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SIZE OF GOVERNMENT, GOVERNMENT FAILURE, AND ECONOMIC GROWTH[1]

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ABSTRACT

This study analyzes the relationship between the size of government sector and economic performance in connection with government failure. The study connects the size of government and economic growth to inefficiencies on the demand-side and supply-side of collective decision mechanism. It also empirically analyzes the relationship between the size of government and economic growth for the period 1972-2015. Through an error correction estimation that utilized global level data from the World Bank, the study found that the share of per capita government expenditure in per capita Gross Domestic Product (GDP) and per capita GDP growth had a long-term equilibrium relationship and size of government impacted per capita GDP growth negatively in the long-run.

Key Words: Size of government, public expenditures, growth of government, government failure, economic growth.
JEL Classification: H11, H5, O47.

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1. INTRODUCTION

The relationship between the size of government and economic performance has long been at the center of attention. Governments collect taxes and make government spending in order to provide public services. Bearing some sort of discretion, intertemporal decision-making, and re-distribution, the activities of government have crucial efficiency and equality consequences for societies. As governments dominate a significant portion of national economies, economic activities of government impact social welfare. In this context, this study analyzes the relationship between the size of government and economic performance both theoretically and empirically.

The size of government can be measured in number of different ways depending on the need and interest. The share of public expenditures in Gross Domestic Product (GDP) has been one of the common measures of the size of government. The share of government revenues in GPDs has also been used as an indicator for the same purpose. Along with expenditures and revenues, regulations have been considered as another component in measuring the size of government sector within economies. The expenditure, revenue, or regulation-based measures of government size come with their own complexities as the definition of government and classification of fiscal measures vary greatly across economies. Wage bill (employment expenses), government consumption expenditures, government investment expenditures, or para-fiscal measures, for instance, can serve as specific expenditure measures for specific purposes. Classification of expenditures also varies with administrative structure of governments in different societies. Many political systems have central and local governments, and various public enterprises. On the other hand, while some public services are funded through traditional government revenues, others operate like a private business.

Given the mentioned definition and classification complexities in relation to the size of government sector, in this study we adopt the share of per capita government expenditures in per capita GDP as the size measure of the government sector. Then, we use it to explore whether the size of government has been growing and whether there has been a significant relationship between the size of government and economic growth, globally.

In exploring the relationship between the size of government sector and government failure, the workings of collective decision-mechanism must be

incorporated into the analysis. The government sector has the ability to re-allocate resources through various incentive (disincentive) mechanisms and re-distribute income through various coercion mechanisms, e.g., taxation, in an economy. These powers of the government can lead to four types of economic outcomes that we consider as government failure: too much (little) production and too much (little) consumption. We argue that representative democracies are prone to these inefficiencies or failures due to the reasons that we will address below (see also, Demir, 2006). The macro end result of these economy-wide inefficiencies is reduced economic performance (reduced growth, reduced equitable distribution, etc.). These outcomes also reflect that the product mix in the society is not at a point where what the society can produce (all possible production sets) and what the society wants (social preferences that result from the trade-off between the values that the society attains to different goods) meet. We will adopt economic growth (shrink) as one of the measures of governmental failure (success) by arguing that inefficiencies in the government sector and collective decision-mechanism impact economic growth.

As Peltzman (1980:287) noted, there is no certain or a 'limiting' size of government that can serve as a norm for the maximum economic performance. That is, theory and empirical findings are away from suggesting a particular government size that will work for all economies in promoting social welfare. While the evidence on the analyses between government size and economic growth lean toward a negative relationship, use of different measures in different settings results in mixed findings. For instance, in a panel data analysis on ten newly-accepted European Union (EU) countries and four EU candidate ones, Kustepeli (2005) found a negative relationship between government size and economic growth for small countries but medium government size affected growth positively. In another panel data analysis that covered the period of 1970-2008, Afonso and Jalles (2011) found a negative significant relationship between government size and economic performance irrespective of the country groups. In a survey, Bergh and Henrekson (2011) showed that the literature on government size and economic growth contained contradictory findings. They found that recent studies reported a negative relationship between government size and economic growth for richer countries.

