The effect of political institutions on the size of government spending in European Union member states and Croatia

VALENTINA VUČKOVIĆ, B.Sc.*
MARTINA BASARAC SERTIĆ, PhD*

Preliminary communication**
JEL: D72, H11, E62
doi: 10.3326/fintp.37.2.2

* The authors would like to thank three anonymous referees for their useful comments and suggestions.
** Received: June 1, 2012
Accepted: January 14, 2013
The article was submitted for the 2012 annual award of the Prof. Dr. Marijan Hanžeković Prize.

Valentina VUČKOVIĆ
Institute for Development and International Relations, Ljudevita Farkaša Vukotinovića 2, 10000 Zagreb, Croatia
e-mail: valentina@irmo.hr

Martina BASARAC SERTIĆ
Croatian Academy of Sciences and Arts, Strossmayerov trg 2, 10000 Zagreb, Croatia
e-mail: mbasarac@hazu.hr

FINANCIAL THEORY AND PRACTICE
37 (2) 161-179 (2013)

Abstract

This paper presents an overview of theoretical and empirical research on the interaction between political institutions and economic variables. Using the dynamic panel model, the paper also investigates the indirect effects of electoral systems on the size of general government spending. The analysis is performed on a panel dataset of 26 countries (25 member states of the European Union and Croatia) for the period between 1995 and 2010. The results show that government fragmentation and political stability affect the dynamics of budgetary expenditures in line with theoretical assumptions. Regarding the implications of this research for Croatia, it has been shown that a higher degree of government fragmentation leads to an increase in government spending which is a significant result since Croatia has generally had some form of coalition government.

Keywords: political institutions, fiscal policy, electoral systems, government fragmentation, political competition, political stability

1 INTRODUCTION

The correlation between political institutions and economic development is one of the most interesting research areas at the interface between economics and political science (Persson and Tabellini, 2006). Specifically, modern politico-economic models view government as an endogenous factor in the political and economic system, which is in contrast with the conventional normative approach that sees the policy maker as a "benevolent social planner" whose only objective is to maximize social welfare (Snowdon and Vane, 2005:30). Within these models, economic policies are not designed independently of the influence of various aspects of political institutions. Government, responsible for the choice and implementation of economic policy, is at the centre of the interaction between political and economic factors. But the behaviour of government is shaped by the various institutional constraints that comprise the political system (Snowdon and Vane, 2005:521). Moreover, from the aspect of political economy, economic policy is fraught with conflicts of interest (Roberts Clark, Golder and Golder Nadenichek, 2009). These conflicts inevitably occur since societies are made of individuals and groups with specific values and interests as the result of their different occupations, sources of income, ideologies and so on (Persson and Tabellini, 2004b). In this context, Persson and Tabellini (2000:207) identify three fundamental conflicts of interest. First, policymakers can exploit their political power and use public funds at the expense of voters. Second, voters come into conflict over the allocation of redistributive transfers; and finally, the politicians come into conflict over the distribution of rents among themselves. Political institutions, which differ in many dimensions, play the key role in the resolution of these conflicts. The aim of this paper is to determine the dimensions of political institutions that directly and/or indirectly affect the size of government spending. Specifically, the paper empirically investigates whether a higher degree of government fragmentation, political competition and political stability affect government spending dynamics.

FINANCIAL THEORY AND PRACTICE
37 (2) 161-179 (2013)

2 THE EFFECT OF ELECTORAL SYSTEMS ON FISCAL POLICY OUTCOMES: THEORETICAL FRAMEWORK

The literature on the effects of political institutions on fiscal policy recorded significant growth in the last twenty years (for example, Milesi-Ferretti, Perotti and Rostagno, 2002; Persson and Tabellini, 2000, 2003, 2004; Persson, 2002; Persson, Roland and Tabellini, 2003; Voigt, 2009; Gregorini and Longoni, 2010; Acemoglu, 2005; Blume et al., 2007; Hallerberg and von Hagen, 1997), which has significantly improved the understanding of politico-economic relations in society. In most of these studies, there are two categories of political institutions under review: electoral systems and forms of government. Although there is no universal consensus regarding their effects on fiscal policy, it is generally considered in the literature that the parliamentary form of government and proportional electoral system are characterized by higher government spending and taxes, higher welfare states, higher budget deficits and public debt. On the other hand, the presidential form of government and a majoritarian (plurality) electoral system are characterized by lower government spending and taxes, lower welfare states and more balanced budget. Thus, there are good reasons to restrict the research to fiscal policy outcomes. Moreover, numerous authors in their analyses use the size and structure of government spending, tax revenues, budget balance and public debt as relevant variables.

The objective of this paper is to investigate electoral rules for the election of political candidates and their potential effects on fiscal policy outcomes. These rules differ from the aspect of three main characteristics: district magnitude, electoral formula and ballot structure (Persson and Tabellini, 2004b). First, district magnitude determines the number of seats (legislators) in the district, distinguishing between single- and multi-member districts. This dimension of electoral rules affects both the degree of proportionality and representation (of relevant social groups by politicians) of elections[1] and is considered the most effective and highly manipulated political dimension of the electoral system (Kasapović, 2003:152). Generally, larger districts increase electoral competition encouraging politicians to seek support from broader coalitions of voters, which generates larger and broader fiscal programs. Smaller districts, on the other side, foster attention to pivotal geographical constituencies inducing a larger number of specific programs and benefits (Klašnja, 2008). Next, the electoral formula is considered to be the most important dimension of electoral rules. It encompasses rules and methods for translating votes into seats[2], distinguishing between plurality and proportional electoral rule (Persson and Tabellini, 2004b). Politicians do not need to take into account

[1] Larger districts are more proportional and representative; with a larger district the number of candidates in the political process increases (who can produce lower equilibrium rents) but also voters can punish corrupt parties with lower ideological costs (Persson, 2002).

