Government Expenditure and Political Business Cycle

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Abstract

Fiscal policy can be optimal when it is independent of political distortion. The optimality of fiscal policy indicates the capability of stabilizing economy and provoking economic growth. We reviewed the Korean fiscal policy in past 30 years under such the optimality conditions and observed that the Korean fiscal policy trend appeared pro-cyclical and did not play a relevant role in stimulating economic growth. We attempted to observe the existence of political business cycle by finding empirical evidence of the effects of elections on government spendings, employing the Korean data. Using annual data from 1970-1998 and dummy variables denoting election year or election lags, we employed the two step estimation method. The estimated coefficients of dummy variable indicating the year of election were all positive and statistically significant. The estimated coefficients of other dummy variables indicating the lag to the election were all negative. And the absolute value of negatively estimated coefficients are larger as the election lag becomes longer and decreases as a election lag become shorter. These facts all together strongly suggest the existence of negative relationship between election and fiscal expenditure, which verifies the existence of the political business cycle.

Ⅰ. Introduction

Fiscal policy in a country plays an important role in determining the economic situation in the present and the future. More recently, the globalization highlights the importance of the fiscal policy, since other policy tools such as monetary policy becomes weaker under the open economy with the financial market and capital market liberalization. There have been enormous efforts to investigate the effects of fiscal policy both in the microeconomic and the macroeconomic levels. In those efforts, fiscal policy have been treated as the politics-free policy. However, fiscal policy cannot be independent of political process. Budget process summarizing fiscal policy mainly relies on the political agenda. If this is the case, fiscal policy becomes endogenous in investigating its effect on economic status. Political effects on fiscal policy should also be scrutinized in terms of political business cycles.

There have been many attempts to empirically find the existence of the political business cycles. Among many studies analyzing the political economy of macroeconomic policies, this paper focuses on the political economy of fiscal policy, especially the budget process. In this paper, hence, political business cycle is defined as a systematic influence of the political process like elections on government expenditure. We attempt to observe the existence of political business cycle by finding empirical evidence of the effects of elections on government spendings in Korea. In the section Ⅱ, we discuss about the optimal fiscal policy and critically review the Korean fiscal policy in past 30 years. In the section Ⅲ, we discuss about how political agenda like various elections can affect budget process and apply such discussion to the Korean case. In the section Ⅳ, we construct empirical model testing the existence of the political business cycle and attempt the test.

Ⅱ. Optimality and Evaluation of Fiscal Policy

A fiscal policy is shown to be optimal when it stabilizes the economy. An automatic stabilizing effect of the fiscal policy plays a role of counter-cyclical movement in the absence of discretionary policy. Another optimality found in the fiscal policy is its effects on economic growth in terms of crowding in effect. An expansionary fiscal policy which increases government investment expenditure rather than government consumption expenditure results in economic

growth. These two criteria can provide good reasoning in evaluating one country's fiscal policy.

1. Stabilizing Effect of Fiscal Policy

Korean fiscal policy in the past 50 years can be summarized as a consistent budget balance in terms of the principle of 'expenditure within revenue'. Such a longtime budget balance enables the Korean economy to overcome the financial crisis of 1997 by using the revenue in the financial reconstructing and anti-unemployment policy. However, the dark side of the Korean fiscal policy appears to be more critical. Such the conservative role of the fiscal policy had contributed very little into economic stabilization and had a harmful effect on financial sectors. In this period of rapid economic growth, the Korean government had exercised power in allocating funds in the financial market instead of using fiscal policy, which had prevented the financial industry from developing. Moreover, the maintenance of the balanced budget was not in the consolidated but in the general account level. In other words, the public sector not captured in the general account contained considerable budget deficit.

Now, we require a rigorous analysis evaluating the stabilization effect of fiscal policy. We can compare fiscal impulse indicator to GNP gap in order to find whether fiscal policy had been pro-cyclical or counter-cyclical. If it turned out to be counter-cyclical, we can conclude that the Korean fiscal policy. Cho and Park (1994) observed that fiscal policy had been pro-cyclical in most years prior to 1990 and in all the years since 1990. This finding highlighted that the discretionary fiscal policy in Korea for past 10 years magnified economic fluctuations.