Beyond contributing to the empirical findings on the issue, we argue that if there is a negative significant relationship between a measure of government size and economic growth, that finding needs to be considered as a form of government failure and the processes that lead to lower growth with larger

government must be addressed within a government failure framework. Thus, in this study, we attempt to explore the inefficiencies on the demand-side, supply-side, and institutional structure of the collective decision-mechanism as a potential explanation for why larger size of government could be associated with lower economic performance.

The study is laid out as follows: In the next section we will explore the literature on the size and growth of government. Section three is for explaining the anatomy of government failure. Section four is allotted for data and empirical analysis.

2. THEORIES OF GOVERNMENT SIZE

Wagner (1883) was one of the first to tackle the size of government with his book on increasing activities and expenditures of the government. Following his study, many economists have carried out theoretical and empirical studies on government growth. In many empirical studies, Wagner's hypothesis have been mostly proved and Wagner's ideas were named as *"the Wagner Law"* or *"the law of increasing government expenditures"* (Bennett and Johnson, 1980:50-95). According to the Wagner's Law, public activities within the national economy increase mainly due to increased demands for internal and external security, justice, education, health, and cultural and social prosperity. Abromowitz and Eliasberg (1957) have reviewed the trend of public sector employment during 1890-1950 in Great Britain. They argued that wars were the main reasons for the increased public expenditures. They also suggested that industrialization plays an important role in the increase of public expenditures.

Since public goods and services cannot be divided or marketed, they cannot be priced and a benefit mechanism cannot be established. Therefore, they are financed through mandatory taxation. According to Downs (1957), if the benefit approach is not applied in the financing of public services, then the political authority will have the right to demand tax from those who do not directly benefit from public services. As a result, the ability-to-pay principle will lead to even a larger government budget.

Peacock and Wiseman (1961) analyzed public expenditures in United Kingdom during the period of 1890-1955. They suggested that public expenditures continuously increased in a step-like fashion showing differences during peace and social unrest such as, war times. One of the reasons for the growth of government was the increase in public's tolerance to the "displacement" of lower tax rates with new higher tax rates during or after social unrest or disturbance. The higher taxes remain for a while until another social upheaval and the size of

government present a step-like increase pattern. According to Meltzer and Richard (1981), however, the displacement effect is not enough to explain the growth in public expenditures. Public expenditures increase under normal conditions, too, while there is no war. The state increases its defense expenditures especially during cold war. According to Meltzer and Richard, individuals differ in their productivities and income. When taxes are used to finance transfer payments as 'minimum income' to everyone, higher tax rates lead to lower work hours. Thus, the income level of the median voter relative to average income will determine work hours, tax revenues, and size of government. Meltzer and Richard foresee increase in taxes and redistribution with higher income and higher inequality. Similar to Meltzer and Richard (1981), Peltzman (1980) argued that one of the most important reasons for the increase in public expenditures is the inequality in the distribution of income. A bad income distribution of a country causes the increase of public expenditures in order to re-distribute the income.

Another explanation for increasing government size has been the idea of bureaucratic spending. According to Niskanen (1971, 1975), bureaucrats are budget and office maximizers and this is one of the reasons for excessive government spending and growth.

Baumol (1967) argued that economic activities can be divided into two categories as capital-intensive and labor-intensive. Since public services are labor-intensive in general, production costs are higher and efficiency for per unit is lower in the public sector. As income rises, the need for child care, elderly care, education and related services and their costs rise. It is difficult to use capital in providing "care" to individuals. Thus, one of the main reasons for the increase of public expenditures is the fact that government sector has to deal with labor-intensive production activities. Similarly, Orzechowski (1977) argued that one of the reasons for the increase in public expenditures is the low rate of efficiency in the public sector in comparison to the private sector. Low efficiency requires the use of more scarce resources for a given amount of output and causes more expenditures in the public sector services.