[2] An electoral formula determines the minimum number of votes needed to win the elections. The majoritarian electoral system is based on plurality rule (the electoral winner is determined by relative or absolute majority of the votes) while the proportional electoral system is based on the principle of proportional representation (PR) of the electorate (distribution of seats proportional to the number of obtained votes) (Kasapović, 2003).

the preferences and interests of all voters, but primarily need to please those that will help them to win the elections (Klašnja, 2008). Since under plurality rule the share of total votes needed is smaller than under proportional rule, government spending will be directed towards smaller and geographically more targeted segments of voters[3] which generates preferences for instruments such as local public goods, pork-barrel spending, etc. (Persson and Tabellini, 2003; Milesi-Feretti, Perotti and Rostagno, 2002). On the other hand, under proportional rule, politicians try to internalize benefits for larger segments of the population which results in higher government spending based on universal transfers and programs that benefit larger groups of population (Persson and Tabellini, 2003). The third dimension of electoral rules, ballot structure, determines how voters vote and cast their preferences among individual political candidates and party lists. This dimension has an effect on fiscal policy through attribution to and sensitivity of votes to incumbents' performance (Klašnja, 2008). In general, plurality (proportional) electoral system is based on individual candidates (party lists) (Voigt, 2009). Specifically, under the proportional system based on party lists, due to the lower political accountability, one can expect problems of free riders, rent-seeking and increased corruption (Persson and Tabellini, 2000; 2003). All of this can then result in excessive spending of policy-makers and the consequent pressure on tax increases. Although the described dimensions of political institutions are theoretically distinct, they are usually correlated across countries which led to a classification into two main electoral systems: majoritarian (plurality) and proportional (Persson and Tabellini, 2004b). Generally, countries using plurality rule have a minimum district magnitude (single-member districts) and allow voting for individual candidates, while countries using proportional rule have larger districts and rely on voting for party lists (Voigt, 2009). Hence, there is a trade-off between two electoral systems, neither of which delivers superior outcomes. Proportional systems are more representative but induce more spending, rent-seeking activities and redistribution in favour of the majority. On the other side, majoritarian systems are characterized with redistribution in favour of minorities, lower spending and higher political accountability (Klašnja, 2008).

Electoral systems can also have an indirect impact on fiscal policy through their effects on the structure of political parties, type of government, political competition as well as political stability (see Besley, Persson and Sturm, 2010; Persson and Tabellini, 2006; Persson, Roland and Tabellini, 2003; Gregorini and Longoni, 2010; Padovano and Venturi, 2001). For example, the proportional electoral system is associated with a more fragmented party system with frequent coalition governments while majoritarian electoral systems often result in single-party government. Therefore, it would be reasonable to expect that these effects are also reflected in the economic policies implemented under different types of party systems and governments. In general, with increasing government fragmentation, one can expect higher spending targeted towards more heterogeneous population

[3] In other words, politicians will be more focused on swing voters.

groups (Gregorini and Longoni, 2010). A more detailed description of the correlation between these dimensions of political institutions and government spending is given in the section dealing with the econometric analysis (section 4) since these categories of political institutions are included in the model.

3 EMPIRICAL LITERATURE REVIEW AND METHODOLOGICAL ISSUES

Although from the empirical point of view there still remain many challenges, existing studies have generally confirmed the significance of political institutions for economic policy making. Persson and Tabellini (2003) conducted a study on a sample of 85 countries for the 1990s and showed that the total spending of the central government is on average 4-5% of GDP higher in a proportional than in a majoritarian electoral system. Their results also showed that the reform from proportional to majoritarian electoral system leads to a decrease in social security expenditures by an average of 2-3% of GDP as well as to a decrease in the budget deficit by 1-2% of GDP. Moreover, Milesi-Ferretti, Perotti and Rostagno (2002) investigated the impact of electoral systems on the size and composition of government spending on a sample of 20 countries of the Organization for Economic Cooperation and Development (OECD) and 20 countries of Latin America. Their results also imply that proportional electoral systems (in comparison to majoritarian systems) are characterized by higher total government spending and higher transfer payments (opposed to the local public goods). Blume et al. (2007), based on the analysis of Persson and Tabellini (2003) and by increasing the number of countries in the sample to 116, show that central government spending is on average 7% lower in a majoritarian than in a proportional electoral system. However, the authors point out that the district size and the proportion of individually elected candidates are more important factors than electoral system per se. Persson and Tabellini (2006:729), discussing both the direct and indirect effects, point out that electoral systems affect government spending only indirectly through the structure and type of government. In this line of research, Gregorini and Longoni (2010) performed an analysis controlling for the effects of government fragmentation (i.e. distribution of seats within a particular government) on spending. As pointed out by the authors, there are countries with proportional electoral systems and low fragmentation (and vice versa), which makes it interesting to analyse the differences between the degree of government fragmentation (even within the two categories of electoral systems) and their impact on policy makers' preferences for public spending. They argue that with a higher degree of fragmentation, government spending increases and focuses on more heterogeneous groups. Roubini and Sachs (1989) also showed that more fragmented governments are characterized by higher deficit and public debt (in OECD countries), primarily due to their tendency to excessive spending because of different interests and constituencies, veto powers over budget or weak enforcement mechanisms for binding commitments among coalition partners.

