

## The Impact of Political Regime and Institutions on Government Size in Middle-Income Countries

SAIMA NAWAZ and IDREES KHAWAJA

This study analyses the impact of political regimes and institutions on government size while controlling for socio-economic factors for a group of 56 middle income countries over the period 1986-2014. The empirical analysis shows that the institutional quality index has a negative impact on government size. Furthermore, institutions have a positive impact on “productive” government spending, while having a negative impact on “unproductive” government spending. The analysis also shows that institutional democracy, political regime and stability of political system are the key political determinants of government size. A stable democratic system backed by well-defined institutions could help to manage government size. It ensures transparency and political contestability which leads to control over the use of public resources. The analysis further shows that the GDP per capita has a positive and significant impact on government size at all stages of development. It implies that there is a natural growth of government size due to economic development. This analysis provides useful insights for policy makers to manage government size. A stable political system supported by good quality institutions is a prerequisite to managing scarce public resources.

*JEL Classification:* E13, O43, O47

*Keywords:* Political Regime, Institutions, Government Size, Middle Income Countries

### 1. INTRODUCTION

The role of government to stabilise an economy and generate employment has been advocated by Keynes and remained the focus of consideration in the era of Adam Smith. Recent economic turmoil has generated new discussion about the role of government to restore long-term growth and stability. Promising arguments to restore growth and generate employment induced a substantial increase in the size of government. On average, government size (expense) has increased from 19.6 percent of GDP in 1973 to 28 percent of GDP in 2015 globally, with a similar increase across developed and developing countries<sup>1</sup> (WB, 2017). The increasing magnitude of government size persuades researchers to investigate its association with economic growth.

Saima Nawaz <saima.nawaz@comsats.edu.pk> is Assistant Professor, COMSATS University, Islamabad. M. Idrees Khawaja <idreespide1@gmail.com> is Head of Department, Air University School of Management, Air University, Islamabad.

*Authors' Note:* The authors are thankful to anonymous referee for giving valuable suggestions on the earlier draft to improve the overall quality of paper. This paper is heavily drawn from PhD Thesis of first author entitled “Institutions, Fiscal Policy and Economic Growth”.

<sup>1</sup>Similarly, government consumption expenditures have increased from 14.9 percent of GDP to 17.1 percent of GDP during the same time period.

Available literature is inconclusive about what contributes to government size. Several studies have confirmed a positive association between government size and economic growth (Agell, Lindh, & Ohlsson, 1997; Hsieh & Lai, 1994), while other studies have established a negative relationship between government size and economic growth (Butkiewicz & Yanikkaya, 2011; Fölster & Henrekson, 2001; Hansson & Henrekson, 1994; Landau, 1983, 1986; Nawaz & Khawaja, 2016).

Bergh and Henrekson (2011), based on a survey of the literature, concluded that a 10 percent increase in government spending is associated a 0.5 percent to 1 percent decrease in annual growth rate. What are the underlying factors responsible for a substantial increase in government size, despite a consensus on its negative association with growth?

Recent literature emphasises the role of institutional framework and political setup of the country in explaining the increasing trend of government size.<sup>2</sup> In the early 1960s, Peacock and Wiseman (1961) argued that economic, political and social differences need to be considered while explaining the behaviour of government expenditure. Various studies have attempted to analyse the impact of institutions and political systems on public policy (Milesi-Ferretti, Perotti, & Rostagno, 2002; Persson & Tabellini, 2005; Woo, 2011). However, further investigation is required in quantifying the role of institutions, and political regimes, in shaping government size, in four dimensions.

- (1) Existing studies are primarily confined to corruption as an institutional measure, paying no attention to other dimensions of institutions (Mauro, 1998). Further investigation is required to look at the contribution of different types of institutions such as rule of law, government stability and democratic accountability. Additionally, in existing literature, quality of democracy is used to measure the impact of democracy on government size (Adsera & Boix, 2002; Profeta et al. 2013; Sanz, 2017).
- (2) These studies ignore key aspects that influence government size. Firstly, government size is highly linked with the type of regime i.e. democratic or autocratic regime. Both have different implications for government size. Secondly, weak democracy has a different impact as compared to strong democracy (Iqbal & Daly, 2014). Thirdly, a stable political regime, whether democratic or autocratic, has a different impact on government size as compared to an unstable political regime. For example, India has a stable democratic system while Pakistan has an unstable system. India observes smooth growth pattern while Pakistan has cyclical growth trajectory. Similarly, the political regime of China is totally different from India but both are growing rapidly (Nawaz, 2015).
- (3) It is also evident that composition of government varies across developed and developing economies. Subsidies and other transfers have increased

<sup>2</sup>Over the few decades, institutions have received paramount consideration in determining the growth paths of nations. Institutions favour economic growth by promoting a favourable political environment and by increasing the effectiveness of policies (Acemoglu, Johnson, Robinson, & Thaicharoen, 2003). A majority of literature has supported these arguments (Acemoglu, Johnson, & Robinson, 2005; Acemoglu & Robinson, 2010; Nawaz, 2015; Nawaz & Khawaja, 2016; Rodrik, Subramanian, & Trebbi, 2004).

from 22 percent to 32 percent of total expense in developing countries with the growth rate of 3.2 percent, while the same has increased from 41 percent to 45 percent of total expense in developed countries with the growth rate of 0.65 percent in the last fifteen years (WB, 2017). It shows public resources are diverted to unproductive sectors especially in developing countries.

Moreno-Dodson (2008) argues that different public spending components have different impacts on growth. In this study, overall spending is divided into “productive” and “unproductive” expenditures based on *a priori* assumption about their contribution to growth. Productive expenditures could sharply increase with improved institutional quality and quality of political democracy, as large financial resources are spent on quality education and quality healthcare for all citizens. This would also contribute to higher growth as the labour force becomes healthier, better trained and hence more productive, and there is greater social cohesion as citizens develop a stake in the system.

- (4) These dimensions deserve further in-depth analysis to determine the role of institutions in shaping government size at different stages of development and various types of expenditures. Mulligan, Gil, and Sala-i-Martin (2004) argue that a comparative analysis of democracy and autocracy may enhance the understanding of democratic institutions in establishing the efficacy of public policies.

The objective of this paper is to understand how political regime and institutional framework shape government size, while controlling for socioeconomic differences in middle income countries. This group of economies shows considerable heterogeneity in institutional quality and launched a process of development and reforms, but are still in a transition phase (Iqbal & Daly, 2014). More specifically, this study investigates the impact of types of political regime, and quality and stability of political system on government size. In addition, the impact of six different types of institutions on government size is examined at various stages of development. This study also examines the impact of institutions on “productive” and “unproductive” expenditures.

The study contributes to the literature in various ways: First, it provides new insights on the implications of different types of political regimes in determining government size. Second, it highlights the relative importance of various forms of institutions in shaping government expenditures. Third, it gives new evidence on the contribution of institutions across productive and unproductive expenditures. Finally, on the policy front, this study provides new insights on the importance of political regimes and institutional framework in managing government size.

The remaining paper is presented as follows:

Section 2: A literature review

Section 3: The econometric model, data and estimation methodology

Section 4: Results and discussion

Section 5: Concluding remarks with policy framework

## 2. LITERATURE REVIEW

Various theoretical arguments are used to explain the nexus between political regime, institutional setup and government size. Generally, “constraints that human beings impose on themselves” are termed as institutions (North, 1990). The institutional school of thought argues that institutions frame government policy by ensuring the right allocation of public resources. Institutions enhance the productivity of government expenditures by allocating public resources in productive sectors (Gupta, De Mello, & Sharan, 2001; Mauro, 1998). Poorly defined institutions provide room for exploitation of public money by politicians and government officials for their own interest. Weak institutions create opportunities for rent seeking (Dethier, 1999).<sup>3</sup> An inefficient law and order framework, unclear and/or no property rights, and a weak democratic setup are the main sources of rent seeking in the system. These inefficiencies allow for exploitation of public resources.