Following Aaron Director's idea that public expenditures benefit the middle (income) class, Stigler (1970) illustrated the "director's law" by looking into who benefits from farm policies, minimum wage, housing, social security, tax exemptions, welfare exemptions, and wars. According to the director's law, political power is distributed by the majority rule and according to the demands of median voter, and a coalition of the poor and rich is needed to rule a society. Thus, middle class in societies controls the "state's machinery" to improve its

position and holds the political power to engage in coercive economic activities such as, taxation. From this, it can be deduced that growth of the middle class in societies is associated with growth of public expenditures.

Nordhaus (1975, 1989) carried out studies on political business cycles and argued that public expenditures increased especially during or before elections. As the time of the elections gets closer politicians tend to increase public expenditures.

Thomas Borcherding (1977a, 1977b, 1985), investigated public expenditures in the U.S.A. for the period 1902-1970 in order to show the effects of welfare, population increase, and inflation on public expenditures. According to his analysis, population growth was responsible from 25 %, inflation was 12 %, and increase in GDP was 25 % of the growth of the public sector

The government sector also grows due to 'fiscal illusion'. As Buchanan and Wagner (1977) and Alesina and Perotti (1996) noted, complex tax codes curtail the public's perception of the real tax burden. Thus, due to the lack of resistance to taxation and public's inability to compare public services to their burden for a marginal analysis, tax revenues and public expenditures increase. Tax withholding, for instance, creates an illusion that as if taxes are paid by someone else other than the taxpayer. In similar situations, taxpayer's lack of tax awareness increases the demand for public services. Consequently, the increase in the demand of public goods and services causes public expenditures to grow.

In open economies, where international trade is not restricted by the government, public expenditures tend to increase more when compared to countries with closed economies. In countries that show a deficit in their balance of payments, this gap is attempted to be closed by public expenses as argued by Lindbeck (1975, 1976).

Having summarized some major theories of the government size and growth, the important question that needs to be addressed at this point is "what are the consequences of a growing, if any, government sector?" If the government sector in an economy is plagued by failures, then the growth of government may worsen the situation, i.e., reduce social welfare. On the flip side, however, if the government sector is more efficient in an economy, growth of government may improve welfare. According to Barro (1990), productive government spending can alleviate the negative effects of taxes and lead to economic growth within an endogenous growth framework.

3. THE ANATOMY OF GOVERNMENT FAILURE

Governments are production units. They provide pure and non-pure public goods and services. They even can produce private goods and services such as banking services, when necessary, due to natural monopolies, scale economies, or ensuring competition in certain markets. They have complex maximization objectives that range from efficiency to equality, which also varies with time. They lack ownership and decisions are made based on representation within a principal-agent setting.

A well-defined role and responsibility (size and scope) of government and a good performance (productivity, justice) of the role that it assumes should be critical for social welfare maximization in a society. Governments that have better organizational structure and better incentive mechanisms will be less likely to fail in maximizing the social welfare. From an organizational structure perspective, governments that can operate with the lowest possible transaction costs produce and provide the services that they are supposed to produce and provide in an efficient manner. This requires an efficient organizational structure and a well-functioning collective decision-mechanism. Williamson (1981) argued that organizations consists of transactions and the boundaries of organizations will be determined by which transactions will be included within the responsibilities of the organization. Organizations that can economize better on transaction costs will succeed and replace those that have less efficient transaction cost structures. Large organizations may start losing control at one point and transaction costs may start increasing with size. Size of organizations and governments impacts transaction costs, flow of information, managerial abilities (Demir, 2016), and the level of free riderness [Olson, 1971 (1965)].

Governments are common-resource managers and those governments that have poor common resource management are more likely to fail. Ostrom (1990) showed that common pools of resources can be managed under certain institutional and behavioral structures in order to maximize social welfare. As shown by the Friedman matrix (Friedman and Friedman, 1980) of ownership and choice, the public sector lacks ownership and publicly owned resources are perceived as common pool (somebody else's money) and, hence, are over-spent. Institutions (North, 1990) and fiscal tools (taxation, subsidies, fines, etc.) are instrumental in managing common pools of resources and incentivizing certain (welfare-maximizing) choices as individuals respond to incentives.