FINANCIAL THEORY AND PRACTICE
37 (2) 161-179 (2013)

On a sample of 50 U.S. state governments, Poterba (1994) confirms that fiscal institutions and political factors affect deficit dynamics (in the short run). States in which one party controls both the governorship and the state house are more likely to react quickly to unexpected deficits compared to those in which control is divided between parties. Hallerberg and von Hagen (1997) analysed the impact of the electoral systems and the number of parties on fiscal policy outcomes and concluded that the process of delegation of authority to the finance minister or the commitment to negotiated fiscal contracts may have a significant impact on the budget deficit growth, arguing that such institutions can be particularly effective in keeping deficits low in countries with some form of political instability. Moreover, Hallerberg and von Hagen (1997) suggest that countries that want to reduce their deficits should choose one of these budgetary institutions based on a form of government, either a single-party majority government or a multi-party coalition government (whereby single-party governments are more suitable for delegation, while multi-party governments rely more on fiscal contracts). In addition, the authors point out that the comparison of the various systems and solutions applied indicates that (under certain conditions) the role of a strong finance minister can be extended to multi-party governments. Alesina et al. (1999) also emphasize the significance of cross-country variation in fiscal performance, explaining these differences by focusing upon the procedures which lead to the formulation, approval and implementation of the budget. Analysing the impact of budgetary procedures on a sample of 20 Latin American and Caribbean countries (between 1980 and 1992), the authors conclude that more transparent and hierarchical procedures[4] lead to lower deficit levels.

While some results are consistent with theoretical predictions, others require more detailed analysis. Moreover, there is a specific degree of criticism of applied econometric tools, which are highly sensitive to sample size, time period used as well as to the selection of variables. From the aspect of countries included in the analysis, criticisms usually refer to the government ideology. It is generally assumed that proportional electoral systems lead to more redistribution by facilitating the election of left-wing parties which represent the interests of low-income voters, while right-wing governments representing the interests of high-income voters are associated with plurality electoral system (for details see Roberts Clark, Golder and Golder Nadenichek, 2009:713-715). Therefore, according to the authors, this argument could illustrate why the expenditures are higher under the proportional system. In a situation in which the electoral system is determined on the basis of policies implemented by policymakers, this could account for the correlation with ideology: under the domination of left-wing voters one would choose a proportional electoral system, while the plurality system would be chosen under the domination of right-wing ideology (Persson and Tabellini, 2004b). However, the authors also argue that empirical results cast doubt on this criticism

[4] Alesina and Perotti (1999) stressed that hierarchical budgetary procedures are analogous to majoritarian electoral systems.

since even if electoral systems affect policy through the ideology of the government (and not e.g. through the number of parties in the government) then the electoral rule itself would not be a valid instrument for the incidence of coalition governments in a regression on government expenditure which is in contrast with obtained research results. Acemoglu (2005) presents a comprehensive critique of various estimation methods and variable selection, especially from the aspect of the application of the ordinary least squares method (OLS) which relies on the exogeneity of political institutions. The author points out that although the OLS results uncover interesting patterns, they do not completely identify causal effects since political institutions are determined by various social factors that are not fully controlled for in the models. Therefore, he suggests an alternative approach within which political institutions should be endogenous, i.e. determined by the same factors that have a direct effect on economic policy outcomes[5].

Furthermore, while various studies include in their samples a large number of countries that differ in numerous aspects, it is also interesting to focus research on more homogeneous group of countries. Finally, since many findings are still preliminary and the subject of continuous debates, the research area on the impact of political institutions has much potential for further analysis. Because existing strategies for comparative research tend to ignore the relationship among electoral systems, party structures, the government formation and fiscal policy making, research needs to focus more on better understanding of the detailed mechanisms regarding the influence of political institutions on economic policy (as suggested by Persson and Tabellini, 2003).

The literature review revealed a process of decision making that differs from the ideal normative model. The government does not necessarily operate in the public interest but serves the interests of various agents (i.e. state capture) and leads to different effects on various social groups (Acocella, 2005; Hellman and Schankerman, 2000). Therefore, discussions regarding electoral system reforms have been present since the 1990s in both countries characterized as "new democracies" and in developed democracies such as the United Kingdom. In addition, some reforms have been implemented e.g. in New Zealand, Japan and Italy (Persson and Tabellini, 2004b). However, it still remains an open question which combination of different dimensions of political institutions is superior. In this context, the contribution of economists to the discussion on the future of the political institutions at the EU level is relatively slight (Voigt, 2009).

4 EMPIRICAL ANALYSIS

Analysis of the effects of fiscal and hence political institutions was stimulated by the need to control excessive spending and deficits in OECD and developing countries; as well as by the European Union's desire to design a set of rules to

[5] Rational agents should understand and have preferences over both implications of economic policies and various political institutions (Acemoglu, 2005).