North (1990) argues that rent seeking activities impose very high social and economic costs by distorting the allocation of resources, particularly shifting resources from productive to unproductive sectors (Cole & Chawdry, 2002; Iqbal & Daly, 2014). Rent seekers, particularly in developing countries, resist the implementation of reforms in economic and institutional frameworks because they are positioned at key decision making posts in both public and private sectors (Fischer, 2007). The scope of unproductive public investment depends on the strengths and weaknesses of institutions.

Bleaney, Gemmell, and Kneller (2001), and Moreno-Dodson (2008) divide expenditures into “productive”, which include education, health, general public services, transport, and communication, and “unproductive”, which include social security, welfare, recreation, and economic services. These studies show that productive expenditures have a positive impact on economic growth while unproductive expenditures have a negative impact on economic growth.

Weak institutions fail to resist the rent seeker pressure groups (Tollison, 2001), while a well-designed institutional system may not be manipulated by the interest group to allocate public resources in their own favour (Pradhan, 1996). This implies that prevailing institutional quality determines the composition and magnitude of government size. Rent seekers (politicians and government officials) plan the composition of expenditures so as to offer lower allocations in certain categories such as education and health and higher spending for categories such as defense and other major capital projects (Mauro, 1998).

Political regimes have a strong link with government size. It is argued that political competition limits the size of government (Eterovic & Eterovic, 2012). Tonizzo (2008) argues that a democratic setup faces stronger constraints than an autocratic environment, which allows an autocratic setup to consume more resources. This study finds that a marginal improvement towards democracy causes a 0.14 percent decrease in average government consumption. Aidt and Eterovic (2011) analyse the impact of political

<sup>3</sup>Rent seeking “usually implying the expenditure of scarce resources, to cause and capture artificially-created rents as well as transfers which are not part of society’s intended income redistribution” (Fischer, 2007). Iqbal and Daly (2014) defined as “any activity through which public power is exercised for private gain; this may involve misuse of public resources or, more generally, any attempted capture and commodification of state, social or commercial authority by politicians, public officials, elites and private interests” as rent seeking.

competition on government size in Latin America. This study shows that political competition is negatively related with government size.

Plümper and Martin (2003) find a non-linear relationship between the level of democracy and government size. This study concludes that the level of democracy is correlated with government size in a U shape. Under a weak democratic system, government size is large to meet the demands of rent by the elites. On the other hand, with high levels of democracy, spending is high to meet popular demand for public goods. The median voter model also predicted the same relation. For medium levels of democracy, none of these pressures exist and government size is at its minimum (Tonizzo, 2008). However, Mulligan, et al. (2004) show that the political regime, democratic or non-democratic, has no impact on government size.

Persson (2002) finds that presidential regimes are linked with smaller government size as compared to parliamentary regimes. Alesina and Wacziarg (1998) and Epifani and Gancia (2009) find that democracy has a positive and significant impact on size of government. Shelton (2007) also supports this relationship by arguing that democracy influences not only the size of government, but also its composition. On the other hand, Adsera and Boix (2002) find a negative association between democracy and government size.

Albalade, Bel, and Elias (2012) investigated the impact of democracy, electoral rules and parliamentary structure on military spending for a group of 157 countries over the period 1988-2006. This study finds that democracies based on the presidential form of government spend more on defense than parliamentary systems. In addition, majority voting systems increase the burden of defense more than proportional representation systems. This study concludes that institutions, especially democratic ones, may not have the same effect on the supply of public goods and services.

Profeta et al. (2013) analyse the relationship between political institutions and public spending in developing countries using data from 1990 to 2005. To measure political institutions, this study employs two indicators, namely political strength of democratic institutions, and protection of civil liberties. This study concludes that political institutions are not significantly related to public spending when controlling the country's fixed effects. This study concludes that democracy has a weak negative relation with government size.

Shonchoy (2016) examines the role of political institutions and governance structure for shaping public spending for developing countries using panel data of 97 economies over the period 1984-2004. This study finds that political institutions like democracy and governance indicators, like a control over corruption, have a positive and significant association with government consumption spending in developing countries.

These studies provide conflicting results. Therefore, more research is needed to produce reliable results. There could be three possible reasons for conflicting results, namely the range of institutional variables, the choice of sample countries, and using the estimation technique. This study extends the literature by covering six different dimensions of institutions, by looking at different types of political systems and by controlling econometric issues. This study further examines the impact of these indicators at different stages of development.

### 3. EMPIRICAL FRAMEWORK

#### 3.1. The Model

Following Shonchoy (2016), empirical assessment is carried out using following model:

$$GE_{i,t} = \alpha_1 + \alpha_2 PR_{i,t} + \alpha_3 INS_{i,t} + \gamma Z_{i,t} + \varepsilon_{i,t} \quad \dots \quad \dots \quad \dots \quad (1)$$

Where  $GE_{i,t}$  is the total government expenditures,  $PR_{i,t}$  represents political regime,  $INS_{i,t}$  represents the institutions for country  $i$  at time  $t$  and . Expected signs of democracy variables are negative, implying  $\alpha_2 < 0$ . The literature suggests that institutions have a positive impact on government size for productive sectors and negative in the case of unproductive sectors (Funk & Gathmann, 2011). This implies that the expected contribution of institutions is ambiguous and depends on the structure of government expenditure. Expected sign of institutions is positive ( $\alpha_3 < 0$ ) for productive expenditures and negative ( $\alpha_3 < 0$ ) for unproductive expenditures.

$Z$  matrix consists of socioeconomic factors which includes GDP per capita, physical capital, urbanisation, openness and inflation. It is assumed that that per capita income has a positive impact on government size (Cameron, 1978; Pham, Carmignani & Kler, 2017; Shonchoy, 2016). The positive relationship between GDP per capita and public expenditure is supported by the Wagner law. According to the Wagner law, the demand for public goods and services is income elastic indicating that increase of public spending is impacted by the economic development of the country (Cameron, 1978; Lamartina & Zaghini, 2011).

Trade openness has a positive relationship with government size (Cameron, 1978; Rodrik, 1998; Shelton, 2007; Shonchoy, 2016) as envisioned in the ‘compensation hypothesis’ initially proposed by Cameron (1978) and later developed by Ruggie (1982) or an insignificant impact on government size (Benarroch & Pandey, 2012). Ruggie (1982) argues that openness leads to an increase in the size of government. Rodrik (1998) further develops the compensation hypothesis by saying that greater trade liberalisation can stimulate spending in the form of redistributive spending to overcome the risks caused by the international market.

Inflation can have a positive impact on public spending (Neck & Schneider, 1988) or have a negative impact on government size (Lin, 1992). It is expected that physical capital has a positive relationship with government size.  $\varepsilon_{i,t}$  is the idiosyncratic error term.

#### 3.2. Data Description

This study uses a set of panel data for 56 countries collected from the World Bank’s “middle income” category over the period 1986-2014. The choice of economies is based primarily on data availability for required variables used in analysis. The sample is divided into two sub-groups, namely developed and developing; depending on their per capita GNI. Countries in lower-middle income (LMI) group are termed as developing countries and upper-middle income (UMI) countries are termed as developed countries.<sup>4</sup>

<sup>4</sup>There are four income groups categories in the World Bank dataset based on per capita GNI 2016 including: (i) “low income (\$1,005 or less)”; (ii) “Lower-Middle Income (\$1,006 to \$3,955)”; (iii) “Upper-Middle Income (\$3,956 to \$12,235)”; and (iv) “High Income (\$12,236 or more)”. There are 109 countries in LMI and UMI group (for list of countries used in analysis, see Appendix Table 1).