2. Crowding-In Effect of Fiscal Policy

Another function of fiscal policy is to promote economic growth through the expansion of capital expenditure such as spendings on SOC, scientific technology, manpower development and so on. Government expenditure can be classified into capital expenditure (Investment Expenditure) and current expenditure (Consumption Expenditure). Various studies concluded that government capital expenditure can increase investment and output in terms of the improvement of productivity of private capital, which is the crowding-in effect.

In Korea, the positive effect of the government capital expenditure on the economic growth had not played a role in fiscal policy, since its proportion in the total government expenditure had been smaller than the government current expenditure. As shown in table 1, the share of current expenditure reached almost 80% in 1970. Since then, the portion has been reduced to 50%, which is still much higher than OECD country's average share of 30%. This implies that the Korean fiscal policy has not exercised GNP increasing effects so far.

<Table 1> Government Current and Capital Expenditure

(unit: billion wons, %)

Years	Gov't Current Expenditure		Gov't Capital Expenditure		Total Gov't Expenditure	
	amount	% to GDP	amount	% to GDP	amount	% to GDP
1972	516	12.21	121	2.87	637	15.12
1973	557	10.27	113	2.08	671	12.38
1974	878	11.46	130	1.70	1,008	13.15
1975	1,246	12.10	185	1.80	1,432	13.91
1976	1,757	12.47	244	1.73	2,001	14.20
1977	2,319	12.84	418	2.31	2,737	15.15
1978	3,175	13.02	530	2.17	3,705	15.19
1979	4,454	14.19	727	2.32	5,182	16.51
1980	5,122	13.43	1,387	3.64	6,510	17.06
1981	6,525	13.70	1,651	3.46	8,176	17.16
1982	8,003	14.63	2,096	3.83	10,099	18.46
1983	9,144	14.24	1,536	2.40	10,681	16.64
1984	10,212	13.87	1,661	2.26	11,874	16.13
1985	11,523	14.04	1,813	2.21	13,336	16.25
1986	12,829	13.40	2,119	2.21	14,948	15.61
1987	14,324	12.77	2,618	2.33	16,943	15.11
1988	16,746	12.58	2,707	2.03	19,453	14.61
1989	20,024	13.42	3,751	2.51	23,766	15.93
1990	24,648	13.73	4,355	2.43	29,004	16.15
1991	29,267	13.52	5,651	2.61	34,918	16.13
1992	34,588	14.08	5,341	2.17	39,928	16.25
1993	38,777	13.97	5,948	2.14	44,725	16.12
1994	44,842	13.87	7,928	2.45	52,770	16.31
1995	49,061	13.00	12,012	3.18	61,072	16.18
1996	55,429	13.25	15,887	3.80	71,316	17.04
1997	61,896	13.65	17,107	3.77	79,004	17.43
1998	75,933	17.09	17,620	3.97	93,553	22.40

Source: *Economic Statistics Yearbook*, each year, Bank of Korea

The shares to the GDP in table 1 also shows weak role of the Korean fiscal

policy in the economic growth. The ratio of the current expenditure to GDP appear 12-14% consistently, while that of the capital expenditure was below 3% since 1975. In particular, a downward rigidity of the current expenditure seems to be a more serious problem. During the 3 years between 1980 and 1982, Korea experienced the high budget deficit of 4% ratio to GDP (the consolidated budget base) by increasing both current and capital expenditure. However, after 1983 when budget deficit declined to 1.5%, the ratio of the current expenditure remained at a level of 14%, while the ratio of the capital expenditure was reduced from 3.83% to 2.4%. The ratio of the former to GDP increased from 13% to 14%. This implies that once the current expenditure increases, it is hard to be reduced.

Empirical studies on the effectiveness of Korean fiscal policy also showed that capital expenditure had larger multiplier effect and productivity increasing effect than consumption expenditure and transfer expenditure. Sundararajan and Thakur (1980) estimated effects of public investment and private investment on the economic growth rate using 1958-1976 data and showed the estimated longterm multipliers, 5.176 and 24.163 respectively. Wai and Wong (1982), employing 1960-1975 data and the flexible acceleration principle, showed that a one unit increase in the government investment expenditure increased the private investment by 1.145 units. Using the Neo-classical model and 1953-1983 data, Evans (1988) concluded that the permanent government investment expenditure increased private investment and output significantly, while the government consumption expenditure excluding defence spending crowded ou private consumption and private investment. Lee(1990), using the endogenous growth model and 1953-1986 data, found that the economic growth rate had a positive correlation with government investment expenditure/GNP or government investment expenditure/total government expenditure, while it had a negative correlation with government expenditure/GNP.