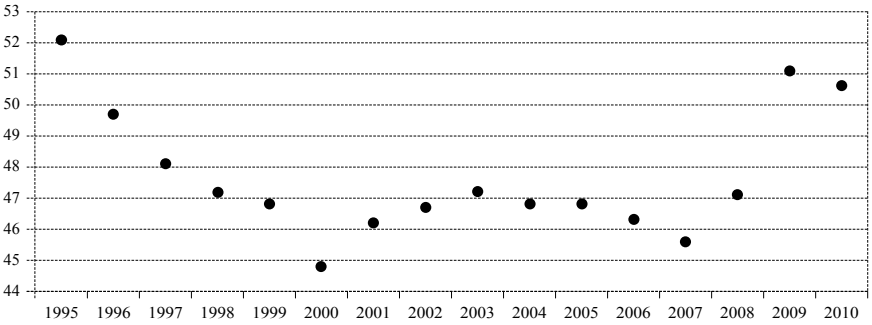
FINANCIAL THEORY AND PRACTICE
37 (2) 161-179 (2013)

govern national fiscal policies in its member states (von Hagen, 2006). The significance of political institutions for economic policy making is reflected through their governing of decisions regarding public finances, which can result in mitigation of adverse effects of the principal-agent and common-pool problem (for details see von Hagen, 2006). Furthermore, Lohman (2006:523) highlights two important issues. First, that economic policy deviates from the normative aspects of economic theory and second, that economic performance changes over time and differs across countries to a degree that economic factors cannot explain. The author also raises the question whether political factors – collective action and political institutions – can explain these issues.

Therefore, the goal of this section is to analyse empirically theoretical predictions about the impact of political institutions on fiscal policy outcomes in the EU and Croatia. The research encompasses the analysis of the indirect impact of electoral systems on government spending. Special weight in this paper is given to a panel data analysis for the period between 1995 and 2010 on a sample of 25 EU member states[6] and Croatia. Figure 1 shows the average size of government spending in the EU–27 (measured by the share of total general government spending in GDP). We can see that there was not much variation until 2008 when a significant increase was recorded. On the other side, figure 2 shows that cross-country expenditure (average values for the period between 1995 and 2010) ranges from 35% to 55% of GDP. Based on these trends, it appears that the size of the state varies among countries, and slightly less over time.

Figure 1

The share of total general government spending in GDP (EU-27 average), 1995-2010

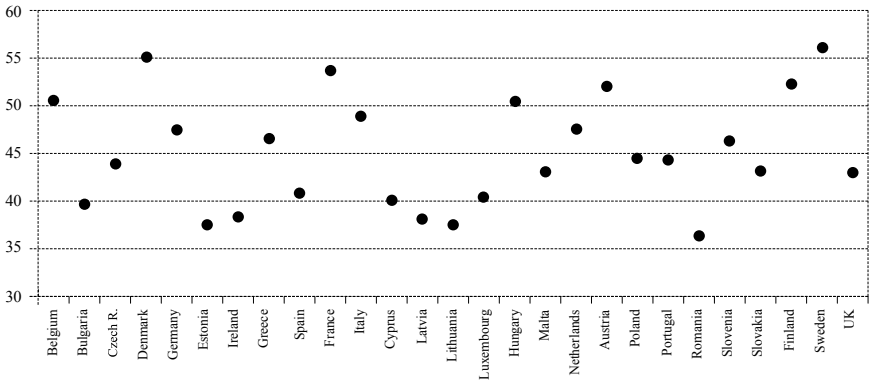


Source: Eurostat.

[6] Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, France, Finland, Greece, Ireland, Italy, Latvia, Lithuania, Hungary, Netherlands, Germany, Poland, Portugal, Romania, Slovenia, Slovakia, Spain, Sweden, UK.

FIGURE 2

The share of total general government spending in GDP (cross-country average for 1995-2010 period)



Source: Eurostat.

Since with the process of EU integration member states commit themselves to follow certain rules on their policies, which results in the implementation of similar economic policies at national levels, the main question then is what caused the observed variation. One of the potential answers is that political institutions have a significant impact on economic policy making. This is supported by the research of Hallerberg, Strauch and von Hagen (2007) who argue that although all EU member states are faced with the same fiscal framework, there are significant variations in their budgetary institutions at national levels, stemming from the specific characteristics of their political institutions. In Croatia, the issues of political institutions were partially the research subject of Rubil and Švaljek (2010) who, based on an analysis of the Croatian political system, argue for the use of fiscal rules. However, according to the present writers' knowledge, there are few detailed papers on the correlation between political institutions and fiscal policy outcomes.

From the aspect of political institutions that are usually analysed in the literature, all EU countries except France and UK have a proportional electoral system[7]. Therefore, we analyse the source of variation in government expenditure from the aspect of specific dimensions within the electoral system. Thus, the contribution of this paper to the literature is reflected in analysis of detailed mechanisms, i.e. indirect effects of electoral systems (through selected dimensions of government fragmentation, political competition and political stability) on the size of government. Based on the recommendations of Aidt and Eterovic (2011), analysis is performed on a more homogenous group of countries (so far, most research has conducted analysis of a sample of a large number of developed and developing

[7] From the aspect of the form of government, all of the member states except Cyprus, Poland and Lithuania have a parliamentary system.

countries that differ in their economic, geographic, cultural and social characteristics).