Various data sources are used to collect data. A brief description of each variable along with construction methodology and source is given below:

**Government size (GE):** The dependent variable government size is measured using the “General government final consumption expenditure % of GDP” available in the World Development Indicator (WDI) data sets published by the World Bank. This measure is frequently used in the literature to find the determinants of government size (Bergh & Henrekson, 2011; Pham et al. 2017; Shonchoy, 2016). This study also uses “total central government expenditure % of GDP” from Government Finance Statistics (GFS) published by the International Monetary Finance (IMF). The GFS also gives expenditure by functions of government<sup>5</sup> include expenditures on (i) general public services (GPS); (ii) defense (DEF); (iii) public order & safety (POS); (iv) economic affairs (ECA); (v) environment protection (ENP); (vi) housing & community amenities (HCA); (vii) health (HEL); (viii) recreation, culture, & religion (RCR); (ix) education (EDU); & (x) social protection (SOP). Following Moreno-Dodson (2008), expenditure by functions of government can be divided into two categories, productive spending includes GPS, HEL, EDU, HCA and ENP and unproductive spending includes DEF, POS, ECA, RCR, and SOP.

**Institutions (INS):** Following Nawaz (2015) and Nawaz and Khawaja (2016), this study constructed an institutional quality index to measure institutional quality using six different measures of institutions; namely (i) “government stability” (GS); (ii) “investment profile” (IP); (iii) “control over corruption” (CC); (iv) “law and order” (LO); (v) “democratic accountability” (DA) and vi) “bureaucratic quality” (BQ). The data on these measures are taken from the ICRG (International Country Risk Guide) collected by the PRS (Political Risk Services) group.<sup>6</sup> The range of each indicator is different; for example, GS and IP range from 0 to 12, while CC, LO and DA range from 0 and 6 and BQ from 0 to 4. Low value (0) indicates poor quality and high value indicates good quality. All measures are readjusted to define the range from 0 to 100. *INS* is defined as:

$$INS_{i,t} = (1.4 \times GS)_{i,t} + (1.4 \times IP)_{i,t} + (2.8 \times CC)_{i,t} + (2.8 \times LO)_{i,t} \\ + (2.8 \times DA)_{i,t} + (4.2 \times BQ)_{i,t} \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

**Political Regime (Democ):** Political regime is defined in three ways using data from POLITY IV.

- (i) Quality of institutional democracy ( $DEM_Q$ ): Quality of democracy ( $DEM_Q$ ) is measured using the democracy index where  $DEM_Q \in [0,10]$ . It captures institutional democracy and is measured by “competitiveness of political participation, competitiveness of executive recruitment, openness of executive recruitments and constraints on the chief executive”. The higher values represent a higher degree of institutionalised democracy. The country is weakly democratic if  $DEM_Q \leq \overline{DEM_Q}$ , and strongly democratic if  $DEM_Q > \overline{DEM_Q}$ .

<sup>5</sup><https://data.imf.org/?sk=5804C5E1-0502-4672-BDCD-671BCDC565A9>

<sup>6</sup>For further details on definition of these variables see Nawaz (2015). In addition, Nawaz and Khawaja (2016) also argue that the ICRG data is comprehensive than other data on institutions such as the World Governance Indicators (WGI) of the World Bank due to a long time period and more indicators.

- (ii) Type of political regime ( $DEM_T$ ):  $Polity2 \in [-10, +10]$  provides an information on the type of a political regime. Where +10 represents a strongly democratic system and -10 a strongly autocratic system.  $DEM_T = 1$  if  $Polity2 > 0$  representing democratic regime and  $DEM_T = 0$  if  $Polity2 \leq 0$  indicating autocratic regime.
- (iii) Stability of political system ( $DEM_S$ ):  $Polity2 \in [-10, +10]$  is used to measure the stability of political system. If  $Polity2$  observes less than 3 changes in score over the last three decades, the political system is termed as stable otherwise it is unstable. To measure this, first we calculate number of changes in the score as  $\Delta DEM_S = 1$  if  $Polity2_{it} \neq Polity2_{it-1}, \forall t$ . Using this information, we define  $DEM_S = 1$  if  $count(\Delta DEM_S) \leq 3$  for  $i$  and  $DEM_S = 0$  if  $count(\Delta DEM_S) > 3$  for  $i$ .

**Control Variables:** Per capita GDP ( $Y$ ) is taken at constant US\$ (2010). Trade openness/liberalisation ( $TRD$ ) is quantified as trade (% of GDP). Inflation ( $INF$ ) as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency. Urbanisation ( $Urban$ ) is measured as share of urban population to the total population. The “gross fixed capital formation (% of GDP)” is used to measure physical capital. The data on all these variables are taken from WDI.<sup>7</sup>

### 3.3. Estimation Methodology

To estimate the proposed model, this study uses a panel data estimation technique. This method allows us to control country and time specific heterogeneities. Two techniques, namely the “fixed effects” model (FEM) and “random effects” model (REM) are commonly used to estimate panel models. The FEM is the most common technique for estimation of linear panel regression. The FEM captures the time effects by introducing time dummies, one for each time interval, just like the dummy variable to account for cross-sectional effects. In the case of REM, it is assumed that intercept is random variables instead of fixed as in FEM. To decide between FEM and REM, this study uses the “Hausman test”. According to this test, rejecting the null hypothesis implies FEM is preferred estimation technique (the alternative hypothesis).

The literature argues that institutions are endogenous and the problem becomes complicated when other economic variables such as human capital are included in the model with the institutions (Nawaz & Khawaja, 2016). The possibility of endogeneity undermines the robustness of the fixed effect models. Shonchoy (2016) argues that instrumental variables estimation technique provides an ideal way to deal with endogeneity. The possibility of endogeneity undermines the robustness of the fixed effect models. To resolve this issue and establish robustness, this study uses the “system GMM” recommended by Arellano and Bover (1995) and Blundell and Bond (1998). The system GMM tackles endogeneity among all explanatory variables in the model (Arellano & Bond, 1991; Bond, Bowsher, & Windmeijer, 2001; Caselli, Esquivel, & Lefort, 1996). It is a widely used method in the recent literature to produce robust results (Iqbal & Daly, 2014; Nawaz, 2015; Nawaz, Iqbal, & Khan, 2015; Nawaz & Khawaja, 2016).

<sup>7</sup>Descriptive Statistics are available in Appendix Table 2 and Correlation Matrix in Appendix Table 3.



#### 4. EMPIRICAL RESULTS AND DISCUSSION

The impact of political regime and institutions on government size is estimated using the *FEM* because the *Hausman tests* favour the *FEM* specifications as compared to the *REM* specifications. To test the robustness of results we have also estimated the models using the “system GMM”. Various diagnostic tests have been used to confirm that models are well specified. The F-Statistics confirms that *FEM* specifications are well defined. Wald Chi-Square statistics test also confirms that “system GMM” specifications are well defined. AR1 and AR2 tests confirm validity of instruments in case of system GMM.

