

## CROSS-COUNTRY DIFFERENCES IN GOVERNMENT SECTOR ACTIVITIES<sup>2</sup>

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### ABSTRACT

*The purpose of the analysis presented in the article is to identify various economic, social, political, demographic and cultural factors that could shape the differences in the size of government sector across countries and, with the use of econometric analysis empirically verify the effect of those factors. The analysis focuses only on "budgetary" government, meaning that the size of government is measured with a certain government spending ratio. The results of the analysis revealed that economic factors are more important in explaining the variation in the size of government consumption spending, whereas political, social and cultural factors are more important in explaining the variation in the size of transfer spending. In addition, the results indicate that the relative size of government spending is inversely related to the extent of the regulation of the economy.*

**Key words:** *budgetary government, size of government spending, cross-country variations, determinants of differences, empirical analysis.*

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### 1. Introduction

One of the major current issues in the social sciences is the expansion of government in recent times. Namely, absolute and relative size of government sectors grew rapidly in the majority of industrialised countries over the past century (Tanzi, 1997). It is worth noting that the literature on the determinants affecting the growth in size of government is quite comprehensive and numerous explanations have been developed (see, for example, Lane, 1995; Tanzi and Schuknecht, 2000; Bailey, 2002). However, growth in government spending and regulation was not fully symmetrical across countries (Tanzi and Schuknecht, 2000), indicating that large cross-country differences in the size of government exist nowadays, even among developed countries. Consequently, the main

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question that ought to be answered in the article is, why such differences exist in the size of government and which factors shape those differences. In other words, the answer on the question concerning the reasons behind the fact why one country is economically more laissez-faire than the other should be provided. Therefore, the aim of the analysis presented in the article is to theoretically identify various economic, political, social, demographical and cultural factors influencing the variations in the size of government spending across countries and with the use of multiple regression analysis empirically verify the effect of those factors on the size of government.

## **2. Definition and measurement of the size of general government sector**

A total economy of a country can be divided into different sectors. In this context, the System of National Accounts (1993) defines general government sector as consisting of entities that fulfil the functions of government as their primary activity. In other words, general government sector should consist of all government units and all non-market non-profit institutions that are controlled and mainly financed by government units. This means that general government sector does not include public corporations or quasi-corporations, which are part of the public sector according to the Government Finance Statistics Manual (2001). Moreover, general government sector (following government) can consist of three levels of government: central; state, provincial, or regional; and local.<sup>3</sup>

A variety of ways exist in the literature by which the size of government is measured. These measures are usually spending based, typically with total general government expenditures or general government consumption expenditures.<sup>4</sup> Still, the main relative measure of the size of government is the government expenditures ratio (total government outlays as a percentage of gross domestic product) and should characterise the extent of government utilisation of domestic resources. Total government expenditures include spending of all levels of government (central, local, etc.)<sup>5</sup>, and two main categories of government spending exist (Bailey, 2002):

- Exhaustive expenditures, which include government purchases of inputs used in government production of goods and services, purchases of outputs from the private sector and investment in fixed assets.<sup>6</sup>

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<sup>3</sup> It is worth noting that not all countries have all three levels; some may have only central government or a central government and one lower level.

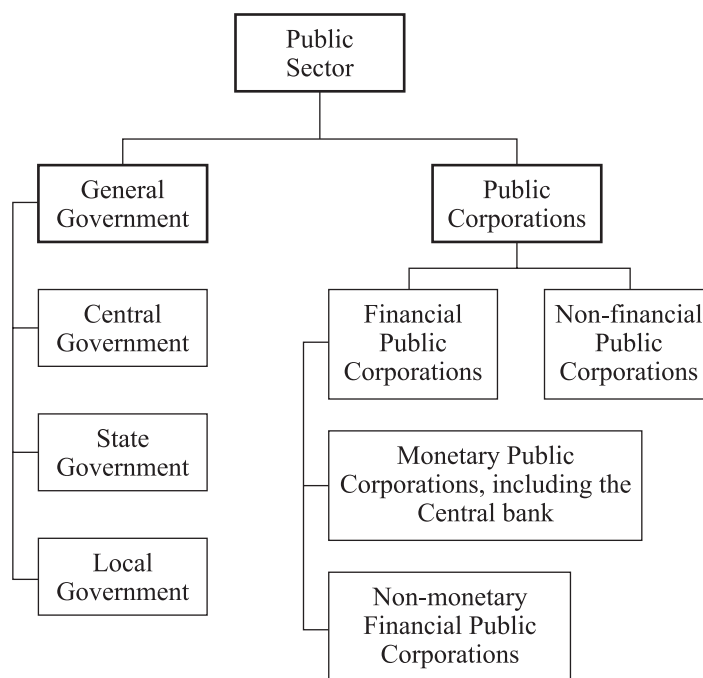
<sup>4</sup> The latter is used more frequently as it is usually available for a wider range of countries. However, this measure only encompasses certain aspect of government activities and not all of them.