4.1 DESCRIPTION OF THE MODEL AND VARIABLES

Econometric analysis is performed using the dynamic panel model[8] based on the Arellano-Bond (1991) generalised method of moments (GMM). Compared to static models, dynamic panel models are often used in economics since even though the coefficient on the lagged dependent variable is not of direct interest, allowing for the dynamics may be crucial for recovering consistent estimates of other parameters (Bond, 2002). Since the dataset used in this paper is characterized by a smaller number of periods and large number of observation units, the Arellano-Bond estimator is used. This estimator is widely used for the analysis of linear relationship with the dynamic dependent variable (i.e. variable dependent on its own past values) and in a situation in which the independent variables are not strictly exogenous. In addition, the estimator takes into account the specificity of each observed unit and allows for heteroskedasticity and autocorrelation within the unit of observation, but not across them (Roodman, 2006). The Arellano-Bond estimation begins by transforming all regressors, usually by differencing, and uses the generalised method of moments (Hansen, 1982). Furthermore, since data for all countries and periods of interest are not available, an unbalanced[9] panel model is used. The model is described by the following equation:

$$y_{it} = \mu + \delta y_{i,t-1} + \beta_i x_{itK} + v_i + u_{it}, \text{ and} = 1,\ldots, \text{N}, t = 1,\ldots, \text{T}, \qquad (1)$$

where N is the number of units of observation, T is the number of periods, y_{it} stands for the value of the dependent variable (total general government expenditures for 25 EU member states and Croatia, expressed as a share in GDP – *exp*) i in the period t, the parameter μ is the constant, δ is the scalar, $y_{i,t-1}$ is the one-period-lagged (one year) dependent variable (for the same country), $x_{it1},\ldots,x_{itK}$ are the K of independent variables (*herfgov, polityIV, gdp_gr, pop* and *stabs*) for the member state i during the period t (i.e. x_{it}' is 1 x K and β is K x 1), v_i is the fixed element or random error for the unit of observation, and u_{it} the error term. It is assumed that all variables x_{it} are strictly exogenous and uncorrelated with any u_{it}[10].

[8] In general, given the characteristics of the panel data, we can distinguish between static (combined or pooled models, fixed effect models and random effect models) and dynamic models. The static panel models are robust in terms of the correlation within the unit of observation, but the choice of the panel model is not simple since the correlation between observations within a single unit of observation must be constant regardless of time period across these observations (Škrabić, 2009). This may impose some limitations since economic variables usually feature a correlation between the current value of the variable and its value from the previous period, and if this correlation is ignored, the estimated parameters of the model will be consistent but inefficient with biased standard errors (Škrabić, 2009).

[9] In balanced panel data models all units have values in all periods.

[10] However, the assumption of strict exogeneity is often replaced by the assumption of predetermination, which means that the current and lagged values of each independent variable are uncorrelated with the current values of error terms (Škrabić, 2009).

Following the research of Gregorini and Longoni (2010), government fragmentation is proxied by the Herfindahl index[11] (*herfgov*) which represents a measure of concentration of ruling coalition. In the case of single-party government, the index equals 1 while in the case of a coalition government, it takes a value between 0 and 1. Thus, the higher the number of parties in coalition government the lower is the value of the Herfindahl index. On the other hand, the index will be higher with the dominant party in the coalition government. From the aspect of the effect on government expenditures, a higher fragmentation (lower index value) leads to an increase in the expenditures. The higher the number of parties in the coalition government, the higher the probability of a common-pool problem since each political party will try to target the interests of their constituency (Persson and Tabellini, 2003). That is, an increase in the value of Herfindahl index (i.e. the decrease of the number of parties in the coalition government) results in the decrease of government spending. Therefore, we expect a negative sign of the coefficient with this variable. Furthermore, although *polityIV* is generally interpreted as a measure of democracy, according to some authors this variable can also be interpreted as a measure of the degree of political competition among political parties, interest groups and other organized factions who compete in order to gain political power within a defined political structure (for more details see Aidt and Eterovic, 2011). From this aspect, a higher degree of political competition can be associated with more efficient government (ruling party has incentives for better performance in order to be re-elected) so in this case a negative sign of the coefficient is expected (Aidt and Eterovic, 2011; Besley, Persson and Sturm, 2010)[12]. However, in a case in which the probability of a re-election is low, politicians can behave opportunistically and one can expect an increase in government expenditure in order to "buy" the votes needed to win the elections. Finally, the variable *stabs* is used as a variable for political stability and it is defined as the share of veto players that drop out of the government in any given year (Beck et al., 2001). The sign of the coefficient on the variable *stabs* can be both positive and negative: while higher stability is in general characterised by lower government expenditure (Devereux and Wen, 1998), it could also lead to excessive spending and higher debt since it could make it easier for government to use public finances strategically in order to keep the parliamentary majority (Tabellini and Alesina, 1990; Padovano and Venturi, 2001). We also use the following control variables: *gdp_gr* and *pop*. Variable *gdp_gr* represents the value of the real GDP growth rate and it is used as a proxy for general economic development and the impact of business cycles on expenditures. The expected sign of this variable can be positive or negative, depending on the discretionary fiscal policy. Furthermore, the variable *pop* indicates the proportion of the population aged 60 years and over, and as the aging population puts additional pressure on the increase in total expenditures (primarily through spending on pensions and health care) we expect a positive sign of the

[11] Generally, the measure is calculated as the sum of the squared seat shares of all parties in the government and shows how the seats are distributed within the government coalition.

[12] Additional reasons for expected negative coefficient with the variable *polityIV* are listed in Aidt and Eterovic (2011).

coefficient with this variable. The lagged value of a dependent variable (one-period lag) will be used as an instrumental variable. Furthermore, the validity of the instruments selected for the evaluation of the model is tested using the Sargan test[13]. Besides the Sargan test, testing the autocorrelation in residuals is also performed using the m_1 and m_2 tests[14]. Table 1 lists the variables used in the analysis as well as data sources.

