth would reduce pressure on a large coalition to constrain spending on their many different wants. If voters are interested in maintaining a balanced and responsible budget during times of economic growth, then they should avoid voting for new or small parties. An interesting follow up study to this one could look at the reverse, namely, the need for austerity in times of financial crisis in countries which have had a large ruling coalitions in the past.

Future research in this field could further investigate the relationship between political fragmentation and government expenditure using less aggregated data. For example, future researchers could include data on spending ministers' affiliation to particular parties in power. Finally, a closer look at more countries and other currency unions might increase the credibility of future research.

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Viešosios išlaidos: politinės fragmentacijos poveikis

Santrauka

Ekonominio nuosmukio, prasidėjusio 2007–2008 m., metu daugelis Europos šalių įklimpo į užburta valstybių išsiskolinimo krizę. 2010 m. tokių šalių kaip Airija, Italija, Ispanija, Portugalija ar Graikija išsiskolinimas ženkliai viršijo kiekvienos iš jų metines bendrųjų vidaus produktų vertes. Pasiskolinti pinigai buvo netinkamai investuoti ir todėl nedavė pakankamos naudos, kad būtų galima padengti palūkanas – dėl to reikėjo vis daugiau lėšų esamiems ir naujiems išsiskolinimams apmokėti. Būtent todėl daugelis ekonomistų įtikėjo, jog šitokia situacija susidarė dėl neatsakingo valdžios organų išlaidavimo prieškriziniu ir pokriziniu laikotarpiais. Siekiant suvaldyti blogėjančią ekonominę situaciją, Europos Sąjungos (ES) šalyse prasidėjo diskusija dėl nepriklausomos fiskalinės politikos svarbos ir efektyvumo. ES šalys savanoriškai sugriežtino bendrąsias taisykles (pvz., „Euro Plus“ paktas), siekdamos įdiegti griežtesnius prevencinius mechanizmus ir labiau sustiprinti tarpusavio fiskalinį koordinavimą.

Daugelyje ankstesnių akademinų darbų, analizuojančių fiskalinę politiką, buvo tiriama, kaip skirtingi politiniai kintamieji gali paveikti valdžios išlaidas. Bene daugiausia dėmesio iš minėtų tyrimų sulaukė politinio susiskaldymo svarba, tačiau būtina pastebėti, kad nemažai

tyrimų yra pasenę, nė vienas iš jų į savo analizę nebandė įtraukti pinigų politikos aspekto. Būtent todėl šiame straipsnyje analizuojamas politinės fragmentacijos poveikis centrinės valdžios sektoriaus išlaidoms, atsižvelgiant į nepriklausomos pinigų politikos įtaką kiekvienoje ES šalyje. Kadangi tema yra pakankamai plati, politinė fragmentacija, kitaip – politinis susiskaldymas, apibrėžiama dvejopai: i) kaip vyriausybėje esančių ministrų, valdančių atskirų ministerijų biudžetus, skaičius, ii) valdančiojoje koalicijoje esančių politinių partijų skaičius. Teorija remiasi prielaida, jog labiau susiskaldžiusios vyriausybės ir didesnės valdančiosios koalicijos patiria daugiau sunkumų, norėdamos pasiekti bendrą susitarimą dėl biudžeto paskirstymo, lemiantį biudžeto išsipūtimą ir atitinkamai didesnes išlaidas, nes kiekvienas ministras gali derėtis dėl didesnių lėšų, skirtų savosios ministerijos veiklos vykdymui, o partijos valdančiojoje koalicijoje daryti tam įtaką. Atskiri ministrai turi atsakyti tik už dalį bendrų vyriausybės išlaidų, todėl visuomet siekia naudos sau kitų ministrų kabinetų sąskaita. Vyriausybės, kurių ministerijos savo biudžetus tvarkosi individualiai, yra linkusios išleisti daugiau, lyginant su tomis vyriausybėmis, kurių ministerijos, skaičiuodamos savo metines išlaidas, tarpusavyje labiau bendradarbiauja.