<sup>5</sup> Some cross-country studies use central government expenditures as a share of GDP to measure the size of government. However, as stated by Gwartney, Holcombe and Lawson (1998), those figures can often be highly misleading, because the central government figures understate the size of government for countries where substantial expenditures are undertaken at lower levels of government.

<sup>6</sup> Exhaustive expenditures can be alternatively called real or consumption expenditures (see World Development Indicators, 2001).

- Transfer expenditures, which usually include subsidies to private sector firms, payments of interest, government granted loans and overseas (foreign) aid. In this case, the money is transferred from taxpayers to recipients.

Figure 1  
The general government and the public sector



Source: Government Finance Statistics Manual, 2001.

The main advantage of using total government spending ratio as a measure of the size of government is that it expresses the size (and scope) of government in one single index number. However, a reservation exists in practice about the focus on government spending ratio as a measure of the size of government. Namely, government expenditure ratio only includes those government activities, which result in financial flows in government accounts. As Posner (1971) stresses, fiscal instruments are only one of two instruments for executing public (government) policy, the other instrument being regulation. Moreover, Leonard (1986) argues that government budgets will understate the true size of the government sector by not recording the so-called “quiet side” of government activity. Consequently, it can be derived that the influence of government in an economy goes beyond its spending activities and tax collections. For example, regulation of economic activities or governmental ownership of enterprises are two examples of government intervention that can have little impact on the size of

government budget, but they can have profound economic effects. Accordingly, each of these “non-budget” items is equivalent to a tax and expenditure programme, meaning that government may be “large” with a relatively small expenditure.<sup>7</sup> Namely, there is a real possibility for similar government spending ratios to be associated with vastly different regulatory regimes.<sup>8</sup>

### **3. Government sector growth and variations in the size of government**

As already mentioned, the absolute and relative size of government rose substantially in the 20<sup>th</sup> century and a gradual expansion in the economic role of the state can be observed.<sup>9</sup> The literature recognises that the first attempts to account for the government sector growth in industrialised countries were demand side hypotheses (Lane, 1995). Those demand side oriented hypotheses suggested among other things that socio-economic development implies government resource allocation, that increasing affluence and collective ideologies imply larger budgets, that the dominance of the left in society or government would mean budget expansion replacing market mechanisms, that sudden social shocks necessitated budgetary shift-points toward much higher levels of government funding, that welfare spending by the neighbourhood state implied a demand for welfare programmes at home, and that the increasing openness of the developed economies of the world created a demand for budgetary stabilising of the erratic fluctuations of markets. Still, demand side hypotheses were not supported by empirical evidence and, consequently, some supply side oriented explanations emerged. For example, there is the hypothesis that government spending involves bureaucratic waste, that government sector growth is a function of bureau size maximisation, that government sector productivity is negative, claiming more resources every year for the output, that budget-making process rests upon fiscal illusions about the relation between cost and benefit, that an invisible tax structure and high tax elasticities encourage spending, and that the basic structure of the government sector implies budget-making which favours the supply of goods, services and money at the expense of genuine demand for these entities.

Nevertheless, growth in government spending was not fully symmetrical across countries, causing large cross-country differences in the size of government that exists

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<sup>7</sup> See Pevcin (2004) on the detailed discussion about “non-budgetary” government. In this article, focus is only on “budgetary” government.

<sup>8</sup> In this context, Armeij (1995) stresses that like the concept of the invisible hand of the market is well understood, also the full anatomy of the political economy should be understood – especially the invisible foot of the government. Namely, government has the power to stimulate the economy but at the same time it can crush economic performance and incentives by excessive regulation and spending activities. Especially regulatory activities represent the kind of invisible foot that can easily crush everything and everybody it touches (steps on).

