Investigating Validation of Armey Curve Hypothesis for G7 Countries using ARDL Model

G7 Ülkeleri için Armey Eğrisi Hipotezinin ARDL Modeli ile İncelenmesi

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ABSTRACT: The effect of the government size on economic growth still keeps its unclear status despite the works in this field. According to the Armey Hypothesis (1995), which one of the studies developed for the volume of government size in economy, the increase in the public volume in economy will increase economic growth up to a certain level, and when the maximum level is reached, the increase in public volume will cause decreases in economic growth. In this study, the issues of whether the Armey Hypothesis is valid or not for G7 countries has been investigated, and the optimum public volume has been determined for G7 countries. In testing Armey Curve hypothesis, we use ARDL cointegration procedure. The results of empirical findings argue that the Armey Hypothesis is valid for US, and Canada, and France when it is invalid for other G7 countries.

Keywords: Armey Curve, Government Size, Economic Growth, Cointegration.

JEL Classification: C22, E62, O40.

Öz: *Kamu büyüklüğünün ekonomik büyüme üzerindeki etkisi, literatür genelindeki çalışmalara rağmen belirsizliğini korumaktadır. Armey Hipotezi'ne (1995) göre, kamu hacmindeki artış, belli bir seviyeye kadar ekonomik büyümeyi pozitif olarak etkilerken belli bir maksimum düzeyden sonra kamu hacmindeki artış ekonomik büyümede düşüşe neden olmaktadır. Bu çalışmada, Armey Hipotezinin G7 ülkeleri için geçerli olup olmadığı konusu araştırılmış ve G7 ülkeleri için optimum kamu hacmi belirlenmiştir. Armey Curve hipotezini test edilmesinde, ARDL eşbütünleşme modeli kullanılmıştır. Ampirik bulgulara göre, Armey Hipotezinin ABD, Kanada ve Fransa için geçerli iken diğer G7 ülkelerinde geçerli olmadığı tespit edilmiştir.*

Anahtar Kelimeler: Armey Eğrisi, Kamu Büyüklüğü, Ekonomik Büyüme, Eşbütünleşme.

1. Introduction

Economic growth is one of the most important macroeconomic variables that reflect the economic performance. The effect of the share of the state in economy on economic growth still keeps its unclear status despite the works in this field. The classical model is often termed 'laissez faire' because there is little need for the government to intervene in managing the economy. According to crowding out effect, too much government spending takes away valuable economic resources needed by

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individuals and private sector. On the other hand, Keynesian model relies on government spending and government intervention to jumpstart a nation's economic growth especially during economic recession.

In today's economy, neither pure classical nor pure Keynesian models are applied. While there are differences from country to country, there are different implementations of the government's volume in the economy. There are two approaches on how the share of government expenditure in economy will affect the economic growth. According to the first approach, the state needs to be interfering in the economy as much as possible. In this approach, in case the physical and human capital in a country are used under the control of the state for the purpose of ensuring the economic balance and economic growth, the economic growth and welfare levels will reach maximum level. The second approach depends on the idea that the weight of the state on economy should be determined according to certain rules. In this context, basic expenditures performed by the state in a compulsory manner affect the growth in a positive manner, while the expenditures made outside the basic functions affect the growth in a negative manner. As the volume of the public sector increases in the economy, the investments of the private sector will decrease because of the exclusion effect, and this situation will cause that economic growth is affected negatively by decreasing productivity.

According to Armey Hypothesis (1995), economic growth will not occur in an economy where there is no state effect or where there is anarchy because there are no motivations for savings and investments. As the intervention of the state on the economy increases, the improvement on individual rights and social services will create suitable environment for investments, and there will also be increases in economic growth. When the effect of the state on economy grows bigger than the optimum level, on the other hand, the state will perform the proceedings with higher costs and lower quality, which were once performed with less expenditures and higher quality by private sector, and this situation will have negative effects on economic growth. For this reason, there is an inverted-U shaped relation between the public volume and economic growth. The Armey Curve, which shows that the relation between the public volume and economic growth is in an inverted-U shape. The majority of the theoretical studies that investigate the long-term relation between the public volume and economic growth in the economy support the idea that this relation between these two variables is in the shape of an inverted "U". However, there is no absolute consensus on which level the public volume, which ensured maximum economic growth, should be.