Table 1
Variables and data sources

Variable	Description	Source
exp	Total general government expenditure (in % of GDP)	Eurostat, Croatian National Bank
herfgov	Herfindahl index	Database of Political Institutions (DPI)
polityIV	Political competition	Polity IV Project
bdp_gr	Real GDP growth rate	Eurostat
pop	Share of population aged 60 years and over	Eurostat
stabs	Political stability	Database of Political Institutions

Source: Authors' compilation.

4.2 RESULTS AND IMPLICATIONS FOR CROATIA

Table 2 shows the results of the estimated impact of the selected variables on budgetary expenditures in the EU member states and Croatia as well as the diagnostic tests of dynamic panel data analysis. The tests for first- and second-order autocorrelation yield the expected results, i.e. the tests do not reject the absence of second-order autocorrelation[15] among differenced residuals. Moreover, the Sargan test for over-identification restrictions does not reject the null hypothesis of the absence of correlation between the residuals and the instrumental variables. The lagged dependent variable is statistically significant and has a positive sign. Furthermore, the results show that the variables *herfgov*, *bdp_gr*, *pop* and *stabs* are statistically significant, with the expected signs of estimated coefficients. Therefore, general government spending in EU member states and Croatia is influenced by government fragmentation and political stability; higher government fragmentation (a lower Herfindahl index) leads to an increase in government expenditures.

[13] The Sargan test for over-identification of the restrictions in the statistical model (i.e. the validity of instrumental variables) is based on the assumption that the residuals should be uncorrelated with a set of exogenous variables if the instruments are exogenous. This test has the null hypothesis that the instrumental variables are uncorrelated with the set of residuals.

[14] The null hypothesis of the m_1 test assumes the absence of a first-order autocorrelation between differenced residuals, and the null hypothesis of the m_2 test assumes the absence of a second-order autocorrelation between differenced residuals.

[15] Considering that the first order autocorrelation is usually expected among the residuals its presence is often neglected. On the other side, the absence of second-order autocorrelation does not refer to problems of model specification, i.e. does not imply that some of the moment conditions are invalid (Huang, 2006; Škrabić, 2009). Furthermore, despite the existence of the first order autocorrelation but with no second-order autocorrelation, GMM estimates are consistent (Arellano and Bond, 1991).

Furthermore, political stability (decrease in the variable *stabs*) is positively associated with government spending. Control variables – GDP growth rate and aging population – are also significant in the model. Finally, the degree of political competition (*polityIV*) and the constant term are not statistically significant.

Table 2

Results of the dynamic panel model

Variable	Results
C	-0.093 (0.283)
$\exp_{t-1}$	0.678 (0.000*)
herfgov	-2.784 (0.010*)
polityIV	-0.051 (0.886)
gdp_gr	-0.329 (0.000*)
pop	0.658 (0.085***)
stabs	-1.073 (0.007*)
Number of observations	355
Number of countries	26
Sargan test (p-value)	0.5241
Autocorrelation of first order (p-value)	0.0000
Autocorrelation of second order (p-value)	0.8278

*Note: *,**,*** indicate statistical significance at levels of 1%, 5% and 10%; p-values are in brackets.*

Source: Authors' calculation.

Results are consistent with previously described theoretical and empirical studies (e.g. Persson and Tabellini, 2006; Persson, Roland and Tabellini, 2003; Gregorini and Longoni, 2010; Hallerberg and von Hagen, 1997, etc.). However, the key issue is the normative implications of the research. Electoral systems (through defining the "rules of the game") are supposed to establish a balance between the representation and accountability regarded as two measures of the performance of democratic institutions (Persson and Tabellini, 2006). The dimension of electoral systems that attracts the most attention is proportionality – proportional systems lead to an increase in political representation in combination with adverse fiscal policy outcomes so the main question is whether (and how) this trade-off can be mitigated (Fabrizio and Mody, 2007). Since electoral systems are operating in the complex framework of historical, social, cultural, institutional and political factors, a historical and empirical approach is essential to normative issues (Nohlen, 1992). Finally, the design of any potential electoral reform includes two key steps. The first step is based on the scientific and political evaluation of the functionality of the existing electoral system, while the second step encompasses defining the objectives of electoral politics (Kasapović, 2003).

Therefore, the results obtained in this study can serve as a basis for the analysis of the practical role of political institutions in economic policy making and can have

significant implications for Croatia due to the continuing debates of whether Croatia needs yet another reform of the electoral system. In 1990s Croatia changed all of the main models of the electoral system: absolute majoritarian system (1990), mixed system with an equal weight of majority and party list seats (1992), mixed system with the prevailing share of list seats (1995) and proportional electoral system with multi-member districts and closed (blocked) lists (2000) (Kasapović, 2001). In addition, in 2000 the semi-parliamentary form of government was replaced with the parliamentary one which consequently limited the powers of the President and strengthened the role of the Government[16]. Considering that Croatia has implemented a number of reforms in a relatively short period of time, it would be advisable in future research to analyse whether these reforms are reflected in the size and composition of government spending, budget balance and public debt. Although so far there has been no detailed research on this issue, it can be concluded that the reform introducing a proportional electoral system increased the frequency of coalition governments. Since 2000 Croatia has had some form of coalition government, and this, according to theoretical assumptions and the results of empirical analysis, leads to an increase in government spending. This finding is important since with more frequent coalition governments, there is a higher probability of common-pool problem between ruling parties where each of them will try to benefit their own constituencies thus increasing the total government expenditure (Voigt, 2009). All of this could also have had an impact, primarily through the decrease of accountability, on voters in Croatia – both on their decisions regarding which party to punish (reward) in the case of adverse (favourable) economic performance as well as on decrease diminution in voter confidence in the government. Therefore, the findings obtained in this paper could contribute further to discussions on potential reforms of electoral system (or some of its dimensions) in Croatia.