<sup>9</sup> For the industrialised countries, the share of government spending in GDP grew, on average, from about 12 percent before World War I to about 45 percent in the middle of 1990s (Tanzi, 1997).



nowadays.<sup>10</sup> For instance, the most striking change in the size of government took place in Sweden and Norway, which had among the smallest governments until World War II, but by the 1990s, they were among countries with the largest governments. For example, in the beginning of the 1990s Sweden even surpassed the 60 per cent margin. When looking at the literature explaining reasons for these asymmetric developments, one can observe that it is not so comprehensive as the literature on the determinants that caused the growth in the size of government. Still, the existing literature focuses more on the political economy factors, which include the following:

- Size of country, trade openness, and the degree of integration in the world economy. For example, Alesina and Wacziarg (1998) argue that the size of government correlates negatively with country size and positively with trade openness, contrary to what most economists would expect. They have shown that smaller countries have a larger share of government consumption in GDP, and are also more open to trade. Moreover, they argue that these empirical observations are consistent with recent theoretical models explaining country formation and break up. Namely, larger countries can "afford" to be closed, while small countries face stronger incentives to remain open. Conversely, as trade liberalises, regional and cultural minorities can "afford" to split because political borders do not identify the size of market.<sup>11</sup> Similarly, Rodrik (1998) finds a strong positive association between openness and government size. According to him, this is some sort of a paradox since it is often assumed that closed economies have more interventionist governments, as trade restrictions themselves are a form of government intervention. Rodrik explains this paradox by arguing that government expenditures are used to provide social insurance against the risk of terms of trade shocks that open economies face, meaning that government spending obviously plays a risk-reducing role in economies exposed to a significant amount of external risk. He shows that higher levels of government consumption would be associated with reduced volatility in income flows. These findings also suggest that the international economic liberalism obviously gives government a central role and Ruggie (1982) calls this "the compromise of embedded liberalism".<sup>12</sup>

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<sup>10</sup> For instance, based on OECD (2001) and EBRD (2001) data, in South Korea total general government expenditures were approximately 20 percent of GDP in 2000. That share was approximately 30 percent in Ireland and something below 40 percent of GDP in the United Kingdom. Slovenia, as an example of the developed transition economy, had government spending above 40 percent of GDP. However, government appropriated even more than 50 percent of GDP in countries like Denmark and Sweden.

<sup>11</sup> Economic literature on country formation and break up is another interesting field within public sector economics. In more recent text, Alesina, Spolaore and Wacziarg (2003) show that the benefits of size decline relative to the cost of heterogeneity, meaning that the optimal size of a country declines with trade openness. This means that smaller countries can enjoy the benefits of cultural homogeneity without suffering the costs associated with small markets.

<sup>12</sup> Since both international trade and the scope of government activity have expanded significantly in the post-war period in most countries of the world, Rodrik (1998) suggests that scaling governments down may actually harm the prospects of maintaining free trade on a global scale. In my opinion, this is highly controversial idea both from statistical and economic points of view. Namely, it is not logical to see public sector reform efforts as a serious threat to globalisation. Moreover, Rodrik does not provide the proof that causality goes from government size to the level of openness of the country – he takes the relationship between these two variables as identical in both ways.

Moreover, Eichner and Wagener (2002) argue that the optimal size of welfare state is larger the higher are the risks that it cannot insure (so-called background risks). This view highly challenges classical liberal expectations that the combination of globalisation of the economies with the onset of new technologies will transform modern governments back into a night-watchman state. Nevertheless, according to Wolf (2001), constraints on the government are becoming somewhat tighter and Leviathan (i.e., government as ever growing "monster") may have reached its limits, since governments will find it more difficult to pursue an inflationary policy and they will be forced in future to relate the taxes they raise to the benefits they provide.

- Level of economic development, preferences and the heterogeneity of taxpayers and voters.

According to Wagner's and Wilensky's hypothesis, more developed countries should have larger government. Besides, it can be argued that larger urbanisation rate of a country should positively affect government spending, since urbanisation is likely to facilitate increasing taxation and to create more demands for government spending. Similarly, the share of dependent population positively affects demand for social services and consequently government spending (Holsey and Borcharding, 1997). In addition, governments should spend more in societies with relatively unequal income distribution because the median voter is poorer than the mean voter. The benefits to a median voter of redistributive spending outweigh the costs borne by such a voter of increased taxation to finance spending (Persson and Tabellini, 1999).

- Structure of government and political institutions.

Three fundamental features of political institutions are: (a) structure of government, contrasting centralised and decentralised governments; (b) the electoral rule, contrasting majoritarian (pluralitarian) and proportional electoral systems; and (c) the regime type, contrasting presidential and parliamentary regime. Basically, if taxpayers are mobile, the devolution of tax bases to sub-national governments (i.e. political decentralisation) encourages competition for tax bases and may help to reduce the size of government. Reliance on grants and transfers from higher levels of government to finance sub-national governments is associated with larger governments and fiscal imbalances at the sub-national level (de Mello, 1999).