The empirical analysis shows that the institutional quality index (INS) has a negative impact on GE across the full sample. The estimated coefficients are significant in most cases, especially for fixed effect estimation (model 1-4). In case of sys-GMM, the coefficients are weakly significant (model 5-7), which suggests that the variable might be subject to omitted variable bias and hence should be treated cautiously. The estimated coefficients range from 0.034 to 0.15 (in absolute number) in different specifications (Table 1). This implies that an increase in institutional quality by one percentage point reduces overall government spending from 0.034 to 0.15 percentage points. This indicates that the better the quality of institutions, the lower the size of government.

The main argument for the negative association between institutional quality and public spending stems from rent seeking behaviour in the public sector (Fischer, 2007). Rent seeking is the biggest problem in allocating public resources. In developing countries, public resources are diverted to the unproductive sector, where politicians and public officials have more opportunities to earn commissions. In these countries, systems do not have controls that ensure proper implementation of development projects. Dethier (1999) also supported this viewpoint by arguing that politicians and government officials use their discretionary power to extract rent from development projects owing to weak institutional setup.

The impact of various types of political variables on government size is examined. First, this study examines the impact of institutional democracy ( $DEM_Q$ ). The empirical analysis shows that  $DEM_Q$  and government size are negatively associated (see models 2 & 5 in Table 1). This shows that the higher the quality of institutional democracy, the lower the size of government. This finding, again, is linked with the accountability of the system. Well-defined democratic institutions ensure the accountability of politicians and reduce opportunities for rent seeking. This ultimately requires fewer resources to meet public demand. Various studies have found similar results (Funk & Gathmann, 2011; Sanz, 2017; Tonizzo, 2008).

Secondly, the association of political regime ( $DEM_T$ ) with government size is examined. The empirical analysis shows that  $DEM_T$  has a negative impact on government size in both models (see models 3 & 6 in Table 1) but is only significant in case of sys-GMM (model 6), hence the association should be inferred cautiously. A democratic regime leads to lower government size as compared to an autocratic regime.

Thirdly, this study examines the role of political stability ( $DEM_S$ ) in determining the size of government. The analysis reveals that a stable political system favours lower government size as compared to an unstable system (see model 4 in Table 1). Under an unstable political environment, politicians prefer larger public resources to earn high

rents and spend on mega projects to gain popularity to renew their term in office. Again, the outcome is not robust due to a weak association with government size. The impact of ( $DEM_S$ ) is negative but insignificant in the case of sys-GMM estimation.

Three different measures help to infer the association between democracy and government size. It can be argued that to some extent, well-defined and stable democratic institutions will help to manage government size. Rent seeking can be controlled with institutional reforms as it increases transparency and political contestability which leads to control over the use of public resources (Fischer, 2007; Iqbal & Daly, 2014).

One of the frequently used determinants of government size is real GDP per capita. Empirical estimates show that real GDP per capita has a positive impact on government size. The estimated coefficients range from 0.98 to 3.62 in different specifications (Table 1). This implies that a 1 percent increase in GDP per capita would lead to 0.98 percent to 3.62 percent increase in government size. The association remains significant in many cases. It shows the existence of the Wagner law. Various studies have shown similar results. Shonchoy (2016) shows similar results to argue that rising GDP per capita, particularly in developing economies seems to increase their spending on consumption due to growing pressure on demand for goods and services available to the public. Pham et al. (2017) also supported the same findings for a panel of 62 countries. This study argues that richer countries have a bigger government size.

Trade openness/liberalisation has a positive and significant impact on government size in case of sys-GMM (Table 1) implying that the “compensation hypothesis” proposed by Cameron (1978) and Ruggie (1982) can hold in middle income countries. Again, it is important to mention that the impact remains insignificant in a few cases, especially in case of fixed effects estimation owing to omitted variable bias and endogeneity. Furthermore, the impact of trade openness mainly remains positive and significant at different stages of development. Again, in some cases the estimated impact shows negative and insignificant association with government size especially for countries with weak democracies. Recently, Benarroch and Pandey (2012) found similar results. This study finds no evidence of a causal relationship between trade liberalisation and public expenditure in the full sample and for sub-samples of low-income and high-income countries.

Inflation is used to measure the stability of a country’s macroeconomic framework. Empirical results show that inflation has a positive and significant impact on government size across the full sample (Table 1). The estimated coefficients show that a 1 unit increase in inflation would lead to 0.01 percent increase in government size. Inflation measures the price variability in the economy. Its impact on government size is channeled in many ways: First, increasing prices should be accompanied by increased public spending mainly in the development sector. The effect of prices is favoured by rising public spending, especially in developing countries, where inflation mainly remains high. Second, non-development expenditure such as employee compensation and transfer payments are indexed to inflation. Government increases these expenditures every year to adjust inflationary pressure. Finally, inflation induces uncertainty in the market which increases the cost of investment. Inflation reduces real returns on savings which causes an informational friction afflicting the financial system. These financial market frictions results in credit rationing and thus limit the availability of investment.

Table 1

*Impact of Political Regime and Institutional Quality on Government Size*

Variable	Fixed Effect				Sys-GMM			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
INS	-0.034 (0.01)**	-0.034 (0.01)**	-0.040 (0.01)***	-0.037 (0.01)***	0.051 (0.04)	-0.156 (0.06)**	0.053 (0.04)	-0.055 (0.03)*
DEM_Q	-0.062 (0.06)	-0.067 (0.04)*			-0.215 (0.11)*			
DEM_T			0.302 (0.33)			-9.569 (4.90)*		
DEM_S				5.774 (2.76)**			-4.918 (6.26)	
Y	1.693 (0.78)**	1.693 (0.78)**	1.822 (0.78)**	1.771 (0.78)**	3.621 (3.28)	1.684 (1.01)*	0.976 (1.32)	1.011 (0.36)***
TRD	-0.006 (0.01)	-0.006 (0.01)	-0.006 (0.01)	-0.005 (0.01)	0.033 (0.02)**	0.032 (0.02)	0.047 (0.03)*	0.075 (0.01)***
INF	0.001 (0.00)**	0.001 (0.00)**	0.001 (0.00)**	0.001 (0.00)**	0.001 (0.00)***	0.001 (0.00)***	0.001 (0.00)***	-0.004 (0.01)
Urban	-0.046 (0.04)	-0.046 (0.04)	-0.055 (0.04)	-0.051 (0.04)	-0.044 (0.08)	-0.009 (0.06)	0.020 (0.07)	0.167 (0.02)***
PC	-0.042 (0.04)	-0.042 (0.04)	-0.041 (0.04)	-0.042 (0.04)	-0.057 (0.06)	-0.157 (0.10)	-0.036 (0.06)	-0.200 (0.02)***
Income_Group		-13.091 (1.50)***			-3.540 (4.54)			
Constant	5.423 (5.33)	18.514 (5.47)***	4.547 (5.34)	4.832 (5.32)	-13.635 (18.66)	-0.530 (8.80)	2.372 (8.39)	16.076 (2.97)***
Observations	1,449	1,449	1,459	1,459	1,449	1,449	1,449	174
No. of Countries	55	55	55	55	55	55	55	19
R-squared	0.699	0.699	0.701	0.701				
F/Wald Chi2								
Value	106.0	106.0	108.7	109.4	42.57	39.21	28.58	462.5
Hausman test	23.14	23.52	22.50	18.19				
(Prob>chi2)	(0.00)	(0.00)	(0.00)	(0.00)				
AR1 P value					0.202	0.172	0.195	0.076
AR2 P value					0.906	0.969	0.883	0.454

Note: "General government final consumption expenditure % of GDP" (GE) is dependent variable in case of models 1 to 7 and "total central government expenditure % of GDP" in case of model 8. Robust standard errors are reported in parentheses. [\*], \*\* and \*\*\* denote significance at the 10, 5 and 1 percent levels, respectively].