5 CONCLUDING REMARKS

A review of theoretical predictions and previous empirical research has shown that political institutions affect the outcomes of economic policy. However, the detailed mechanisms through which specific institutions affect different outcomes are ambiguous and the empirical literature in this area is still faced with numerous challenges. Results of the empirical analysis performed in this paper show that statistically the most significant effect on government spending comes from government fragmentation and political (in)stability, which is in line with previous studies suggesting that the electoral system has an indirect impact on policy outcomes. It has been shown that higher government fragmentation leads to an increase in government spending. This result is important for Croatia, which during the analysed period had some form of coalition government, an institution that is usually characterized with common-pool and the collective decision-making pro-

[16] The main characteristics of the presidential form of government were high concentration of power in the institution of the President who was the main actor in the political system as well as the high personification of politics.

blems. However, given that there are still some dimensions of electoral systems that are not considered in this paper, which also can have an impact on the design of fiscal policy, one should be careful with interpretation of results regarding the superiority of one electoral system over another.

Taking into account all of the limitations of the research (endogeneity of political institutions, the sample size and time period), the findings in this paper are preliminary. The main objective is to encourage further discussion in this research area, which has not previously been analysed in this way in Croatia. Moreover, with the negative effects of the global economic crisis one can expect that more attention will be directed towards the positive and normative aspects of constitutional political economy.

REFERENCES

1. Acemoglu, D., 2005. Constitutions, Politics, and Economics: A Review Essay on Persson and Tabellini's the Economic Effects of Constitutions. *Journal of Economic Literature*, 43(4), pp. 1025-1048. doi: 10.1257/002205105775362069
2. Acocella, N., 2005. *Economic Policy in the Age of Globalisation*. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511753947
3. Aidt, T. S. and Eterovic, D. S., 2011. Political competition, electoral participation and public finance in 20th century Latin America. *European Journal of Political Economy*, 27(1), pp. 181-200. doi: 10.1016/j.ejpoleco.2010.06.006
4. Alesina, A. [et al.], 1999. Budget Institutions and Fiscal Performance in Latin America, *Working Paper Series*, [online]. Available at: <http://www.iadb.org/res/publications/pubfiles/pubwp-394.pdf>.
5. Alesina, A. and Perotti, R., 1999. Budget Deficits and Budget Institutions in: J. M. Poterba and J. von Hagen, eds. *Fiscal Institutions and Fiscal Performance*. Chicago: University of Chicago Press, pp. 13-36.
6. Arellano, M. and Bond, S., 1991. Some test of specification for Panel data, Monte Carlo Evidence and Application to Employment Equations. *Review of Economic Studies,* 58(2), pp. 277-297. doi: 10.2307/2297968
7. Beck, T. [et al.], 2001. New Tools in Comparative Political Economy: The Database of Political Institutions. *World Bank Economic Review*, 15(1), pp. 165-176.
8. Besley, T., Persson, T. and Sturm, D.M., 2010. Political Competition, Policy and Growth: Theory and Evidence from the United States [online]. Available at: <http://econ.lse.ac.uk/~tbesley/papers/bps.pdf>.
9. Blume, L. [et al.], 2007. The Economic Effects of Constitutions: Replicating – and Extending – Persson and Tabellini. *Cesifo working paper, No. 2017*. Available at: <http://www.cesifo-group.de/portal/pls/portal/docs/1/1187570.PDF>.
10. Bond, S. R., 2002. Dynamic panel data models: a guide to micro data methods and practice. *Portuguese Economic Journal*, 1(2), pp. 141-162. doi: 10.1007/s10258-002-0009-9
11. Croatian National Bank. *Statistical Survey*: *Government finance*. Available at: <http://www.hnb.hr/statistika/hstatistika.htm>.
12. Devereux, M. B. and Wen, J. F., 1998. Political instability, capital taxation and growth. *European Economic Review*, 42, pp. 1635-1651. doi: 10.1016/S0014-2921(97)00100-1
13. Eurostat, 2011. Available at: <http://epp.eurostat.ec.euroa.eu>.
14. Fabrizio, S. and Mody, A., 2007. The Value and Reform of Budget Institutions [online]. Available at: <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2004436>.