Persson (2001) argues that presidential regimes should have smaller governments and countries with majoritarian elections should have smaller welfare-state programmes and less corruption. In addition, Alesina, Glaeser and Sacerdote (2001) argue that the two party system and the lack of proportionality in the United States electoral system created obstacles that blocked the formation of a strong and lasting Socialist party, which more generally limited the political power of the poor. The upheaval in continental Europe over the last century has meant that there were no durable institutions, which could protect property against popular demand for redistribution. This appears to be one of the explanations of difference in levels of redistribution and government expenditure between the United States and European countries.

- Social fractionalisation and ethno-linguistic-religious heterogeneity of the society. This factor should have two counteracting influences. On the one hand, Annett (2000) has revealed that higher social fractionalisation (as measured along ethno-linguistic and religious dimensions) leads exogenously to greater political instability, and governments use government consumption as a buffer against political instability. In addition, a high dependency ratio has been found to increase demand for government spending on education, health care, social security including pensions, and defence, and on programmes to satisfy regional and ethnic interests. This means that the effect of fractionalisation on government consumption is positive, but indirect, via the political instability channel. In a somewhat different fashion, Alesina, Glaeser and Sacerdote (2001) argue that the differences in level of redistribution between the United States and the European countries appear to be the result of racial heterogeneity, since racial aversion in the United States obviously makes redistribution to the poor, who are disproportionately black, unappealing to many voters.<sup>13</sup>

#### **4. Cross-country analysis of determinants of variation in government spending**

The aim the analysis is to identify factors influencing the variations in the size of government across countries. Therefore, cross-section modelling is used in order to focus upon international comparison in variations in the size of government. The empirical analysis consists of two stages. In the first stage, the sample includes 114 world countries, both democratic and undemocratic as well as more or less developed countries.<sup>14</sup> The size of general government consumption expenditure will serve as a proxy for the size of budgetary government. In the second stage, the sample is reduced to 32 developed and democratic countries<sup>15</sup>, thereby opening the possibility to verify the effect of political and social factors on government size. The size of government consumption and transfer spending and also the size of total government spending in GDP will serve as proxies for the size of government.<sup>16</sup>

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<sup>13</sup> Accordingly, authors stress that the largest difference in the composition of government spending between the United States and Europe is in the area of transfers to households (including social security), and subsidies, which are the main tools for income redistribution.

<sup>14</sup> The sample includes 36 European countries, 33 African countries, 24 American countries and 21 Asian/Oceanic countries.

<sup>15</sup> The sample consists of 27 OECD member countries (out of 30 OECD countries Iceland, Japan and Turkey are excluded), four "transitional" non-OECD economies (Estonia, Latvia, Lithuania and Slovenia) and Chile as newly industrialised country and most developed country in Latin America.

<sup>16</sup> The selection of the size of samples depends on the availability of the data, both for dependent as for explanatory variables, and not on any other reasons. Namely, those countries are included in the sample for which all the relevant data about government size and its determinants exist and could be obtained. It is worth noting that the lack and inadequacy of empirical data caused that government size could not be modelled uniformly using only one multiple regression model for each government size measure, since in the smaller sample additional explanatory variables are used.

#### **4.1. Determinants of cross-country variation in the size of government consumption spending**

The purpose of this estimation is to examine the determinants of the variations in the size of budgetary government and the relationship between budgetary and non-budgetary government. Therefore, the size of the sample varies according to the availability of the data for the non-budgetary government. Since only the data for general government consumption could be obtained in such large sample, it serves as a proxy of the size of budgetary government. Total general government consumption as a share of GDP (CON) is used as a dependent variable. The sample includes both democratic and undemocratic countries, so the effect of political institutions is not verified. Following variables are used as explanatory variables in the regression analysis in the sample of 114 countries<sup>17</sup>:

- The real gross domestic product per capita (GDPC):  
Wagner's law states that government spending both absolutely and relatively expands as economies develop. Therefore it is to be expected that the level of GDP per capita would positively affect the size of budgetary government.
- The country size (POP) and trade openness (OPN):  
As already mentioned, Alesina and Warczziarg (1998) argued that government spending correlates negatively with country size, whereas Rodrik (1998) found out positive correlation between government size and trade openness.
- The share of population above 65 (OLD) and below 19 (YOU):  
The economic theory recognises the importance and side effects of population aging. This involves increased demand for government spending on health care, social security, etc. Moreover, a high dependency ratio in the form of a large share of young population should for example increase demand for government spending on education, so it is to be expected that both variables should positively affect government size.
- The urbanisation rate (URB):  
The share of population living in urban areas should positively affect the size of government spending, since urbanisation is likely to facilitate increasing taxation and to create more demands for government spending.
- The government ownership of enterprises (OWN) – the “non-budgetary” public sector:  
Although public corporations are not included in general government sector, it is to be expected that they should affect the level of government spending implicitly. Namely, they operate in order to provide certain (public) goods and services for which probably the most important consumer (but not the only one) is government. Therefore, it should be expected that government ownership of enterprises (i.e. the number of public corporations) would exert positive impacts on government

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<sup>17</sup> See Appendix for the sources of data and the explanation of variables included in the analysis.

consumption through purchases of goods and services produced by state-owned enterprises.

- The extent of regulation of economic activities (REG) – the “non-budgetary” government:

There are no theoretical predictions about the relation between budgetary and non-budgetary government, although Garen and Trask (2001) argue that more open countries have smaller non-budgetary and larger budgetary government. However, they do not discuss directly the relationship between those two forms of government. Intuitively, it should be expected that those two forms of governments should act as substitutes (Pevcin, 2004). The possible reason could be the simple mathematical fact; if they could be both transformed into budgetary forms, their sum could not exceed the size that is preferred or demanded by voters or taxpayers – in the worst case the size of government could not exceed the total economy output. This implies that more of one form of government is associated with the smaller extent of other form.

The results in the below table were obtained with the method of sequential elimination of statistically insignificant explanatory variables.<sup>18</sup> The results show that, after taking into account the presence of heteroscedasticity in OLS estimation, the cross-country differences in the size of government consumption expenditures are statistically significant and positively correlated with the differences in the share of elderly population, also positively correlated with the differences in the magnitude of the government ownership of enterprises, but negatively correlated with the magnitude of the regulation of the economy. The results obtained obviously indicate, that the size of budgetary government and the size of non-budgetary government move in the opposite direction – larger budgetary government implies smaller non-budgetary government, meaning less regulation. Possible explanation of this phenomenon is that the extension of regulation of the economy should act as a direct substitute to the fiscal instruments of the government. The reason lies in the fact that the existence of small government (in terms of fiscal instruments) indicates that private sector has a very large role in the economy and government oversees its activity through the regulation.

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<sup>18</sup> In this and in all subsequent analyses, elimination of variables is based on their statistical insignificance and on the extent they “inflate” variance of the model.



Table 1  
 Factors affecting variations in the size of government consumption  
 spending<sup>19</sup>

Dependent variable CON	OLS	OLS (White's HC)	OLS (Newey-West HAC)
CONST	105.925 (3.59, 0.0005)	105.925 (3.29, 0.0013)	105.925 (2.89, 0.0047)
OLD	0.3680 (3.38, 0.0010)	0.3680 (2.91, 0.0044)	0.3680 (2.29, 0.0242)
URB	0.0543 (2.05, 0.0424)	0.0543 (1.43, 0.1558)	0.0543 (1.32, 0.1883)
OWN	0.6403 (3.37, 0.0010)	0.6403 (3.69, 0.0004)	0.6403 (3.57, 0.0005)
REG	-11.876 (-2.18, 0.0316)	-11.876 (-2.39, 0.0186)	-11.876 (-2.14, 0.0346)
N	114	114	114
R <sup>2</sup> <sub>adj.</sub>	0.2741	0.2741	0.2741
s <sub>e</sub>	46.166	46.166	46.166
F-stat. (p-value)	11.67 (0.0000)	11.67 (0.0000)	11.67 (0.0000)
Heterosced. (OLS)	Yes	/	/

Source: Own calculations.

#### 4.2. Determinants of the size of government in developed and democratic countries

In this section, the determinants of the variations in the size of government spending and regulation are examined in a sample of 32 developed countries for which cross-sectional data on all relevant explanatory and dependent variables could be obtained. The dependent variables are the share of general government consumption in GDP (CON), the share of general government transfers and subsidies in GDP (TRF) and the share of total general government expenditures in GDP (EXP). The explanatory variables are all variables included in previous analysis of democratic countries, that is real gross domestic product per capita (GDPC), the share of population above 65 (OLD) and below 19 (YOU) in total population, trade openness of the country (OPN), size of country (POP), urbanisation rate (URB), and the extent of government ownership of enterprises (OWN). Besides, additional explanatory variables are included in the analysis<sup>20</sup>:

<sup>19</sup> Calculations have been obtained by using EViews software. Values of t-statistics and p-values are in parentheses. OLS indicates ordinary least squares estimation, White's HC represents heteroscedasticity-consistent covariance matrix, and Newey-West HAC heteroscedasticity- and autocorrelation consistent standard error. The regression results are subsequently reported in that manner throughout the whole text, unless stated otherwise. Besides, double-log regression models could not be applied, since also dichotomous and polytomous variables are used in the analyses (e.g., OWN, REG etc.).