According to the Armey Hypothesis (1995), which was one of the studies conducted to determine the public volume needed to ensure economic growth, the increase in the public volume in economy will increase economic growth up to a certain level, and when the maximum level is reached, the increase in public volume will cause decreases in economic growth. The Armey Curve shows that the positive correlation between the increase in the public volume and economic growth stemming from the increasing productivity will continue up to a certain level, and then it will become negative when the law of diminishing returns becomes active.

In the study, Armey Curve Hypothesis validity in G7 countries has been investigated by using Vedder and Gallaway (1998) econometric method. It has been used GLS unit

root test and ARDL cointegration procedure to test Armey Curve hypothesis. Relevant theoretical and empirical literature have been reviewed. The findings obtained from econometric analyses have been summarized and results and recommendations have been given. This study contributes to the literature in the following ways: First, there is a dearth of studies dealing with investigating validity of Armey Curve hypothesis methods in the literature, so this study is a much-needed contribution. Second, effects of the changes in public volume on economic growth have increased after the World War II. Thus, analyzing G7 countries public volume is crucial. Because of fact that, most of these countries were active at World War II. Finally, using ARDL bound test proposed by Pesaran et al. (2001) we attained robust results.

In the next section, these studies are summarized. The dataset and econometric method are given in the third section. The findings obtained from econometric analyses will be summarized in the fourth section. In the last section, results and recommendations are given.

2. Literature Review

Although there have been conducted many theoretical and empirical studies on the effects of the public volume on economic growth and on the level of the optimum public volume especially as of 1950s, there are no definite judgments in the economy literature yet. In the economics literature, the relationships between the government size and economic growth were divided into three types. These are negative, positive and non-linear.

According to economists who believe that the increase in public volume negatively affects economic growth, the increase in public expenditures is usually driven by ineffective areas. This causes leads to increased taxes and inefficient use of resources. In addition, the increase in public expenditures leads to an increase in interest rates, which leads to a decrease in private sector investments. The studies claiming that there is a negative relationship between government size and economic growth can be summarized as follows: Roy (2009), has developed multi-equation model for United States by using time series data over the period 1950 to 1998. The results indicate that government size has a significant and negative effect on economic growth. Bergh and Karlsson (2010), have examined government size by using Bayesian averaging over classical estimates. The authors used panel data for two sample periods from 1970-1995 and 1970-2005 for rich countries. According to the results, government size robustly correlates negatively with growth. Connolly and Li (2016) used panel data from 1995 to 2011 for 34 OECD countries and examined the effects of government consumption spending, public social spending, and public investment on economic growth. According to their findings, an increase in public social spending has a significant negative effect on subsequent economic growth. Government consumption spending and public investment have no significant effect on subsequent economic growth. Afonso and Jalles (2016) have studied the empirical link between government size, institutions and economic activity using a panel of 140 countries. The results obtained the investigation have shown mostly a negative effect of government size on output, while institutional quality has generally a positive impact.

There are also some other viewpoints claiming that increase in public volume has no negative impact on economic growth. In this context, a more powerful and more

efficient public interventions will eliminate the failures in the market and trigger the economic growth. The increases in the public expenditure will have positive effects on investments and employment through the multiplier effect and the increases in the social expenditures will lead to an increase in the welfare of the country. The studies suggesting that there is a positive relationship between government size and economic growth can be summarized as follows: Karras (1997) determined another study to estimate the optimal public volume, and examined the effects of public expenditures on economic growth. He concluded that public goods were significantly productive and influential on the growth in the economy. Wu, Tang and Lin (2010), have examined government expenditure by utilizing panel data set which includes 182 countries that cover the period from 1950 to 2004. According to empirical results, government spending is helpful to economic growth. Also results indicate that, when the countries are disaggregated by income levels and the degree of corruption, the bi-directional causality between government activities and economic growth for the different subsamples of countries, with the exception of the low-income countries. Akpan and Abang (2013), have investigated economic growth of Nigeria utilizing annual time series data from 1970 to 2010. According to results obtained from study, at the aggregate level, government spending in Nigeria is growth promoting. At the disaggregated level, only recurrent spending is significantly and positively related to growth, while the impact of capital spending is negative and insignificant. Choi and Son (2016), have attempt to investigate how expansionary government spending shocks in Korea have influenced GDP growth. The authors claimed that an increase in discretionary government spending has affected Korea's economic growth in a favorable way over the sample period.