15. Gregorini, F. and Longoni, E., 2010. Inequality, Political Systems and Public Spending [online]. Available at: <http://www.socpol.unimi.it/papers/2010-03-16_Filippo%20Gregorini.pdf>.
16. Hallerberg, M. and von Hagen, J., 1997. Electoral Institutions, Cabinet Negotiations, and Budget Deficits in the European Union. *NBER Working Paper,* No. 6341 [online]. Available at: <http://www.nber.org/papers/w6341.pdf?new_window=1>.
17. Hallerberg, M., Strauch, R. and von Hagen, J., 2007. The design of fiscal rules and forms of governance in European Union countries. *European Journal of Political Economy*, 23(2), pp. 338-359. doi: 10.1016/j.ejpoleco.2006.11.005
18. Hansen, L., 1982. Large sample properties of generalized method of moments estimators. *Econometrica*, 50(3), pp. 1029-1054. doi: 10.2307/1912775
19. Hellman, J. and Schankerman, M., 2000. Intervention, Corruption and Capture. The nexus between enterprises and state. *Economics of Transition*, 8(3), pp. 545-576. doi: 10.1111/1468-0351.00055
20. Huang, W., 2006. Emerging Markets Financial Openness and Financial Development. *Working paper No. 06/588.* University of Bristol: Department of Accounting and Finance.
21. Kasapović, M., 2003. *Izborni leksikon*. Zagreb: Politička kultura.
22. Kaspović, M. (ed.), 2001. *Hrvatska politika 1990.-2000. Izbori, stranke i parlament u Hrvatskoj*, Zagreb: Fakultet političkih znanosti.
23. Klašnja, M., 2008. Electoral Rules, Forms of Government, and Political Budget Cycles in Transition Countries. *PANOECONOMICUS*, 55(2), pp. 185-218. doi: 10.2298/PAN0802185K
24. Lohman, S., 2006. The Non-Politics of Monetary Policy in: B. R. Weingast and D. A. Wittman, eds. *The Oxford Handbook of Political Economy*. Oxford: Oxford University Press, pp. 523-544.
25. Milesi-Ferretti, G. M., Perotti, R. and Rostagno, M., 2002. Electoral Systems and Public Spending. *The Quarterly Journal of Economics*, 117(2), pp. 609-657. doi: 10.1162/003355302753650346
26. Nohlen, D., 1992. *Izborno pravo i stranački sustav*. Zagreb: Školska knjiga.
27. Padovano, F. and Venturi, L., 2001. Wars of attrition in Italian government coalitions and fiscal performance: 1948-1994. *Public Choice,*109(1-2), pp. 15-54. doi: 10.1023/A:1012014128810
28. Persson, T. and Tabellini, G., 2000. *Political Economics: Explaining Economic Policy.* Cambridge, MA: MIT Press.
29. Persson, T. and Tabellini, G., 2003. *Economic Effects of Constitutions*. Cambridge, MA: MIT Press.
30. Persson, T. and Tabellini, G., 2004a. Constitutional rules and fiscal policy outcomes. *American Economic Review*, 94(1), pp. 25-64. doi: 10.1257/000282804322970689

31. Persson, T. and Tabellini, G., 2004b. Constitutions and Economic Policy. *Journal of Economic Perspectives*, 18(1), pp. 75-98. doi: 10.1257/089533004773563449

32. Persson, T. and Tabellini, G., 2006. Electoral Systems and Economic Policy in B. R. Weingast and D. A. Wittman, eds. *The Oxford Handbook of Political Economy*. Oxford: Oxford University Press, pp. 723-737.

33. Persson, T., 2002. Do Political Institutions Shape economic Policy. *Econometrica*, 70(3), pp. 883-905. doi: 10.1111/1468-0262.00313

34. Persson, T., Roland, G. and Tabellini, G., 2003. *How do electoral rules shape party structures, government coalitions, and economic policies?* [online]. Available at: <http://bcep.haas.berkeley.edu/papers/prt4elrul.pdf>.

35. Polity IV Project. *Political Regime Characteristics and Transitions 1800-2010* [online]. Available at: <http://www.systemicpeace.org/inscr/inscr.htm>.

36. Poterba, J. M., 1994. State Responses to Fiscal Crises: The Effects of Budgetary Institutions and Politics. *Journal of Political Economy*, 102(4), pp. 799-821. doi: 10.1086/261955

37. Roberts Clark, W., Golder, M. and Nadenichek Golder, S., 2009. *Principles of Comparative Politics*. Washington: CQ Press.

38. Roodman, D., 2006. How to Do xtabond2: An Introduction to "Difference" and "system" GMM in Stata. *Working Paper Number 103*, Center for Global Development.

39. Roubini, N. and Sachs, J. D., 1989. Political and Economic Determinants of Budget Deficits in the Industrial Democracies. *European Economic Review*, 33(5), pp. 903-938. doi: 10.1016/0014-2921(89)90002-0

40. Rubil, I. and Švaljek, S., 2010. Medium-term Fiscal Prospects in Croatia: Some Back-of-the-envelope Calculations and a Case for Fiscal Rules. *Conference Fiscal Policy in the Crisis and Beyond. Short-term Impacts and Long-term Implications* [online]. Available at: <http://www.eizg.hr/hr-HR/Medunarodna-konferencija-EIZ-a-602.aspx>.

41. Škrabić, B., 2009. *Determinante razvoja financijskog sustava zemalja središnje i istočne Europe*. PhD. University of Zagreb.

42. Snowdon, B. and Vane, H., 2005. *Modern Macroeconomics: Its Origins, Development and Current State*. Edward Elgar, Cheltenham, UK.

43. Tabellini, G. and Alesina, A., 1990. Voting on the budget deficit. *American Economic Review*, 80(1), pp. 37-49 [online]. Available at: <http://dash.harvard.edu/bitstream/handle/1/4553030/alesina_votingbudget.pdf?sequence=2>.

44. Voigt, S., 2009. Positive Constitutional Economics II-A Survey of Recent Developments. *Joint Discussion Paper Series in Economics No. 36-2009* [online]. Available at: <http://www.uni-marburg.de/fb02/makro/forschung/magkspapers/36-2009_voigt.pdf>.

45. von Hagen, J., 2006. Political Economy of Fiscal Institutions, in B. R. Weingast and D. A. Wittman, eds. *The Oxford Handbook of Political Economy*. Oxford: Oxford University Press, pp. 464-478.