More recently, Lee (1996) estimated the Cobb-Douglas production function treating the public capital as the third production factor and using 1971-1994 data. Then he found that public capital became the complement relation to private capital since 1990 and stimulated private production. Kim and Lee (1998) also derived similar conclusion using 1987-1996 data such that the government capital expenditure enlarged the potential power of economic growth with a smaller effect on price rise in comparison to the government current expenditure. Park (1998) constructed a econometric model using the quarterly data between 1988 and 1997 and showed that capital expenditure had the largest effect on the

economic recovery and the reduction of unemployment, while the transfer expenditure had a small effect on the economic recovery and the current expenditure had the smallest effect.

Ⅲ. Election and Government Expenditure

1. Political Economy of Fiscal Policy

Fiscal policy is desirable if it is not affected by political factor. And in order to achieve the goals which fiscal policy pursues, it is necessary to avoid the political influence such that political process like elections prevent stabilization function of fiscal policy from working by increasing expenditures excessively. Thus, it is very important to accomplish the political neutrality in fiscal policy. Alesina and Perotti (1994) discussed the political influence in budget process and suggested some devices to achieve the political neutrality.

When a certain government holds a power by majority voting, the government easily has an incentive to take over the budget deficit to the following government by increasing government expenditure especially consumption expenditure and transfer expenditure. The stronger power the government can grasp through easily controlling major parties, the more easily the balanced budget results in deficit. Poterba (1994) contented that the state level budget law was more effective in fiscal reconstructing for the balanced budget than the central government level budget legislation. This is because central government can exercise stronger power in the budget process by assuming that the government is supported by the public from the majority voting.

It is also meaningful to focus on the war of attrition in the budget process. Although the remarkable reduction of government expenditure is required for reducing budget deficit and public debt, the ministers in the large sized ministries try to postpone or abolish the effort of reducing the expenditure. Then, more competition to hinder the efforts occurs among the ministries. The war of attrition also appears in the congress. The interest groups may demand the congress not to reduce the spending for them and even to increase the spendings from the interest groups. As a result of the war of attrition, it is very hard to establish the fiscal discipline which is essential for achieving a balanced budget. The benefits of a numerical target for insuring fiscal discipline

are obvious. A balanced-budget law can eliminate persistent deficits induced by political distortions or by the politicians' opportunism and "short-termism."

2. Election and Political Business Cycle

Nordhaus (1975) introduced a model of the Politically Induced Business Cycles. Prior to the election, the government or ruling party attempts to reduce unemployment, to increase the disposable income and to increase welfare benefits, which results in the expansion of government expenditure. After the election, however, they focus on the reduce the government expenditure in order to restrain the inflation which occurs from the fiscal expansion before the election. This trend makes the business cycle around the period of election. Economists supporting Nordhaus hypothesis also argued that the economic equilibrium induced by the political business cycle was sub-optimal. The sub-optimality indicates the higher inflation rate than optimality.

Many empirical researches have undertaken to test the existence of the political business cycle. Nordhaus (1975), Tufte (1978) and Weintraub (1978) investigated the changes in unemployment, real income, transfer expenditure and money supply to test the existence. Frey and Schneider (1981) and Ahmad (1983) estimated the reaction functions of monetary policy and fiscal policy. Beck (1982), Laney and Willet (1983), and Allen (1986) also used the reaction functions. Both observed the existence of the election business cycle of fiscal policy.

There are also various attempts to test the political business cycle in Korea. Most studies focused on the monetary policy in testing the political business cycle and accepted the hypothesis in the constrained level because of the shortage of the data series. Recently, Ryoo (1998) and Jung (1998) concluded that the political business cycle existed in money supply. More recently, Lee (1999) applied McCallum (1975)'s testing model to 1987-1997 data which included two presidential elections, asserting that the political business cycle did not exist. He used the Short-Term Phillips Curve type hypothesis that as approaching to election, expansive money policy was used to reduce the unemployment rate, while after the elections, the rise of the unemployment rate was inevitable since reduction of money supply was attempted to lower high inflation. Although many attempts have been undertaken for testing the political business cycle, there has been few studies focusing on the government expenditure. As discussed earlier, the political process mainly affects the budget

process. Hence, if we want to verify the existence of the political business cycle, we may need to scrutinize the effect of political agenda on the government expenditure. This is the reason why this study focus on the government expenditure in testing the hypothesis.