Government failures can be analyzed by looking into the structures and behaviors of the actors of the demand-side, supply-side, and institutional structure of the collective decision-mechanism as follows:

3.1. Demand-Side Factors:

Voters are the most important actors of the demand-side of the political markets. Shaping the social preferences, voter behavior can have crucial impacts on economic outcomes. To avoid sharing the burden of public expenditures, voters may not reveal demand for public services (Turan, 1986; Denzau and Munger, 1986; Stigler, 1972) and it becomes difficult to obtain an estimate of the demand for public services. Thus, public services may be over (under) produced. While Musgrave and Musgrave (1989) suggested 'pseudo demand', Lindahl (1958) suggested 'tax price', and Coleman (1996) suggested an 'exchange value" approach for public services regarding the difficulty in obtaining a demand for public services. Voters also may not reveal their true preferences depending on the probability of win of their preferred party. Even if they reveal their true preferences, their level of knowledge about economic policies and their consequences; their level of human capital to process information; short-sightedness (myopia); and information costs (bounded rationality and rational ignorance) may prevent them making welfare-maximizing decisions.

Interest groups are the other influential actors on the demand side of political markets. Their objective is to maximize the interests of the group by lobbying politicians to make common-pool public resources more specific and more appropriable (Crain, 1977; Klein et al., 1978; Weingast et al., 1981; Faith et al., 1982). While public goods and services are principally non-divisible, making them more appropriable and specific to election districts, social classes, and industrial clusters can benefit interest groups. As a result, while the burden of public services is dispersed, the benefits concentrate in certain geographic areas, social classes, or industries within the economy (Lowi, 1964). As Stigler (1971) argued, interest groups seek out cash transfers, support for complementary goods (cost-increases for substitute goods), and price fixing. Thus, policy-making becomes a means for the creation, extraction, and distribution of rent, a payment above market value for a resource, which is brokered by politicians, to regions, social classes, and industries, (McChesney, 1987). According to Tullock (1967, 1980), rent seeking not only results in a budgetary transfer but also causes welfare loss because of individuals' and interest groups' investment in rent-seeking rather than productive activities.

3.2. Institutional Factors

Institutions, as humanly devised informal constraints and formal rules, coordinate choices and structure markets, and they define responsibilities and rewards (Rawls, 1971; North, 1990). They increase information, reduce

transaction costs, and encourage or discourage certain behaviors. Better institutions lead to better economic outcomes (North, 1990). Politicians are the designers of bad or good institutions (Horn, 1995). The non-divisible nature of many public services results in uniform distribution of costs with a differential benefit structure. This requires certain compensation mechanism through various institutions, such as, entitlements, that have fiscal aspects. Institutions should protect competition in economic and political markets. Rules regarding money supply and independency of central banks (Cukierman, 1992); property rights and contracts, judicial independence (Landes and Posner, 1975; McChesney, 1987); structure of majority, veto power, election timing and frequency, parliamentary commissions; tax structure, accountability, transparency, and budgeting will have strong implications for social welfare maximization. Alesina and Perotti (1996), for instance, showed that rules regarding balanced budget could prevent budget deficits that result from short-sighted and opportunistic politician behavior. Therefore, Buchanan suggested controlling many economic variables, such as money supply with stronger constitutional rules.

3.3. Supply-Side Factors

Politicians, especially the incumbent ones, are the most influential actors on the supply side of political markets. Politicians are vote-maximizers (Downs, 1957). According to Barro (1973), politicians are also political income, which consists of excess factor payments in return for providing public services, maximizers. Any benefit that politicians collect above the tax price of public services contributes politicians' political income. Politicians can maximize political benefits through electoral cycles and opportunistic election timing (Kalecki, 1943; Nordhaus, 1975; Alesina et al., 1997), cheating and shirking (Lott, 1989, 1990). Parker (1989) suggested that congressmen in the United States behaved to maximize monetary benefits, rent, and discretion and power to reform and change organizational structure.