<sup>20</sup> See Appendix for sources of data and description of variables.



- Three political dichotomous dummy variables for country's regime type (PRES), electoral rule (PLUR) and political decentralisation (FED).  
It is expected that presidential political regime should negatively affect the size of budgetary government. According to theoretical predictions it is expected that the presence of majoritarian electoral rule should positively affect the size of government consumption spending, negatively affect government transfer spending. In addition, political decentralisation should positively affect the size of budgetary government. The reason should be very clear, since any additional legislator would imply additional government intervention.
- Share of largest ethno-religious group in total population (FRAGM).  
This variable indicates the level of ethno-religious homogeneity of society. It should have two countervailing effects. On the one hand, it should negatively affect government spending through political instability channel. Namely, in more heterogeneous societies government spending to different groups within society should serve as a means of increasing the political stability of a country, meaning that spending through this "channel" should be minimised in more homogeneous countries. On the other hand, it should positively affect government spending, since in more homogeneous societies voters are likely to approve increased spending to certain social groups, because it is larger probability that they do not belong to certain ethno-religious minority. This effect is based on presumption that it is in human nature to prefer the people of the same kind. It is clear that the inclusion of this variable is appropriate only in the sample of democratic countries, where various social groups have possibility to express their demands in political process.
- Dichotomous dummy variable for countries in transition (TRA).  
The purpose of these variables is to identify possible cultural or institutional differences that would imply different average size of government in this "region". Namely, the purpose for separate variable for transitional countries is to identify possible effects of the change in economic system, which largely reduced the role of government. It is to be expected that remnants of past regime would cause the larger government in those countries.
- General government employment as percent of total labour force (GEMP).  
This variable indicates the share of labour force that is employed in government administration. Because the salaries of government employees represent an important item of government spending, it should be expected that government employment should positively affect the size of government spending, in particular government consumption spending.
- Income distribution in society, measured with Gini coefficient (GINI):  
The prediction is that governments should spend more in societies with relatively unequal income distribution because the median voter is poorer than the mean voter. Therefore, it is expected that high levels of Gini coefficient would positively affect the differences in the size of budgetary government across countries.

Table 2  
 Factors affecting government consumption spending in developed countries

Dependent variable CON	OLS estimation
CONST	2.6391 (0.73, 0.4704)
GEMP	0.1590 (1.88, 0.0711)
OLD	0.5549 (3.26, 0.0030)
URB	0.1053 (2.74, 0.0108)
PLUR	-4.0348 (-4.03, 0.0004)
N	32
$R^2_{adj}$	0.6472
$s_e$	2.56
F-stat. (p-value)	15.22 (0.0000)
Heterosced. (OLS)	No

Source: Own calculations.

The results presented in the table above indicate that government employment and urbanisation of the country positively affect government consumption expenditure. Rather surprisingly, the results also reveal that the existence of plurality in electoral rules negatively affects government consumption in developed countries, which is contrary to theoretical predictions. However, the regression constant is statistically insignificant, indicating the possibility that some important explanatory variable was left out.

Interestingly, based on the results in table 3, more open countries should have larger transfer spending, which is in line with Cameron's and Rodrik's findings that governments provide social insurance against the risk of terms of trade shocks that open economies face. It is evident that social insurance can easily be provided with increased transfers and subsidies. Similarly, more homogeneous developed societies have larger transfer spending, meaning that voters find transfer spending to ethno-religious groups less appealing. According to theoretical predictions, transfer spending is negatively associated with plurality in electoral rules, but positively associated with political decentralisation, possibly through the existence of flypaper effects<sup>21</sup> in decentralised countries, and also positively associated with transition economies due to their extensive social problems connected with political and economic transformation. Again, there is evidence that budgetary and non-budgetary

<sup>21</sup> See Brennan and Pincus (1996).

government move in the opposite direction. Surprisingly, the share of population above 65 seems to explain the variation in government consumption expenditures but not in government transfers and subsidies in this group of developed countries. However, the results in table 4 indicate that only two variables are statistically significant explanations of the variations in the size of total government spending across countries. This means that government spending can be modelled easier if its components are analysed, suggesting that different factors obviously affect consumption and transfer spending.