Ⅳ. Empirical Evidence of Political Business Cycle

1. Data

Table 2 summarizes the election years since 1970 in Korea. There had been twenty five elections between 1970 and 1998, including nine Presidential elections and eight General elections. There were eight election in eleven years between 1987 and 1998.

Table 3 presents key fiscal variables such as fiscal expenditure of central government and public sector, nominal GDP and their growth rates. Most of fiscal variables had increased remarkably during past thirty years of economic growth. Between 1970 and 1998, the average yearly growth rate of fiscal expenditure of central government (FECGR, hereafter) was 21.99%, which was a little bit greater than that of the nominal GDP growth rate (NGDPR, hereafter) 20.51%.

While the average growth rate was somewhat similar between the fiscal expenditure and nominal GDP, the volatility of the growth rate of fiscal expenditure was far greater than that of NGDPR. The transition coefficients of FECGR and NGDPR were 0.1205 and 0.0736 respectively, which could be interpreted as the discretionary fiscal policies during these periods. In fact, it could observe that the growth rate of fiscal variables was negatively correlated with the election lag. This implies that the smaller the election lag defined as the difference between coming election year and current year, the larger growth rate of fiscal variables. This trend seems to be more clearly observed after 1980's than before 1980's. In 1970's, the Korean economy experienced tremendous structural changes such as exceptionally high economic growth, unprecedented demand increase from Middle East Asian Countries, and export-concentrated government policies, which might loosen the relationship between election lag and fiscal expenditure. From 1980s, the negative relation between election lag and fiscal expenditure seems to be somewhat clearly observed as the Korean economy had become more stabilized than 1970s.

There are many ways to empirically investigate the political business cycles and we will use dummy variables denoting election year or election lags. There were nine Presidential elections between 1970 and 1998 as shown in Table 2. Among them, only four of them had been carried out by direct voting, and the remaining five by indirect voting via Peoples' Committee for Korea's Unification. We exclude these five indirect Presidential elections in our analysis, since the ruling parties seemed to have almost no chances to lose in these elections considering the political power of the ruling party around these periods (hence the ruling parties had no sufficient motivations to spend more for the coming elections). The Peoples' Votes (votes asking people's opinion) are also excluded due to similar reason. We include local elections both for local congress and local government. We treat the year of election whose date were after October 1st as the following year, considering the determination process of fiscal budgeting. We do not put any special weights on the year of multiple election such as 1991.

In the following empirical analysis, we used two kinds variables indicating elections: The variable T1 denote the election lag and variable Di (i=0, 1,2,3,4,5) denote the election lag dummy variable. For example, if the coming election is after three years, then T1 is 3, while D3 is 1 and D0, D1, D2, D4 and D5 are zero.

<Table 2> Years of Various Types of Election and Votes

Year	Type of Election and Vote			
	Presidential Election	General Election	Local Election	Peoples' Vote
1970				
1971	April 27th	May 25th		
1972	Dec. 23rd.(Indirect)			Nov. 21st
1973		Feb. 27th		
1974				
1975				Feb. 12th
1976				
1977				
1978	July 6th (Indirect)	Dec. 12th		
1979	Dec. 6th (Indirect)			
1980	Aug. 27th (Indirect)			Oct. 22nd
1981	Feb. 25th (Indirect)	Mar. 12th		
1982				
1983				
1984				
1985		Feb. 12th		
1986				
1987	Dec. 16th			Oct. 27th
1988		Apr. 26th		
1989				
1990				
1991			Mar. 16th, Jun. 20th	
1992	Dec. 18th	Mar. 24th		
1993				
1994				
1995			Jun. 27th	
1996		Apr. 11th		
1997	Dec 18th			
1998			Jun. 4th	

Footnote 1) Elections for Peoples' Committee for Korea's Unification are included in General Election.

2) Local elections include both election for local government and local assembly.