Nedera pamiršti ir pinigų (monetarinės) politikos svarbos, valdant šalies ekonomiką. Pinigų politiką vykdo centrinis šalies bankas per keletą pagrindinių mechanizmų: i) gryųjų pinigų kiekio apyvartoje kontroliavimą; ii) palūkanų normos kontroliavimą; iii) valiutos kurso kontroliavimą; iv) pinigų spausdinimą. Jei valdžia yra linkusi skolintis pinigų rinkoje ir išlaidauti, centrinis šalies bankas gali atitinkamai pasirinkti spausdinti daugiau pinigų ir taip finansuoti didėjančią valstybės skolą. Tačiau jei šalies centrinis bankas yra pakankamai nepriklausomas nuo valdžios įtakos, jis gali taikyti žemos infliacijos politiką ir, siekdamas išlaikyti ekonominį stabilumą, padidinti palūkanų normas, taip apribodamas valdžios galimybes skolintis pinigų ir išlaidauti. Kadangi šiuo metu Europoje yra 19 šalių, turinčių bendrą monetarinę politiką (euro zona), natūraliai kyla klausimas, ar Europos Centrinis Bankas (ECB) yra pajėgus suvaldyti kiekvienos šalies fiskalinę atsakomybę. Bendrojo turto teoretikai teigia, jog narystė pinigų sąjungoje padidina moralinę riziką dėl vyriausybės pinigų švaistymo, nes tokiu atveju yra sunkiau nubausti pavienius nebendradarbiaujančius bendrijos narius. Vis dėlto egzistuoja ir priešinga nuomonė, jog buvimas pinigų sąjungoje iš tiesų riboja neatsakingą vyriausybės išlaidavimą, nes ECB neadaptuoja bendrosios pinigų politikos pagal kiekvienos šalies narės ekonominę padėtį.

Nors ankstesni tyrimai šia tema yra atskleidę tvirtų įrodymų apie egzistuojantį teigiamą ryšį tarp politinės fragmentacijos ir valdžios išlaidų, tačiau dabartinė šios srities literatūra turi tam tikrų trūkumų: i) tyrimai yra pagrįsti pasenusiomis imtimis; ii) jie retai atsižvelgia į skir-

tingų politinių kintamųjų tarpusavio sąveiką; iii), mūsų žiniomis, nė vienas ankstesnis tyrimas į savo analizę nėra įtraukęs monetarinės politikos aspekto.

Atsižvelgiant į esamus dabartinių tyrimų trūkumus, atliekant tyrimą buvo naudojamos naujesniais duomenimis (1999–2011 m., 29 šalys) ir bandoma pagrįsti gana netradicinę idėją, kad nepriklausomos pinigų politikos nebuvimas šalyse, pvz., euro zonoje, mažina politinės fragmentacijos poveikį centrinės valdžios išlaidavimui. Tai yra vienas iš svarbiausių šio tyrimo aspektų.

Naudojantis nauju empiriniu modeliu ir pritaikius momentų metodą, iš tyrimo paaiškėjo, jog pavieniai tradiciniai politinio susiskaldymo rodikliai, t. y. biudžetų valdančių ministrų skaičius ir valdančiojoje koalicijoje esančių partijų skaičius, neturi jokio poveikio centrinės valdžios išlaidavimui, skirtingai nei tvirtina ankstesnių akademinų tyrimų rezultatai. Didžiausią įtaką valdžios išlaidoms turi vyraujanti globali ir pačios šalies ekonominė padėtis. Nepavyko rasti jokio statistinio ryšio tarp nepriklausomos pinigų politikos ir fiskalinės disciplinos, t. y. išaiškėjo, kad centrinio banko politika neturi įtakos valdžios išlaidavimui. Vienintelis atvejis, kai politinė fragmentacija gali būti statistiškai reikšminga, yra ekonomikos augimo laikotarpiai: tuo metu politinės partijos, esančios valdančiojoje koalicijoje, gali sau leisti finansuoti daugiau net ir ne visada ekonomiškai naudingų projektų.

Pagrindiniai žodžiai: valdžios sektoriaus išlaidos, politinis susiskaldymas, politinė ekonomija, pinigų politika.