To further support the main argument of a negative association between institutions and government size, this study divides total government expenditures into "productive" and "unproductive" categories and re-examines the impact of institutions. The results are reported in Table 2. The results show that institutions have a positive and significant association with productive spending while they have a negative and significant association with unproductive spending (Table 2). This implies that institutions are supportive to increase productive spending while helpful to reduce unproductive spending for a given set of countries. This indicates that prevailing institutional quality determines the size and composition of government spending. Well-defined institutions offer more allocation in the productive sector while a rent seeking economy with a weak institutional framework prefers higher allocation in unproductive sector.

Table 2

*Impact of Institutional Quality on Government Size:  
Productive vs. Unproductive Expenditures (Sys-GMM)*

Variables	(1) P_Exp	(2) U_Exp
INS	0.133 (0.02)***	-0.188 (0.02)***
Y	0.468 (0.28)*	0.490 (0.26)*
TRD	0.006 (0.01)	0.078 (0.00)***
INF	0.016 (0.00)***	-0.020 (0.00)***
Urban	-0.046 (0.02)***	0.214 (0.01)***
PC	-0.262 (0.02)***	0.045 (0.02)***
Constant	14.463 (2.37)***	3.196 (2.20)
Observations	197	197
No. of Countries	19	19
Wald Chi2 Value	462.5	300.3
AR1 P value	0.0750	0.00184
AR2 P value	0.199	0.643

*Note:* Robust standard errors are reported in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 percent levels, respectively.

Component-wise analysis shows that institutions have a positive and significant impact on various productive components including general public services (GPS), public order & safety (POS), environment protection (ENP), health (HEL) and education (EDU) (Table 3). Health and education are considered two core productive components of government spending. The analysis supports the main argument that institutions divert resources from unproductive to productive spending.

The empirical findings show that institutions have a negative impact on unproductive spending like economic affairs (ECA) and recreation, culture, & religion (RCR). Rent seekers (politicians and government officials) plan the composition of expenditures so as to offer less allocation in certain categories like education and health, and higher spending for categories such as defense and other major capital projects (Mauro, 1998).

The impact of institutions on defense expenditures remains insignificant which deserves further analysis. In many countries, especially developing countries, the share of defense expenditures is very high, as in India and Pakistan. It is also interesting to note that institutions have a negative and significant impact on housing and community amenities (HCA) component of government spending, a productive part of government spending. Further analysis is required to uncover the contribution of institutions by expanding sample size.

Table 3

*Impact of Institutional Quality on Government Size: Component Wise Analysis (Sys-GMM)*

Variables	(1) GPS	(2) DEF	(3) POS	(4) ECA	(5) ENP	(6) HCA	(7) HEL	(8) RCR	(9) EDU	(10) SOP
INS	0.091 (0.02)***	0.003 (0.00)	0.009 (0.00)***	-0.028 (0.02)*	0.018 (0.00)***	-0.012 (0.00)***	0.034 (0.01)***	-0.007 (0.00)***	0.006 (0.00)***	-0.177 (0.02)***
Y	0.288 (0.27)	0.090 (0.04)**	0.378 (0.03)***	0.045 (0.21)	0.007 (0.02)	0.379 (0.06)***	0.512 (0.08)***	0.050 (0.02)***	0.593 (0.07)***	0.021 (0.21)
TRD	0.031 (0.00)***	0.013 (0.00)***	0.007 (0.00)***	0.000 (0.00)	-0.000 (0.00)	0.003 (0.00)***	0.025 (0.00)***	0.002 (0.00)***	0.017 (0.00)***	0.070 (0.00)***
INF	0.011 (0.00)***	0.005 (0.00)***	-0.005 (0.00)***	0.004 (0.00)	-0.001 (0.00)*	0.002 (0.00)**	0.001 (0.00)	0.001 (0.00)***	-0.004 (0.00)***	-0.018 (0.00)***
Urban	-0.028 (0.01)*	-0.005 (0.00)**	-0.002 (0.00)	0.027 (0.01)**	0.001 (0.00)	-0.019 (0.00)***	0.013 (0.00)***	-0.000 (0.00)	-0.007 (0.00)*	0.188 (0.01)***
PC	-0.143 (0.02)***	-0.017 (0.00)***	-0.040 (0.00)***	0.106 (0.01)***	0.001 (0.00)	0.001 (0.00)	-0.058 (0.00)***	-0.006 (0.00)***	-0.048 (0.00)***	-0.006 (0.01)
Constant	5.951 (2.25)***	3.901 (0.36)***	-1.030 (0.25)***	1.742 (1.75)	-0.837 (0.16)***	0.134 (0.49)	-4.516 (0.64)***	0.717 (0.15)***	9.314 (0.55)***	2.121 (1.71)
Observations	197	197	197	197	192	197	197	197	197	197
No. of Countries	19	19	19	19	19	19	19	19	19	19
Wald Chi2 Value	160.1	413.1	1015	82.99	195.4	111.8	707.6	99.31	754.9	956.8
AR1 P value	0.000164	0.0305	0.0766	0.449	0.000230	0.00769	0.000122	0.0845	0.229	0.00136
AR2 P value	0.869	0.690	0.445	0.984	0.945	0.589	0.242	0.879	0.103	0.0648

Note: Robust standard errors are reported in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 percent levels, respectively.

To further study the impact of institutions on government size, this study divides the full sample into; (i) developed (upper-middle income) UMI vs. developing (lower-middle income) LMI countries; (ii) weakly vs. strongly democratic; (iii) stable vs. unstable political systems. The estimation results are presented in Table 4 and Table 5.

Table 4

Variables	Level of Development		Type of Democratic Regime		Stability of Political System	
	LMI	UMI	Weakly	Strongly	Unstable	Stable
INS	0.042 (0.03)	-0.063 (0.01)***	-0.006 (0.03)	-0.046 (0.01)***	-0.049 (0.02)**	-0.058 (0.02)***
DEM_Q	0.085 (0.10)	-0.024 (0.01)**				
Y	4.358 (1.49)***	0.151 (0.62)	2.732 (0.94)***	-0.169 (1.10)	4.390 (1.51)***	-0.025 (0.77)
TRD	0.017 (0.02)	-0.015 (0.01)*	0.016 (0.02)	-0.003 (0.01)	0.037 (0.02)	-0.025 (0.01)***
INF	0.002 (0.00)***	-0.001 (0.00)***	-0.000 (0.00)	0.001 (0.00)	-0.001 (0.00)	0.001 (0.00)***
Urban	-0.069 (0.08)	-0.118 (0.04)***	-0.212 (0.07)***	0.008 (0.04)	-0.162 (0.08)**	-0.039 (0.05)
PC	-0.055 (0.06)	-0.036 (0.03)	-0.068 (0.05)	-0.067 (0.03)**	-0.082 (0.05)	0.030 (0.04)
Constant	-17.853 (8.68)**	19.909 (3.96)***	2.536 (7.34)	15.143 (7.60)**	-11.120 (10.87)	19.041 (7.69)**
Observations	707	742	616	843	635	824
No. of Countries	27	28	43	41	23	32
R-squared	0.714	0.759	0.764	0.747	0.709	0.720
F/Wald Chi2						
Value	75.24	65.60	52.29	55.65	52.27	82.35
Hausman Test	36.35	10.98	52.95	14.18	19.66	12.10
(Prob>chi2)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Note: "General government final consumption expenditure % of GDP" (GE) is dependent variable. Robust standard errors are reported in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 percent levels, respectively.