The third approach, which explains the relationship between government volume and economic growth, combines negative and positive effects. The non-linear relationships between public volume and economic growth are called Armey Curve in the economics literature. According to economists arguing this view, there will be no economic growth in the absence of public intervention. The increase in the volume of public sector will increase the economic growth to a certain point, and beyond that, the economic growth will decrease.

The majority of the economists, who have made investigations on the size of the optimum public sector, argue the idea that economic growth is affected negatively in economies where the state takes the public volume beyond the production of public goods, which is also beyond the optimum level because of the decrease in the activities. One of the approaches claiming that the public volume, which occurs beyond the optimum levels, will affect economic growth negatively was argued by Gwartney, Lawson, Holcombe (1998). According to this study, the increases in the public volume that pass beyond the production of public goods will distract the investments of the private sector because of their exclusion effects and due to the increases in the taxes; and they cause unfair practices in the distribution of the income; and eventually, the country will not keep pace with innovations, and many inventions will be hindered. The studies that investigate the non-linear relation between the size of the public sector in economy and economic growth can be summarized as follows: Barro (1988) has determined that the growth in public volume affected economic growth up to a certain level, and then, it had decreasing effects on economic growth. Vedder and Gallaway (1998), has claimed that the increases in the government volume in developing economies positively affect economic growth; however, the

situation is in the inverted direction in developed economies. Gwartney et.al. (1998) conducted a study on 23 OECD countries and investigated why the increase in the governmental volume affected economic growth in a negative way after a certain level. The authors claimed that the public volume should be decreased in order to reach higher growth levels in the countries that were included in the model.

Pevcin (2004) determined a study on 12 European countries, and tested the Armey Curve for these countries. According to the findings of the study, it was determined that the optimum public volume was exceeded in the countries which were included in the model. Chen and Lee (2005) suggested that a study on Taiwan and tested the validity of the Armey Curve Hypothesis. Their study was conducted with the quarterly data of 1979-2003 period, and the Threshold Regression Method was used in this study. According to results, it was observed that the Armey Curve was true for Taiwan in different governmental measurements and in various threshold variables, and it was claimed that in case the public expenditures were decreased, there would be positive developments in economic growth. Chobanov and Mladenova (2009) asserted a study on OECD countries and tested the Armey Hypothesis. According to their findings, the authors claimed that the public volume should not be higher than 25% in order to ensure maximum economic growth in OECD countries that were included in the model. Abounoori and Nademi (2010) tested the Armey (1995) and Vedder and Gallaway (1998) theories for Iran for 1960-2006 period. Three variables were used in the study, which were the Total Public Expenditures/GNP, which represented the public volume; the Public Consumption Expenditures/GNP; and the Public Investment Expenditures/GNP. According to the findings of their study, in order to ensure maximum economic growth, optimum public volume rates should be 34.7%, 23.6% and 8%, respectively. In addition, they concluded that the public volume should be decreased in order to maximize economic growth.

Altunç and Aydın (2012) suggested that another study with the data obtained from Turkey for 1975-2010 period, and tested whether the Engle Granger Cointegration Test and Armey Curve were valid for total public expenditures and public expense components. According to the findings obtained in the study, the Armey Curve was valid for total expenditures, current expenditures and transfer expenditures; while it was not valid for investment expenditures. It was determined that the optimum public volume levels were 15.8% for total expenditures, 6.8% for current expenditures, and 10.83% for transfer expenditures. Altunc and Aydın (2013) examined a study with the data of 1995-2011 period for Turkey, Romania and Bulgaria. According to the findings of the study in which whether the issue of inverted-U shaped relation between public expenditures and economic growth is valid or not investigated with the ARDL limit test approach, it was observed that the public expenditures were beyond the optimum level in the countries which were included in the model. The optimum public expenditures level for Turkey, Romania and Bulgaria were 25.21, 20.44, and 22.45, respectively. Turan (2014) conducted a study on Turkey, and determined that the Armey Curve Hypothesis is valid for Turkey, and in order to ensure maximum economic growth, the public volume should be decreased. Ferris and Voia (2015) investigated the relationship between government size and private economic activity in Canada over the long 1870-2011 period. According to the results the inverted U shape to be consistent with the results for Canada, but only for the 1870-1936 period. In the post-World War II period when federal size is above peak size, the data suggest

that increases have imposed constant rather than increasing cost. Aydin, Akinci and Yilmaz (2016) investigated the role of government expenditures threshold value for Turkish economy in period for 1998-2015. According to the results under the first regime that is below the threshold level, low government spending has significantly negative impact on economic growth. On the other hand, under the second regime that is above the threshold level, government spending has significantly positive effect on economic growth.