Bureaucrats are also on the supply-side of political markets. They both serve the public and politicians. While politicians make decisions, bureaucrats develop expertise, collect and disseminate information, execute decisions, enforce rules, and implement policies. According to Niskanen (1971, 1975), bureaucrats are budget or office maximizers. However, as Weingast and Moran (1983) explained, bureaucratic behavior is subject to monitoring and supervision of politicians through promotion and appointment. As government gets larger, however, returns to politician's control and monitoring

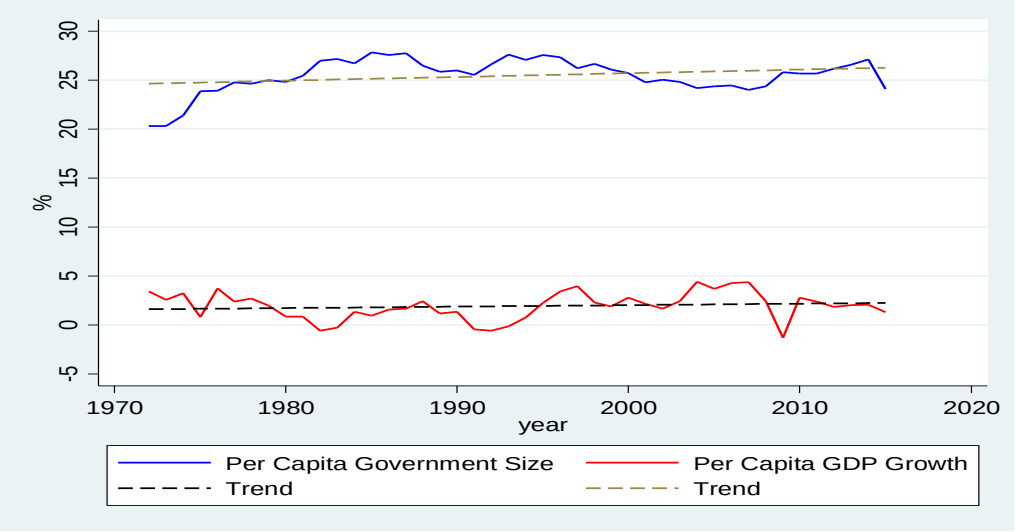
over bureaucrats diminish and public offices can become less efficient. Political parties also control politician and bureaucrat behavior through their brand names (Akerlof, 1970). Political parties invest in brand name and try to reduce quality uncertainties by preventing politicians and bureaucrats from damaging their investment for their short-run intrinsic objectives.

As explained above, the choices and behaviors of the actors on the demand and supply-side of the collective decision mechanism may not be aligned with society's social welfare maximization objective. Moreover, due to endogeneities (politicians make the rules that they are subject to), institutions may not provide welfare-maximizing incentives as there can be good and bad institutions. As a result, economic performance may fall with a larger share of the government sector within the economy.

4. DATA AND FINDINGS

In order to analyze the relationship between government size and economic growth empirically, we used the World Bank (WB)'s global level World Development Indicators (WDI) data for the period 1972-2015. The variable global annual average per capita size of government was constructed by dividing government expenditures with population and deflating the series with the GDP deflator. It should be noted here that, the series are global averages for each year from the available WB data. There were several missing values in the panel for many countries and many years. We assume that the missing data did not have a systematic pattern and annual global averages were a good representation of the global distribution of government size and income. In 44 years, while the average per capita GDP growth was 1.9%, average size of per capita government expenditures in per capita GDP was 25.48% (see Appendix Table-I for summary statistics). As depicted in Figure 1, the percent share of per capita constant government expenditures in per capita constant GDP between 1972 and 2015 exhibits a slight upward but insignificant trend (t-stat =1.85). Also, the trend of the per capita GDP (constant) growth is insignificant (t-statistic = .91). Another noticeable characteristics of the series is that they show a cyclical pattern.