Source : Central Elections Committee

<Table 3> Expenditure, Revenue and Election (in Bil. KRW)

Yr.	FECG	FECGR	FEPS	FEPSR	RGA	CFA	NGDP	NGDPR	EL
1970	507.5		847.1		405.1	-71.0	2771.3		1
1971	594.0	1.1704	1065.4	1.2577	494.5	-79.8	3423.4	1.2353	0
1972	807.2	1.3589	1241.2	1.1650	605.3	-289.6	4211.9	1.2303	1
1973	780.1	0.9664	1414.1	1.1393	606.2	-121.7	5421.5	1.2872	0
1974	1301.6	1.6685	2291.6	1.6205	942.7	-232.7	7663.7	1.4136	5
1975	1909.7	1.4672	3287.7	1.4347	1446.9	-466.1	10295.5	1.3434	4
1976	2725.6	1.4270	4462.6	1.3574	2219.4	-398.3	14088.0	1.3684	3
1977	3542.5	1.2997	5537.5	1.2409	2990.8	-475.6	18063.3	1.2822	2
1978	4769.5	1.3464	7713.5	1.3930	4040.5	-615.8	24388.2	1.3502	1
1979	6490.9	1.3609	10325.9	1.3387	5507.3	-440.3	31393.4	1.2872	0
1980	8311.9	1.2805	13456.9	1.3032	6486.1	-1173.7	38148.4	1.2152	1
1981	11025.6	1.3265	17638.6	1.3107	8040.0	-2110.9	47656.7	1.2492	0
1982	12593.4	1.1422	18944.4	1.0740	9525.9	-2222.1	54721.0	1.1482	3
1983	13211.4	1.0491	19920.4	1.0515	10753.3	-950.6	64196.5	1.1731	2
1984	14547.5	1.1011	21908.5	1.0998	11828.9	-922.9	73605.1	1.1466	1
1985	16086.1	1.1058	23520.1	1.074	13008.9	-713.3	82062.1	1.1149	0
1986	17232.8	1.0713	27361.6	1.1633	14699.3	-64.9	95736.4	1.1666	2
1987	19156.9	1.1117	29041.5	1.0614	17883.9	259.7	112130.3	1.1712	1
1988	22517.3	1.1754	33619.8	1.1576	22040.8	1642.7	133134.2	1.1873	0
1989	26996.7	1.1989	40042.0	1.1910	25590.9	-19.1	149164.7	1.1204	2
1990	32536.9	1.2052	50697.2	1.2661	31304.6	-1578.2	179539.0	1.2036	1
1991	39366.9	1.2099	63011.7	1.2429	32928.7	-4022	215734.4	1.2016	0
1992	43842.1	1.1137	73760.0	1.1706	34534.1	-1702.9	240392.2	1.1143	0
1993	51187.9	1.1676	83169.9	1.1276	38583.7	812.9	267146.0	1.1113	0
1994	62321.1	1.2175	99527.6	1.1967	44935.8	1384.3	305970.2	1.1453	1
1995	72915.0	1.1700	106153.9	1.0666	52928.0	1241.6	351974.7	1.1504	0
1996	83705.2	1.1480	123005.5	1.1587	57962.1	1099.0	389813.4	1.1075	0
1997	92464.2	1.1046	146966.8	1.1948	67578.6	-6959.3	420986.7	1.0800	1
1998	110313.9	1.1930	161751.7	1.1006	76477.5	-18757.3	479170.1	1.1382	0
Average	26681.4	1.2199	41092.6	1.2128	20563.8	-1308.6	131827.7	1.2051	
Std. Dev.	30856.9	0.1470	46810.9	0.1319	21960.3	3815.5	14729.9	0.0887	

Footnotes

1) FECG : fiscal expenditure of central government FECGR : growth rate of FECG
FEPS : fiscal expenditure of public sector FEPSR : growth rate of FEPS
RGA : revenue in general accounts CFA : consolidated fiscal accounts
NGDP : nominal gross domestic product NGDPR : growth rate of NGDP
EL : election lag defined as the difference between the coming election year and current year.

2) Public sector includes central government, local government and nonfinancial public enterprises.

3) "-" in CFA indicates deficit.

4) Growth rate is defined as ratio of current year value to previous year.

5) Election lag is calculated excluding Peoples' Vote.

Source : National Statistical Office, Bank of Korea, Korea Institute of Public Finance.