In addition to these studies claiming that Armey Curve is valid, De Witte and Moesen (2010) conducted another study on 23 OECD countries, and examined the optimum public volume level with the non-parametric DEA (Data Envelopment Analysis) Method. According to their findings, the authors claimed that the Armey Hypothesis was not valid.

When the studies conducted on the inverted-U shaped relation between the public volume and economic growth were examined, it was observed that there was a consensus on the hypothesis claiming that the increase in public volume in developed countries affected positively economic growth. In developing and especially in developed economies, unlike this situation, it is commonly claimed that the increase in public volume has negative effects on economic growth. In further sections of the study, the dataset and econometric method are given for the purpose of estimating the optimum public volume for G7 countries.

3. Data and Methodology

To test Armey Curve Hypothesis validity in G7 countries we use government consumption expenditure[1] (%GDP), Real GDP (2005$) growth and unemployment rate. All data come from World Bank Development Indicators. Because of period limitation time periods for countries are different from each other. Thus, time periods for countries US, UK, Japan, Italy, France, Canada, Germany are 1981-2013, 1983-2014, 1981-2013, 1981-2014, 1981-2014, 1981-2014 and 1983-2014, respectively. We use Vedder and Gallaway (1998) econometric model for testing validation of Armey Curve for G7 country. Econometric model is shown below:

$$G = a_0 + PE + PE^2 + U + Trend$$

where G, PE, PE^2, U are economic growth, government consumption expenditure (% GDP), square of government consumption expenditure and unemployment rate, respectively. In addition, α_0 is constant term and trend is time trend. Vedder and Gallaway (1998) explained using unemployment rate as economic growth would be

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[1] We use government consumption expenditure proxy as public expenditure. Public expenditure includes consumption expenditures and investment expenditures. We thought that government investment expenditure shows its own effect on economic growth over time. On the other hand, government consumption expenditure involves purchasing good and services including compensation of employees. Lin (1994) suggested that effects of government consumption expenditure would be less than government investment expenditure on economic growth. Moreover, government investment expenditure promotes private investment expenditure. Hence, we used government consumption expenditure in this paper.

below the potential growth rate (business cycle). Moreover, Okun law[2] suggested that relationship between unemployment and economic growth is negative. According to Armey Curve Hypothesis, we expect PE has a positive sign on economic growth because of the fact that it has a positive effect on economic growth, considering Keynesian perspective. On the other hand, we expect square of government consumption expenditure and unemployment (Okun Law) to have a negative sign.

In testing Armey Curve hypothesis, we use ARDL cointegration procedure developed by Pesaran, Shin and Smith (2001). Before using ARDL test, determining stationarity level of data is necessary. Since some of data have different integration levels (I(0), I(1)), ARDL cointegration could be used. In this paper, we use GLS unit root test developed by Elliot, Rothenberg, and Stock (1996) to determine variable integration level. ARDL test could not be used when some of the data are I(2) (Pesaran et al., 2001). The model of ARDL bound test can be written as equation (1) adapted for the purposes of this paper:

$$\Delta G = a_0 + \beta_1 G_{t-1} + \beta_2 PE_{t-1} + \beta_3 PE_{t-1}^2 + \beta_4 U_{t-1} + \lambda_1 \sum_{i=1}^{m} \Delta G_{t-i} + \lambda_2 \sum_{i=0}^{k} \Delta PE_{t-i} + \lambda_3 \sum_{i=0}^{l} \Delta PE_{t-i}^2 + \lambda_1 \sum_{i=0}^{n} \Delta U_{t-i} + trend + \varepsilon_t \qquad (1)$$

where Δ and ε is are first difference operator and error term respectively, while t represents time. m, k, l and n show optimal lag length selected by Information Criterias. When using ARDL cointegration procedure to decide whether variables are cointegrated or not, F test is applied to test hypothesis of $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$. Some diagnostic tests (LM test, Heteroscedasticity test and Normality test) are also applied when testing the validity of ARDL bound test.