Figure 1. Size of Government and GDP Growth (Constant, Per Capita, 1972-2015)



We determined that the number of lags needed for their autocorrelation to disappear was 1 (see, Appendix, Table II). Unit root tests indicated that both series did not have unit root without a trend and with one lag (see, Appendix Table III-a, III-b). The Johansen (1988, 1995) co-integration test indicated that both series had a co-integration relationship (Appendix, Table IV). Having co-integrated series, following Kilian and Lütkephol (forthcoming), we proceeded with an error correction (EC) estimation. The EC estimation results (Appendix, Table V) show that per capita government size and per capita GDP growth have long term equilibrium relationship. The long term relationship indicates that the size of government has a negative significant impact on economic growth ($E1 = Growth - .553\ Government\ Size + 16.01$). We also found that the EC estimation we conducted was stable (Appendix, Figure I).

In discussing our findings, our objective was to investigate the relationship between the size of government and GDP growth on a global scale. As many preceding studies have done, considering country classifications based on income, level of democracy, region, trade unions, size of government, or level of debt in panel data settings could provide meaningful insights in understanding the relationship between the size of government and economic performance. Also, we have used the share of government expenses in GDP as a measure of the size of

government and GDP growth as a measure of economic performance in an economy. In fact, not all government expenditures are detrimental to economic performance. Therefore, detailed measures of government expenditures (wage bill, investment spending, transfers, social security, etc.), government revenues, regulations, or even a government size index could also be used for the size of government for more better linkages between the size of government and economic performance.

5. CONCLUSION

In this study we have analyzed the relationship between the size of government and economic performance. We used per capita government spending as the size measure of government and per capita GDP growth as the economic performance measure for the economy. We argued that a potential detrimental effect of government size on economic performance should be analyzed within a government failure framework that inefficiencies on the demand and supply-side of the collective decision mechanism and institutional slackness should be responsible from poor economic performance. Through an error correction (EC) estimation, we found that per capita government spending and per capita GDP growth had long term equilibrium relationship and size of government negatively impacted economic growth on a global scale between 1972 and 2015. Our finding can be considered as a challenge to Keynesian policies that advocate spending to promote economic performance. Establishing empirical links between the inefficiencies that we explained regarding collective decision-mechanism and economic performance requires further studies.

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Appendix

Table-I. Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Per Capita GDP Growth	44	1.94	1.40	-1.31	4.41
Per Capita Government Expenses as % of Per Capita GDP	44	25.48	1.76	20.32	27.88

Table-II. Lag Selection

Sample: 1976-2015 N=40

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-128.803				2.37357	6.54013	6.57066	6.62457
1	-103.716	50.173*	4	0	.827474*	5.48581*	5.57741*	5.73914*
2	-101.073	5.2871	4	0.259	0.887373	5.55364	5.7063	5.97586
3	-99.3124	3.5207	4	0.475	0.997148	5.66562	5.87934	6.25673
4	-95.012	8.6007	4	0.072	0.990557	5.6506	5.92539	6.4106

Table-III. Unit-root Tests

a. Government Size (No trend, lag 1)

	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-3.644	-3.634	-2.952	-2.610

MacKinnon approximate p-value for Z(t) = 0.0050

b. GDP Growth (no trend lag 1)

	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-2.955	-3.634	-2.952	-2.610

MacKinnon approximate p-value for Z(t) = 0.0393

Table-IV. Johansen Co-integration Test

Sample = 1973-2015 N = 43 Lags = 1 Trend= None

Maximum rank	parms	LL	eigenvalue	Trace statistic	5% critical value
0	0	-127.78116	.	14.1138	12.53
1	3	-120.82988	0.27625	0.2113*	3.84
2	4	-120.72424	0.0049		

Table V. Error Correction Estimation Results

Sample = 1973-2015

D_growth		Coefficient
	L._ce1	-.36*
		(-2.37)
	_cons	-.05
		(-0.28)
D_Government size		
	L._ce1	-.24*
		(-2.48)
	_cons	.08
		(-0.66)

Z-statistics are in parenthesis. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Cointegration Equation

_ce1 parms= 1 Chi_Sq = 12.88851 P>chi2 0.0003

	beta	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
_ce1	growth	1	.	.	.	.	
	Government size	.553	.1541577	3.59	0.00	.2512914	.8555784
	_cons	-16.09268	.	.	.	.	.

Figure I. Stability of EC Estimation

Eigenvalue Stability Condition

Eigenvalue	Modulus
1	1
.5020809	.502081