Estimation results show that institutions and democratic systems complement each other in controlling government size. Institutions have a significant negative impact on government size in UMI countries and strongly democratic countries. The impact is statistically significant in UMI countries, but insignificant in LMI countries. This implies that institutions play an important role in controlling public spending at higher stages of economic development but are not effective at the early stages of economic development. At initial stages of development, the quality of institutions is very poor, so it does not produce the desired results. Furthermore, institutions perform better under a stable political system compared to an unstable system.

The estimation results further show that real GDP per capita has a positive and significant impact on government size at various stages of development i.e. developed vs. developing and under different political regimes, either weak or strong. The association, however, remains weakly significant or insignificant in some cases. The GDP per capita turned out to be the key determinant of government size. It is the key factor behind increase in government size in many situations.

Table 5

*Impact of Political Regime and Institutional Quality on Government Size (Sys-GMM)*

Variables	Level of Development		Type of Democratic Regime		Stability of Political System	
	LMI	UMI	Weakly	Strongly	Unstable	Stable
INS	0.006 (0.04)	0.048 (0.04)	-0.001 (0.07)	-0.053 (0.03)*	-0.016 (0.07)	0.050 (0.04)
DEM_Q	-0.315 (0.17)*	-0.087 (0.13)				
Y	1.562 (2.20)	3.513 (1.85)*	0.237 (2.24)	2.236 (1.13)**	2.593 (1.97)	1.043 (1.58)
TRD	0.073 (0.04)*	-0.002 (0.01)	0.044 (0.04)	0.036 (0.01)**	0.093 (0.04)**	0.012 (0.02)
INF	0.002 (0.00)***	-0.000 (0.00)	0.001 (0.00)***	0.002 (0.00)	0.000 (0.00)	0.002 (0.00)***
Urban	0.015 (0.10)	-0.148 (0.07)**	0.024 (0.12)	-0.060 (0.05)	-0.090 (0.09)	0.009 (0.09)
PC	-0.103 (0.11)	-0.104 (0.07)	-0.058 (0.09)	-0.071 (0.06)	-0.156 (0.11)	0.014 (0.06)
Constant	-0.822 (11.72)	-6.256 (11.27)	9.389 (10.99)	-5.145 (7.20)	-4.610 (9.79)	1.355 (8.50)
Observations	707	742	616	843	635	824
No of Countries	27	28	43	41	23	32
F/Wald Chi2 Value	350.5	12.48	18.21	15.26	11.88	77.81
AR1 P value	0.205	0.648	0.269	0.403	0.339	0.197
AR2 P value	0.771	0.348	0.432	0.628	0.593	0.203

*Note:* “General government final consumption expenditure % of GDP” (GE) is dependent variable. Robust standard errors are reported in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 percent levels, respectively.

To further establish the robustness of the institutions-government size nexus, this study quantifies the impact of individual indicators of institutions on government size. Table 6 shows that most of the institutional indicators have a negative and significant impact on government size. The impact of “government stability” (GS) is negative and significant on government size. The GS indicator shows the ability of the government to remain in office and carry out their planned activities through government unity, legislative power, and public support. This implies that government expenditures are sensitive to government stability.

The results show that the “investment profile” (IP) has a negative and significant impact on government size. A better quality of investment profile reduces investment risks, including contractual vitality and expropriation, repatriation of profits, and payment delays. The results show that improving the quality of investment environment by reducing uncertainties in contractual bargaining and expropriation, repatriation of profits and delayed payments causes a reduction of public spending.

Results show that “control over corruption” (CC) has a negative impact on government expenditure. The main explanation for this is that “corruption control” reduces losses and, consequently, government expenditure is declining. Numerous studies such as Mauro (1998), Murphy, Shleifer, and Vishny (1993) and Tanzi and Davoodi (1998) essentially support this viewpoint. The impact of control on corruption continues to be negative for both developed and developing countries when examined at sub-sample level. Low-quality institutions allow rent seeking activities that drive resources to an unproductive sector.

Results show that “law and order” (LO) has a negative impact on government expenditure. Explanation of the significant results is substantially like the one presented above; observance of the “rule of law” reduces the chances of rent seeking activities hence corruption. This limits losses (leakages) and reduces the level of public spending. The impact of law and order remains negative and significant in developing countries, but insignificant for developed countries.

Table 6

*Impact of Institutions on Government Size: Indicator Wise Analysis*<sup>8</sup>

Indicators	Full Sample		LMI		UMI	
	Fixed Effect	Sys-GMM	Fixed Effect	Sys-GMM	Fixed Effect	Sys-GMM
GS	-0.310 (0.07)***	0.025 (0.10)	-0.331 (0.13)***	0.160 (0.22)	-0.190 (0.07)***	0.224 (0.16)
IP	-0.311 (0.09)***	-0.239 (0.22)	-0.369 (0.16)**	-0.616 (0.53)	-0.193 (0.07)***	0.265 (0.21)
CC	-0.355 (0.15)**	-1.140 (0.39)***	-1.620 (0.27)***	-1.923 (0.68)***	-0.317 (0.16)*	0.316 (0.62)
LO	-0.622 (0.13)***	0.320 (0.39)	-0.738 (0.26)***	0.145 (0.57)	-0.173 (0.13)	0.509 (0.56)
DA	0.116 (0.10)	-0.235 (0.28)	-0.589 (0.17)***	-0.701 (0.58)	-0.279 (0.11)***	0.059 (0.46)
BQ	-0.042 (0.15)	0.226 (0.46)	-0.770 (0.29)***	0.027 (0.86)	-0.520 (0.17)***	0.446 (1.04)

Note: “General government final consumption expenditure % of GDP” (GE) is dependent variable. Robust standard errors are reported in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 percent levels, respectively.

Results show that “democratic accountability” (DA) has a negative impact on government expenditure. Democratic accountability ensures that the government is responsible for its people. Nawaz (2015) argues that a weak democratic framework allows politicians and public officials to misuse power and facilitates in rent seeking activities. While well-defined and enforced institutions put a limit on use of public resources in the unproductive sector, it leads to a smaller government size. It also allows citizens to expel the government that engages in rents seeking activities. Democratic accountability is more effective in LMI countries than UMI countries. The estimated coefficient is higher for LMI compared to UMI. Profeta et al. (2013) found similar results in case of new economies of the EU.

The “bureaucratic quality” (BQ) has a negative impact on government expenditure in aggregate analysis, which implies that an efficient bureaucracy helps to reduce government size. The impact remains the same in both LMI and UMI countries. Nawaz (2015) argues that a well-defined bureaucratic structure acts as a shock absorber to minimise frequent policy changes and thus reducing rent seeking activities.

## 5. CONCLUDING REMARKS AND POLICY IMPLICATIONS

This study empirically analysed the impact of political regime and institutions on government size while controlling for socioeconomic differences for a group of middle

<sup>8</sup>Summary of results for different institutional indicators is reported in Table 4 to avoid duplications. The detailed results are available with authors.



income countries over the period 1986-2014. To estimate the model, this study used fixed effects and system GMM estimation techniques. This study has developed an index of institutional quality using six different indicators, including ‘government stability’, ‘investment profile’, ‘control over corruption’, ‘law and order’, ‘democratic accountability’ and ‘bureaucratic quality’. Political regime has been defined in three different ways including quality of democracy, type of political regime, and stability of political system. The impact of institutions on government size is also examined at different stages of development, i.e. lower-middle income (developing) and upper-middle (developed) countries.

Empirical analysis has shown that institutions have a negative impact on government size. Furthermore, institutions have a positive impact on “productive” spending while they have a negative impact on “unproductive” spending. Health and education are considered two core productive components of government spending. The analysis supports the main argument that institutions divert resources from unproductive to productive spending. Rent seekers plan the composition of expenditures to offer less allocation in certain categories like education and health, and higher spending for categories such as defense and other major capital projects. Empirical evidence also shows that institutional democracy, political regime, and stability of political system are core political determinants of government size. These outcomes lead to the conclusion that stable democratic systems backed by well-defined institutions could help to manage government size.