4. Empirical Results
Determining variable integration level is to be necessary for applying ARDL cointegration procedure, we employed GLS-ERS unit root test to decide variables integration level. The result of GLS-ERS unit root test is shown Table 1.

Table 1: Results of GLS-ERS Unit Root Test

	GLS (ERS)							
	g	pe	pe2	u	Δg	Δpe	$\Delta pe2$	Δu
US	**-4.159***	-2.900	-2.796	**-3.450****	-	**-3.755****	**-3.930***	**-3.929***
UK	**-3.228****	-2.281	-2.296	**-2.96*****	-5.359*	**-3.522****	**-3.515****	**-2.920*****
Japan	**-4.846***	-1.585	-1.645	-2.054	-	**-4.830***	**-5.167***	**-4.783***
İtaly	**-4.359***	-1.879	-1.871	**-2.920*****	-	**-4.161***	**-4.163***	-6.648
France	**-4.024***	-1.591	-1.614	-1.76722	-	**-4.133***	**-4.168***	**-4.499***
Canada	**-4.364***	-2.602	-2.718	**-4.0204***	-	**-3.307****	**-3.361****	-
Germany	**-5.115***	-1.933	-1.912	-2.32023	-	**-4.546***	**-4.565***	**-4.221***
Critical Value	1%	5%	10%		1%		5%	10%
	-3.770	-3.190	-2.890		-3.770		-3.190	-2.890

*Note: *,*, *** show 1%, 5% and 10% significance levels, respectively.*

According to unit root test, economic growth variable of US, Japan, Italy, France, Canada and Germany are stationary in levels at 1% significance level but UK's

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[2] Okun's law suggest that a 1% increase in unemployment rate is related with 2,5% negative growth in real GDP.

economic growth is stationary in level at 5% significance level. Otherwise, economic growth variable of UK is stationary in first difference at 1% significance level. Government consumption expenditure and the square of government consumption expenditure of all countries are stationary in first differences at 1% and 5% significance levels. Conversely, unemployment variables of US and Canada are stationary in levels and unemployment of other countries are stationary in first differences at 1%, 5% and 10% significance levels. Finally, we indicated that none of the variable is stationary in second differences (I(2)). Pesaran et al. (2001) suggested if variables integration levels are mixed, ARDL cointegration procedure gives adequate results. The results of ARDL models and bound tests could be seen on Table 2.

Table 2: Results of ARDL Model and Bound Test

Countries				ARDL Model		Bound Test	
US				ARDL(1,0,0,1)		38.14533	
UK				ARDL(2,2,0,1)		5.165792	
Japan				ARDL(2,3,1,2)		6.934065	
İtaly				ARDL(1,0,1,1)		10.97941	
France				ARDL(1,1,1,0)		40.41874	
Canada				ARDL(1,3,3,3)		5.419070	
Germany				ARDL(1,3,2,1)		25.26676	
Critical Values (I0)	1%	5%	10%	Critical Values (I1)	1%	5%	10%
	5.17	4.01	3.47		6.36	5.07	4.45

Note: The bounds test values are based on Pesaran et al. (2001), Table CI (v) Case V: Unrestricted intercept and unrestricted trend denotes significance at the 1%, 5% and 10% levels.

The results of ARDL bound test could be seen on Table 2. After selecting of optimal ARDL model using Schwart Information Criteria, we applied F test to determine whether variables are cointegrated or not. As seen Table 2, F test statistics are greater than upper critical level taken by Pesaran et al. (2001) in levels at 1%, 5% and 10%. These results indicated that H_0 hypothesis of bound test is rejected. Autocorrelation and heteroscedasticity problems were not found in the models predicted for countries. Variables of all countries are cointegrated on long run. The coefficients of long run obtained ARDL model could be seen on Table 3.