Table 3  
 Factors affecting government transfer spending in developed countries

Dependent variable TRF	OLS estimation
CONST	45.926 (0.75, 0.4630)
OPN	0.0526 (2.39, 0.0249)
PLUR	-61.494 (-3.24, 0.0034)
FED	92.701 (4.48, 0.0001)
FRAGM	0.2252 (3.77, 0.0009)
REG	-33.807 (-3.00, 0.0061)
TRA	57.308 (2.39, 0.0247)
N	32
$R^2_{adj.}$	0.5403
$s_e$	43.650
F-stat. (p-value)	7.07 (0.0002)
Heterosced. (OLS)	No

Source: Own calculations.

Table 4  
 Factors affecting total general government spending in developed countries

Dependent variable EXP	OLS estimation
CONST	17.8240 (3.43, 0.0018)
OLD	1.8196 (5.22, 0.0000)
PLUR	-5.3468 (-2.53, 0.0172)
N	32
$R^2_{adj.}$	0.5469
$s_e$	5.89
F-stat. (p-value)	19.71 (0.0000)
Heterosced. (OLS)	No

Source: Own calculations.

## 5. Discussion and concluding remarks

The main question that tried to be answered in the article is, which economic, social, political, demographic and cultural factors that shape differences in the size and composition of government spending could be theoretically identified and empirically verified in order to obtain theoretical and practical macro foundations of modern theory of government. The multiple regression analysis of the determinants of government size across countries revealed that the problem of multicollinearity between regressors exists. The difficulty is that the problem of multicollinearity is combined with the lack of theoretical knowledge about the relative importance of certain determinants of government size, so the elimination of explanatory variables was subjected to "technical verification", since all variables "possess" some theoretical justification to be included in the analysis. Although this approach enables modelling government size with statistically significant explanatory variables, it could, on the other hand, lead to the commitment of a specification bias, which further causes the problem of "model underfitting", where some relevant explanatory variables are omitted. Besides, the lack and inadequacy of empirical data caused that government size could not be modelled uniformly using only one multiple regression model for various government size measures. Consequently, one of disadvantages is that that regression analysis of those government size measures had to be performed separately for narrowed samples. Besides, the results of analysis revealed that they are influenced by the size and structure of the sample under consideration. This is in line with expectations, since different structure of sample analysed implies also different factors that cause the differences between countries. Following, the factors affecting different components of the size of government are summarised below.

a) General government consumption spending.

Government consumption expenditure ratio is the most available and used measure of the size of budgetary general government. Consequently, this gave the ability to collect data for 114 world countries. The results show that the cross-country differences in the size of government consumption expenditures are positively correlated with the differences in the share of elderly and urban population, also positively correlated with the differences in the magnitude of the government ownership of enterprises, but negatively correlated with the magnitude of the regulation of the economy, government ownership of enterprises having the largest explanatory power in the model. However, results somehow change after the sample under consideration is narrowed to 32 developed countries. In this case, government employment and urbanisation of the country positively affect government consumption expenditure, but the existence of plurality in electoral rules should, opposite to theoretical predictions, negatively affect government consumption in developed countries.

b) General government transfer spending.

According to analysis, more open countries have larger transfer spending, which is in line with previous findings by Rodrik. Similarly, more homogeneous developed societies have larger transfer spending, indicating that voters obviously find transfer spending to ethno-religious groups less appealing. According to theoretical predictions, transfer spending is negatively associated with plurality in electoral rules, but positively associated with political decentralisation, possibly through the existence of flypaper effects in decentralised countries, and also positively associated with transition economies due to their extensive social problems connected with political and economic transformation. Again, there is evidence that the size of budgetary and non-budgetary government moves in the opposite direction.

c) Total general government spending.

The empirical results indicate that only two variables are statistically significant explanations of the variations in the size of total government spending across countries, being the share of population above 65 and the existence of plurality in electoral rules. This means that it is necessary to model various components of government spending separately.