Empirical analysis has shown that GDP per capita has a positive significant impact on government size. This finding supports the existence of Wagner’s law, which shows that economic activities have had a positive effect on government size. The results also show that the increase in GDP per capita has a relatively greater influence on government expenditure in LMI countries than UMI countries. This has an important implication for policy makers. There is a natural growth of government size linked with the overall economic development of a country. Trade liberalisation has a positive significant impact on government size, implying that the ‘compensation hypothesis’ may hold in middle income countries.

Various key lessons emerged from the empirical analysis:

- First, the institutional framework should be well-defined and enforced to control government size. This helps to minimise the leakages and unproductive use of public resources.
- Second, a stable democratic system is a pre-requisite to managing government size.
- Third, a country’s development frameworks should also be considered while making decisions on the magnitude and composition of public spending.

The existence of Wagner’s Law requires constant increase in public spending. This indicates that increase in government size cannot be stopped. The only way to manage government size is to develop institutions and ensure stable democratic systems.

Future research may look at the natural growth rate of government size at different stages of development, keeping in view the growth trajectory of a country. Living standards, population growth, and urbanisation could be key determinants in establishing

the natural growth rate of government size. The impact of institutions on defense expenditures remains insignificant which deserves further analysis especially for developing countries like Pakistan. Future research may also expand the sample size to obtain more robust results, especially to analyse the role of institutions across productive and unproductive expenditures.

## APPENDIX

**Appendix Table 1**

**List of Countries Included in Full Sample**

1	Albania	20	Gabon	39	Nigeria
2	Algeria	21	Ghana	40	Pakistan
3	Angola	22	Guatemala	41	Panama
4	Argentina	23	Honduras	42	Paraguay
5	Armenia	24	India	43	Peru
6	Bangladesh	25	Indonesia	44	Philippines
7	Bolivia	26	Iran, Islamic Rep.	45	Russian Federation
8	Botswana	27	Iraq	46	Serbia
9	Brazil	28	Jamaica	47	South Africa
10	Bulgaria	29	Jordan	48	Sri Lanka
11	Cameroon	30	Kazakhstan	49	Syrian Arab Republic
12	China	31	Kenya	50	Thailand
13	Colombia	32	Malaysia	51	Tunisia
14	Congo, Rep.	33	Mexico	52	Turkey
15	Costa Rica	34	Moldova	53	Ukraine
16	Dominican Republic	35	Mongolia	54	Venezuela, RB
17	Ecuador	36	Morocco	55	Vietnam
18	Egypt, Arab Rep.	37	Namibia	56	Yemen, Rep.
19	El Salvador	38	Nicaragua		

Source: Author's own.

**Appendix Table 2**

**Descriptive Statistics**

Variables	Full Sample			Upper Middle Income			Lower Middle Income		
	Obs.	Mean	SD	Obs.	Mean	SD	Obs.	Mean	SD
GE	1,564	14.06	5.86	777	13.70	6.77	787	14.41	4.77
Y	1,561	7.98	0.78	765	7.39	0.52	796	8.55	0.51
TRD	1,565	72.04	35.89	781	73.19	33.08	784	70.90	38.48
INF	1,576	70.48	511.06	783	81.83	642.77	793	59.27	333.47
Urban	1,620	53.62	17.45	812	45.48	15.87	808	61.80	14.98
PC	1,531	22.17	6.86	762	21.51	6.81	769	22.83	6.86
DEM_Q	1,570	4.92	3.56	793	4.10	3.54	777	5.76	3.39
DEM_T	1,624	0.57	0.50	812	0.48	0.50	812	0.66	0.47
DEM_S	1,624	0.59	0.49	812	0.54	0.50	812	0.64	0.48
INS	1,558	53.44	10.51	769	51.52	10.21	789	55.31	10.46
GS	1,558	7.60	2.07	769	7.66	2.14	789	7.54	2.01
IP	1,558	6.86	1.99	769	6.68	1.84	789	7.04	2.10
CC	1,558	2.48	0.92	769	2.41	0.83	789	2.56	1.00
LO	1,558	3.03	1.15	769	2.93	1.17	789	3.13	1.12
DA	1,558	3.58	1.29	769	3.35	1.28	789	3.81	1.26
BQ	1,558	1.84	0.76	769	1.69	0.74	789	1.98	0.76

Source: Author's own.

Appendix Table 3

## Correlation Matrix

Variables	Full Sample	Lower Middle Income	Upper Middle Income
GE	1.000	1.000	1.000
Y	0.1641*	0.2829*	0.0439
TRD	0.2572*	0.4061*	0.1046*
INF	0.1393*	0.2293*	-0.0922*
Urban	0.0762*	0.2175*	-0.1828*
PC	0.0178	0.0419	-0.0289
DEM_Q	-0.0867*	-0.1805*	0.0164
DEM_T	-0.0525*	-0.1627*	0.0781*
DEM_S	0.0796*	-0.0602	0.2695*
INS	0.1019*	0.0327	0.1755*
GS	0.0404	-0.0097	0.1206*
IP	0.0116	-0.1339*	0.1754*
CC	0.1826*	0.2535*	0.1018*
LO	0.0877*	0.0603	0.1138*
DA	-0.0036	-0.0313	0.0058
BQ	0.0530*	0.0098	0.0851*

Source: Author's own.

## REFERENCES

- Acemoglu, D., Johnson, S., Robinson, J., & Thaicharoen, Y. (2003). Institutional causes, macroeconomic symptoms: Volatility, crises and growth. *Journal of Monetary Economics*, 50(1), 49–23.
- Acemoglu, D., Johnson, S., & Robinson, J. A. (2005). Institutions as a fundamental cause of long-run growth. *Handbook of Economic Growth*, 1, 385–472.
- Acemoglu, D., & Robinson, J. (2010). The Role of institutions in growth and development. *2010*, 1(2). doi: 10.5202/rei.v1i2.14
- Adsera, A., & Boix, C. (2002). Trade, democracy, and the size of the public sector: The political underpinnings of openness. *International Organisation*, 56(2), 229–262.
- Agell, J., Lindh, T., & Ohlsson, H. (1997). Growth and the public sector: A critical review essay. *European Journal of Political Economy*, 13(1), 33–52.
- Aidt, T. S., & Eterovic, D. S. (2011). Political competition, electoral participation and public finance in 20th century Latin America. *European Journal of Political Economy*, 27(1), 181–200.
- Albalade, D., Bel, G., & Elias, F. (2012). Institutional determinants of military spending. *Journal of Comparative Economics*, 40(2), 279–290. doi: <http://dx.doi.org/10.1016/j.jce.2011.12.006>
- Alesina, A., & Wacziarg, R. (1998). Openness, country size and government. *Journal of Public Economics*, 69(3), 305–321.
- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58(2), 277–297. doi: 10.2307/2297968

- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1), 29–51. doi: [http://dx.doi.org/10.1016/0304-4076\(94\)01642-D](http://dx.doi.org/10.1016/0304-4076(94)01642-D)
- Barro, R. J. (1991). Economic growth in a cross section of countries. *The Quarterly Journal of Economics*, 106(2), 407–443.
- Benarroch, M., & Pandey, M. (2012). The relationship between trade openness and government size: Does disaggregating government expenditure matter? *Journal of Macroeconomics*, 34(1), 239–252. doi: <http://dx.doi.org/10.1016/j.jmacro.2011.11.002>
- Bergh, A., & Henrekson, M. (2011). Government size and growth: A survey and interpretation of the evidence. *Journal of Economic Surveys*, 25(5), 872–897.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143.
- Bond, S., Bowsher, C., & Windmeijer, F. (2001). Criterion-based inference for GMM in autoregressive panel data models. *Economics Letters*, 73(3), 379–388.
- Butkiewicz, J. L., & Yanikkaya, H. (2011). Institutions and the impact of government spending on growth. *Journal of Applied Economics*, 14(2), 319–341.
- Cameron, D. R. (1978). The expansion of the public economy: A comparative analysis. *American Political Science Review*, 72(04), 1243–1261.
- Caselli, F., Esquivel, G., & Lefort, F. (1996). Reopening the convergence debate: A new look at cross-country growth empirics. *Journal of Economic Growth*, 1(3), 363–389. doi: 10.1007/BF00141044
- Cole, I. M., & Chawdry, M. A. (2002). Rent seeking and economic growth: Evidence from a panel of US states. *Cato J.*, 22, 211.
- Dethier, J.-J. (1999). Governance and economic performance: A survey: ZEF Discussion Papers on Development Policy.
- Epifani, P., & Gancia, G. (2009). Openness, government size and the terms of trade. *The Review of Economic Studies*, 76(2), 629–668.
- Eterovic, D. S., & Eterovic, N. A. (2012). Political competition versus electoral participation: Effects on government's size. *Economics of Governance*, 13(4), 333–363. doi: 10.1007/s10101-012-0114-x
- Fischer, P. (2007). *Rent-seeking, institutions and reforms in Africa: Theory and empirical evidence for Tanzania*: Springer.
- Fölster, S., & Henrekson, M. (2001). Growth effects of government expenditure and taxation in rich countries. *European Economic Review*, 45(8), 1501–1520.
- Funk, P., & Gathmann, C. (2011). Does direct democracy reduce the size of government? New evidence from historical data, 1890–2000. *The Economic Journal*, 121(557), 1252–1280.
- Gupta, S., De Mello, L., & Sharan, R. (2001). Corruption and military spending. *European Journal of Political Economy*, 17(4), 749–777.
- Hansson, P., & Henrekson, M. (1994). A new framework for testing the effect of government spending on growth and productivity. *Public Choice*, 81(3), 381–401.
- Hsieh, E., & Lai, K. S. (1994). Government spending and economic growth: The G-7 experience. *Applied Economics*, 26(5), 535–542. doi: 10.1080/00036849400000022

- Iqbal, N., & Daly, V. (2014). Rent seeking opportunities and economic growth in transitional economies. *Economic Modelling*, 37(0), 16–22. doi: <http://dx.doi.org/10.1016/j.econmod.2013.10.025>
- Landau, D. (1983). Government expenditure and economic growth: A cross-country study. *Southern Economic Journal*, 783–792.
- Lamartina, S., & Zaghini, A. (2011). Increasing public expenditure: Wagner's law in OECD countries. *German Economic Review*, 12(2), 149–164.
- Landau, D. (1986). Government and economic growth in the less developed countries: An empirical study for 1960-1980. *Economic Development and Cultural Change*, 35(1), 35–75.
- Lin, S. (1992). The effect of inflation on government expenditure: New evidence. *Atlantic Economic Journal*, 20(4), 86–86.
- Mauro, P. (1998). Corruption and the composition of government expenditure. *Journal of Public Economics*, 69(2), 263–279.
- Milesi-Ferretti, G. M., Perotti, R., & Rostagno, M. (2002). Electoral systems and public spending. *Quarterly Journal of Economics*, 609–657.
- Mulligan, C. B., Gil, R., & Sala-i-Martin, X. (2004). Do democracies have different public policies than nondemocracies? *Journal of Economic Perspectives*, 18(1), 51–74.
- Murphy, K. M., Shleifer, A., & Vishny, R. W. (1993). Why is rent-seeking so costly to growth? *The American Economic Review*, 83(2), 409–414. doi: 10.2307/2117699
- Nawaz, S. (2015). Growth effects of institutions: A disaggregated analysis. *Economic Modelling*, 45, 118–126. doi: <http://dx.doi.org/10.1016/j.econmod.2014.11.017>
- Nawaz, S., Iqbal, N., & Khan, M. A. (2015). The impact of institutional quality on economic growth: Panel evidence. *The Pakistan Development Review*, 53(1), 17–34.
- Nawaz, S., & Khawaja, M. I. (2016). Fiscal policy, institutions and growth: New insights. *The Singapore Economic Review*, 61(1), 1650029. doi: 10.1142/S0217590816500296
- Neck, R., & Schneider, F. (1988). The growth of the public sector in Austria. In J. A. Lybeck & M. Henrekson (Eds.), *Explaining the growth of government*. Amsterdam: North-Holland.
- North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press.
- Peacock, A. T., & Wiseman, J. (1961). Determinants of government expenditure. In A. T. Peacock & J. Wiseman (Eds.), *The growth of public expenditure in the United Kingdom* (pp. 12–34): Princeton University Press.
- Persson, T. (2002). Do Political institutions shape economic policy? *Econometrica*, 70(3), 883–905. doi: 10.1111/1468-0262.00313
- Pham, H. T., Carmignani, F., & Kler, P. (2017). Thrift culture and the size of government, economic modelling, <https://doi.org/10.1016/j.econmod.2017.11.015>.
- Persson, T., & Tabellini, G. E. (2005). *The economic effects of constitutions*. MIT Press.
- Plümper, T., & Martin, C. W. (2003). Democracy, government spending, and economic growth: A political-economic explanation of the Barro-effect. *Public Choice*, 117(1-2), 27–50.
- Pradhan, S. (1996). *Evaluating public spending: A framework for public expenditure reviews* (Vol. 323): World Bank Publications.

- Profeta, P., Puglisi, R., & Scabrosetti, S. (2013). Does democracy affect taxation and government spending? Evidence from developing countries. *Journal of Comparative Economics*, 41(3), 684–718. doi: <http://dx.doi.org/10.1016/j.jce.2012.10.004>
- Rodrik, D. (1998). Why do more open economies have bigger governments? *The Journal of Political Economy*, 106(5), 997–1032.
- Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions rule: The primacy of institutions over geography and integration in economic development. *Journal of Economic Growth*, 9(2), 131–165.
- Ruggie, J. G. (1982). International regimes, transactions, and change: Embedded liberalism in the postwar economic order. *International Organisation*, 36, 379–415.
- Sanz, C. (2017). Direct democracy and government size: Evidence from Spain: Banco de España.
- Shelton, C. A. (2007). The size and composition of government expenditure. *Journal of Public Economics*, 91(11), 2230–2260.
- Shonchoy, A. S. (2016). Political institutions, governance, and consumption expenditure in developing countries: A panel data analysis. *Contemporary Economic Policy*, 34(4), 710–728.
- Tanzi, V., & Davoodi, H. (1998). *Corruption, public investment, and growth*. Springer.
- Tollison, R. D. (2001). The interest-group theory of government: Problems and prospects. *Kyklos*, 54(2-3), 465–472. doi: 10.1111/1467-6435.00164
- Tonizzo, M. (2008). Political institutions size of government and redistribution: An empirical investigation *Working Paper Series No 08(89)* (pp. 1-35). Development Studies Institute. London School of Economics and Political Science.
- WB (2017). *World Development Indicators*. World Bank.
- Woo, J. (2011). Growth, income distribution, and fiscal policy volatility. *Journal of Development Economics*, 96(2), 289–313.