2. Simple Regression Analysis of the Effect of Election on Expenditure

To investigate the relationship between election and fiscal expenditure, we first present simple regression results. In regression (1), we used the growth rate of central government's fiscal expenditure (FECGR) as dependent variable and nominal GDP growth rate (NGDPR), election lag (T1) and their intersection term explanatory variables. In regression (2), we used the growth rate of public sector's fiscal expenditure (FEPSR) as dependent variable with the same explanatory variables.

$$FECGR_t = \beta_0 + \beta_1 NGDPR_t + \beta_2 T1 + \beta_3 T1 \times NGDPR_t + \varepsilon_{1t} \quad \text{---------- (1)}$$

$$FEPSR_t = \gamma_0 + \gamma_1 NGDPR_t + \gamma_2 T1 + \gamma_3 T1 \times NGDPR_t + \varepsilon_{2t} \quad \text{---------- (2)}$$

Table 4 reports the estimation result. In both regressions, the growth rate of nominal GDP has positive relation with the growth rate of fiscal expenditure. In equation (1), one year decrease in election lag is accompanied with the increase in FECGR by 39.05%. In equation (2), one year decrease in election lag is accompanied with the increase in FECGR by 28.47%. These result can be regarded as one possible evidence of the negative relationship between election lag and fiscal expenditure.

<Table 4> Regression Results of Simple Regression

No.	Dep. Var.	Exp. Var.	Coefficient	Std. Err.	R-Squared	D.W.
(1)	FECGR	NGDPR	0.4942*	0.2909	0.7016	2.0467
		T1	-0.3905***	0.1553		
		T1×NGDPR	0.3280***	0.1212		
		Constant	0.5997	0.3468		
(2)	FEPSR	NGDPR	0.7082***	0.2502	0.7257	1.5547
		T1	-0.2847***	0.1336		
		T1×NGDPR	0.2345***	0.1042		
		Constant	0.3477	0.2983		

Footnote : "*", "**" and "***" denote statistically significant at 10%, 5% and 1% significance level respectively.

3. Two Step Regression Analysis of the Effect of Election and Expenditure

Generally speaking, changes in the expenditures of central government or public sector are closely related with those of nominal GDP. They tends to move together with that of economic growth. Hence to analyse the effect of

election on expenditure, it is essential to decompose the changes in fiscal expenditure into those due to changes in nominal GDP and those due to election. In other words, we need to extract out the trend component correlated with the GDP changes from the fiscal expenditure series. In this section, we employ simple two step approach to cope with this problem. In first step, we regress the fiscal expenditure on GDP. The projected fiscal expenditure based on this first step regression is interpreted as trend component in fiscal expenditure associated with the GDP change, while the residual is interpreted as change in fiscal expenditure which can not explained by the GDP change. In second step, we regress the residual form the first step regression on election lag dummy variables and investigate sign and significance of these variables. In the first step regression, we employ Cochrane-Orcutt estimation method and also OLS using the first differences of the dependent and explanatory variables to account for the possible nonstationarities of the level variables.

Table 5 presents the two step estimation results. In Korea, the changes in fiscal expenditure turn out to be mostly explained by those in nominal GDP. In regressions with FECG, FEPB, or GRGA as dependent variables and the nominal GDP as explanatory variables, the coefficients of determination were 0.9976～0.9982. When we use growth rate of each variable, the explanatory powers of the nominal GDP were 0.8687～0.9098 in expenditure, 0.6342 in revenue. It is interesting that the increases in expenditure and revenue exceed those of nominal GDP. For example based on regression FA1, the increase in NGDP by 1 percentage point corresponds to the increase in FECG by 1.047 percentage point. This reflects that the portion of public sector has increased with Korea's economic growth.

In second step regressions SA1, SA2, SB1 and SB2, the estimated coefficients of dummy variable D0 indicating the year of election, were all positive. In regression SA2, SB1 and SB2, these estimated coefficients were statistically significant. The estimated coefficients of other dummy variables were all negative. It is very interesting to note that the absolute value of negatively estimated coefficients are largest in D2 or D3, and decreases as the election lag become shorter. These facts all together strongly suggest the existence of negative relationship between election and fiscal expenditure.

In the revenue side, this negative relationship is hard to find.