The empirical analysis presented in this article obviously indicates, that the size of budgetary government and the size of non-budgetary government move in the opposite direction – larger budgetary government implies smaller non-budgetary government.<sup>22</sup> Moreover, the sensitivity of the obtained results to the size and structure of the sample under consideration has been revealed as the process of narrowing the sample of countries under observation showed that economic factors are becoming less important

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<sup>22</sup> In this context, Pevcin (2004) describes possible so-called transmission mechanism of government activities by analysing the size of non-budgetary government. He argues that larger openness of the country hampers the ability of government to regulate the economy. Reduced regulation boost gross domestic product growth and according to Wagner's hypothesis this very likely increases government spending, consequently explaining the inverse relationship between those two forms of government activities. In other words, he states that economic development causes that government activities become more "visible".

in explaining the differences in the size of government consumption spending across countries.<sup>23</sup> It can be observed that composition of government spending also matters, as economic factors are more important in explaining the variation in the size of government consumption spending, whereas political, social and cultural factors are more important in explaining the variation in the size of government transfer spending.

## 6. Conclusion

In the article, cross-country differences in the size of government spending are analysed. Consequently, the main question that ought to be answered is, why such differences in the size exist and which economic, political, cultural, demographic and social factors shape those differences. The results obtained by the empirical analysis revealed that the composition of government spending matters in explaining differences, as economic factors are more important in explaining the variation in the size of consumption spending, whereas political, social and cultural factors are more important in explaining the variation in the size of transfer spending. Besides, it has also been revealed that the size of government spending and the extent of regulation of the economy move in the opposite direction.

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<sup>23</sup> It could be put differently that in countries that are becoming more developed and rich also other factors begin more intensively to shape government spending decisions.



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### Appendix: Empirical analysis - variable description and data sources

Variable	Description	Data source <sup>24</sup>
CON	General government consumption expenditure (% GDP)	World Development Indicators (2001)
TRF	General government transfers and subsidies (% GDP)	Gwartney and Lawson (2002)
EXP	Total general government expenditure (% GDP)	OECD (2001), EBRD (2001)
GDPC	Real gross domestic product per capita (in USD)	World Development Indicators (2001)
OPN	Trade openness (sum of the share of imports and exports in % of GDP)	World Development Indicators (2002)
POP	Country size (population of the country in millions)	World Development Indicators (2002)
OLD	Share of population older than 65 years in total population (%)	U.S. Census (2001)
YOU	Share of population younger than 19 years in total population (%)	U.S. Census (2001)
OWN	Governmental ownership of enterprises; politomous dummy variable, values between 0 (min) and 10 (max)	Based on Gwartney and Lawson (2002)
REG	Extent of total regulation of the economy; values between 0 (min) and 10 (max)	Based on Gwartney and Lawson (2002)
URB	Urbanisation rate of a country (share of urban population in % of total population)	World Development Indicators (2002)
PRES	Political regime, dichotomous dummy variable, 1 – presidential political regime	Beck et.al. (2001)
PLUR	Electoral rules, dichotomous dummy variable, 1 – existence of plurality in electoral rules	Elections around the world (2003)
FED	Structure of government, dichotomous dummy variable, 1 – existence of political decentralisation	Beck et.al. (2001)
FRAGM	Fragmentation (homogeneity) of society (share of largest ethno-religious group in % of total population)	Encarta Encyclopedia (2003)
GEMP	Government employment (% of total labour force)	Schiavo-Campo et.al. (1997)
GINI	Income distribution in economy, measured with Gini coefficient	World Development Indicators (2000)

<sup>24</sup> Data for all variables are for year 2000 or closest year available.

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## ŠTO OBLIKUJE MEĐUDRŽAVNE RAZLIKE U OPSEGU DJELATNOSTI VLADINA SEKTORA?

### SAŽETAK

*Svrha analize predstavljene u ovom članku jest identificirati različite ekonomske, društvene, političke, demografske i kulturne čimbenike koji bi mogli oblikovati razlike u veličini državnog sektora u različitim državama te, uporabom ekonometrijske analize, empirijski provjeriti učinak tih čimbenika. Analiza se usmjerava samo na "proračunsku" vladu, što znači da se veličina vlade mjeri određenim omjerom državne/ proračunske potrošnje. Rezultati analize pokazali su da su ekonomski čimbenici važniji za objašnjenje varijacija u veličini državne potrošnje, dok su politički, socijalni i kulturni čimbenici važniji u objašnjenju varijacija u veličini transferirane potrošnje. Nadalje, rezultati također pokazuju da je relativna veličina državne potrošnje obrnuto proporcionalno povezana s opsegom u kojem ona regulira gospodarstvo.*

**Ključne riječi:** proračunska vlada, veličina državne potrošnje, međudržavne varijacije, odrednice razlika, empirijska analiza.

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