Table 3: Long-Run Coefficients

Variables	Constant	PE	PE^2	U	Trend	Validation Situation of Armey Curve
US	-8.289 (12.084)	2.785 (1.378)	-0.111 (0.041)	0.146 (0.125)	-0.269 (0.057)	Valid
UK	82.147 (41.715)	-7.118 (3.858)	0.163 (0.087)	-0.259 (0.225)	-0.065 (0.0285)	Not Valid
Japan	39.059 (16.440)	-4.057 (1.972)	0.117 (0.057)	0.202 (0.253)	-0.159 (0.026)	Not Valid
Italy	438.456 (149.447)	-42.841 (14.901)	1.047 (0.368)	0.007 (0.107)	-0.048 (0.050)	Not Valid
France	-132.458 (78.886)	11.540 (6.591)	-0.244 (0.138)	-0.038 (0.132)	-0.060 (0.013)	Valid
Canada	-48.465 (45.436)	4.921 (4.158)	-0.129 (0.097)	0.880 (0.663)	-0.084 (0.043)	Valid
Germany	73.917 (71.864)	-6.649 (7.511)	0.161 (0.196)	-0.328 (0.063)	-0.106 (0.016)	Not Valid

Note: Standard errors are in the parentheses.

According to long run coefficients of government consumption expenditures and square of government consumption expenditures of US, France and Canada are statically significant in levels at 1%, 5% and 10%. These results indicated that Armey curve hypothesis (inverted-U shape) is valid for US, France and Canada period for 1980-2014. On the other hand, both government size variable PE and PE^2 of UK, Japan, Italy and Germany are inverted signed which is not expected, meaning that government consumption expenditure effects negatively economic growth in UK, Japan, Italy and Germany. In UK, Japan, Italy and Germany, government consumption expenditure which has negative sign means that it decreases economic growth. This means that government consumption expenditure has reduced economic growth until a threshold point in the UK, Japan, Italy and Germany. After the threshold point, economic growth has been increased by government consumption expenditure. In other words, the U-Curve hypothesis is valid in these countries. It could be said that the reason why the Army Curve is not valid in these countries is that the government consumption expenditures had caused the crowding-out effect on the private sector. In particular, the share of government consumption expenditures/GDP in the UK, Italy and Germany shows a declining trend over time. However, the situation is somewhat different in Japan. The share of the government consumption expenditure/GDP shows an increasing trend over time since 1980. On the other hand, the public share (government consumption expenditure), ineffective public expenditure by the expression of Lin (1994) used in this study is thought to be a reason why the Armey Curve hypothesis is not valid in these countries. In the UK, Italy, Japan and Germany, for example, public investments in the defense industry are particularly noteworthy. According to the Stockholm International Peace Research Institute, UK, Japan, Germany and Italy made government consumption expenditures of 47.2, 45.4, 44.3 and 29.2 billion $ respectively in 2017, it becomes meaningful why Armey Curve hypothesis is not valid in these countries when it is considered that there is no military investment expenditure in the public share variable used in this study. Unemployment

effects statically significant and negatively economic growth. After all, we determine optimal government size using differentiating the equation (β/-2β) shown on Table 4.

Table 4: Optimal Government Consumption Expenditures (%)

Countries	Optimal Government Expenditures (β/-2β)
USA	12.46
France	23.57
Canada	18.93

According to empirical results, optimal government expenditure of USA, France and Canada are 12.46%, 23.57% and 18.93%, respectively. These results could be more sense when we compare this with government size in economic growth of USA, France and Canada in 2013. In 2013, government size of USA, France and Canada are 14.07, 24.15 and 20.29, respectively. These comparing meaning that government consumption expenditures of USA, France and Canada are higher than optimal government size gotten from Armey Curve hypothesis.

5. Conclusion and Policy Implications

After the 2008 financial crisis, countries spent an amount of government consumption expenditure to prevent recession in their economies. In particular, The European Union countries and The United States have transferred large amounts of money to companies affected by the recession. In this way, the effects of the economic crisis would be eliminated. High amounts of government consumption expenditure made the economies more ungainly and the effects of the crisis hedged. In this context, recently research on the role of government consumption spending on economic growth has become important again. In this paper, we examine validity of Armey Curve Hypothesis for G7 countries using ARDL cointegration procedure. The relationship between government expenditures and economic growth are vital especially for developed and developing countries which were affected by financial crisis in 2008. The results from ARDL cointegration procedure show that there is a long-run relationship between government consumption expenditures and economic growth. Considering long-run coefficients, Armey Curve Hypothesis is valid for USA (%12.46), France (%23.57) and Canada (%18.93), while invalid for UK, Japan, Italy and Germany. Findings show that for the USA, France and Canada, government consumption spending increases to a threshold point and then decreases economic growth to a certain level. In this regard to increase economic growth, USA and Canada may decrease their government consumption expenditures, on the other hand, France may increase its government consumption expenditures.

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