<Table 5> Estimation Results Based on Two Step Approaches

1. First Step

Name	Dep. Var.	Exp. Var.	Coefficient	Std. Error	R-Squared	D.W.
FA1	FECG	Constant NGDP AR(1)	-2.1647*** 1.0472*** 0.6972***	0.4507 0.0390 0.1538	0.9976	2.1213
FA2	FEPS	Constant NGDP AR(1)	-1.5502*** 1.0322*** 0.7991***	0.6452 0.0542 0.1324	0.9982	1.5569
FA3	RGA	Constant NGDP AR(1)	-2.2044*** 1.0302*** 0.7119***	0.4055 0.0350 0.1411	0.9979	1.5820
FB1	FECGR	Constant NGDPR	-0.0352 1.0425***	0.0926 0.0780	0.8687	2.5364
FB2	FEPSR	Constant NGDPR	-0.0296 1.0318***	0.0742 0.0625	0.9098	1.7314
FB3	RGAR	Constant NGDPR	-0.3470 1.2949***	0.2331 0.1929	0.6342	1.8078

2. Second Step

Name	Dep. Var.	Exp. Var.	Coefficient	Std. Err.	R-Squared	D.W.
SA1	RFA1	D0 D1 D2 D3 D4	0.0190 -0.0093 -0.0685 -0.0135 -0.0110	0.0150 0.0304 0.0479 0.0694 0.0958	0.1434	2.0162
SA2	RFA2	D0 D1 D2 D3 D4	0.0222* -0.0142 -0.0730* -0.0794 -0.0218	0.0117 0.0237 0.0374 0.0542 0.7075	0.2105	1.4573
SA3	RFA3	D0 D1 D2 D3 D4	0.0028 0.0093 0.0121 0.0666 0.0666	0.0135 0.0274 0.0433 0.0627 0.0865	0.1597	1.6739
SB1	RFB1	D0 D1 D2 D3 D4	**0.0460**** -0.0355 -0.1381** -0.1299 -0.0821	0.0179 0.0348 0.0573 0.0830 0.1146	0.2748	2.2804
SB2	RFB2	D0 D1 D2 D3 D4	**0.0383***** -0.0271 -0.1087** -0.1679** -0.0751	0.0140 0.0271 0.0447 0.0647 0.0893	0.3147	1.5013
SB3	RFB3	D0 D1 D2 D3 D4	0.0173 -0.0090 -0.0250 0.0340 0.0850	0.0171 0.0347 0.0548 0.0792 0.1095	0.1822	1.7421

1) In regression FA1, FA2 and FA3, Cochrane-Orcutt method is used, while in regression FB1, FB2 and FB3, OLS is used.
2) In regression FA!, FA2, FA3, log values of each variable are used.
3) RFAi (for I=1,2,3) denote the residual from the regression FAi and RFBi denote that from the regression FBi.
4) "*", "**" and "***" denote statistically significant at 10%, 5% and 1% significance level respectively.

Ⅴ. Conclusion

Fiscal policy can be optimal when it is independent of political distortion. The optimality of fiscal policy indicates the capability of stabilizating economy and provoking economic growth. We reviewed the Korean fiscal policy in past 30 years under such the optimality conditions and observed that Korean fiscal policy trend appeared pro-cyclical and did not played relevant role in stimulating economic growth. Then we presumed that the Korean fiscal policy had been influenced by political process.

We investigated the detailed path through which fiscal policy is affected by the political process, especially elections. It is also meaningful to focus on the war of attrition in budget process which prevents the fiscal discipline from establishing. Although the remarkable reduction of government expenditure is required for reducing budget deficit and public debt, the ministers at the large sized ministries try to postpone or abolish the effort of reducing the expenditure. The war of attrition also appears in the congress by the various interest groups. who demand the congress not to reduce the spending.

So far, there have been many attempts to test the political business cycle. However, there has been few studies focusing on the government expenditure. Hence, if we want to verify the existence of the political business cycle, we may need to scrutinize the effect of political agenda on the government expenditure. Therefore, this paper defined the political business cycle as a systematic influence of the political process like elections on government expenditure. We attempt to observe the existence of political business cycle by finding empirical evidence of the effects of elections on government spendings in Korea

Using annual data from 1970-1998 and dummy variables denoting election year or election lags, we employed the two step estimation methods. In first step, we regress the government expenditure on GDP. In second step, we regress the residual form the first step regression on election lag dummy variables and investigate sign and significance of these variables.

Estimation results appeared very interesting. The estimated coefficients of dummy variable D0 indicating the year of election were all positive and statistically significant. The estimated coefficients of other dummy variables indicating the lag to the election were all negative. It is very interesting to note that the absolute value of negatively estimated coefficients are larger as the election lag becomes longer and decreases as the election lag become shorter.

These facts all together strongly suggest the existence of negative relationship between election and fiscal expenditure. In conclusion, we empirically observed the existence of the political business cycle within context of our definition of the political business cycle.

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