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Empirical Studies About the Economic and Political Determinants of Budget Deficits

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This paper is a survey of the literature on determinants of budget deficits. It presents some important studies, in particular the emphasize is given to the empirical results. It begins with tax smoothing model and concludes that this approach alone is not possible to explain the determinants of budget deficits. The political determinants of budget deficits are organized as: stability, disagreement between decision makers, ideological differences, fiscal restraints and budgeting procedures. The empirical results about these factors are presented. Political factors, which contains important policy implications, seem to be effective to clarify the subject.

1. INTRODUCTION

There is a huge literature about determinants of budget deficit. The neoclassical and optimizing view of fiscal policy is represented by the equilibrium approach to fiscal policy (or tax smoothing model of budget deficits and public debt). The empirical studies from 1980ies until today suggest the deficiency of tax smoothing model to explain the budget deficits covering a large number of countries. As an alternative to this approach, a large body of literature has analyzed the relation between political and institutional structures and macro economic performance.

This paper summaries the empirical studies about the determinants of budget deficits in political economics. We stress on the empirical facts since without empirical support a theory could not live much in economic literature. We try to cover the literature systematically, so that the determinants of budget deficits are categorized as stability, disagreement between decision makers, ideological differences, fiscal restraints and budgeting procedures. But our starting point of analysis is the neoclassical tax smoothing model, which is introduced by Barro (1979). We will present some econometric results of the model for a large set of countries conducted by several researchers.

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The paper is organized as follows. Section 2 examines the tax smoothing model. In the following sections the political factors will be stated. Section 3 examines the effect of stability. Section 4 is related to disagreement between decision makers caused by coalitions and divided governments. In section 5 the factor of ideological differences will be discussed. In section 6 fiscal restraints about budget balance will be examined. In section 7 the studies about the effect of budgeting procedures will be discussed. Finally section 8 is about the concluding remarks.

2. TAX SMOOTHING MODEL

Barro (1979) develops a theory of optimal public finance, known as tax smoothing theory of government budget. In his model there is a closed economy without capital in which representative agent consumes, works and saves. Both the agent and the government have infinite time period. The government is assumed to finance its expenditures through either taxation or public debt issue. The government is a benevolent social planner that maximizes the utility of the representative agent. So the objective of the government is to choose the real tax revenue at each period so that the distortionary effects (the so-called excess burden) of taxation is minimized, given a politically desired path of public spending. As a result of the optimization problem the government should equate the marginal distortions associated with the last dollar of revenue collected on all tax bases at all points in time. Finally the role of public dept should be to smooth tax distortions over time. One implication of the Barro's tax smoothing model is temporary expenditures or temporary short falls in revenue should thus be financed by issuing dept, whereas tax rates should be changed right away in the face of permanent shocks. So the public deficits emerge when public spending is temporarily high (as during wars) and when output is temporarily low (as during economic recessions).

In order to test the theory with empirical facts there are many studies conducted in the literature. Barro (1986 and 1987) tested the tax smoothing model on American and British data for 20 years time series length. Both data are consistent with the theory in the sense that the dept to GNP ratios increase during wars, decrease in peacetime and change through business cycle. But the researches which cover increased number of countries to analyze and the time period after 1980's, has not so strong supporting results.

When we assume that the government uses the seigniorage with taxing to finance its expenditure. The tax smoothing model has some implications about the fiscal determinants of inflation rate and seigniorage. Mankiw (1987) suggest that, since the objective of the government is to minimize the overall excess burden of taxation, same smoothing result will apply also for seigniorage. A rising path of total revenues relative to GDP should be met both a rise in tax rates and a rise in the inflation tax.

Thus tax smoothing theory in this form suggest a linear relation between tax rate and inflation. Mankiw tests this proposition for the U.S. data. He finds a positive and significant correlation between tax rates and inflation rate. But Roubini (1991) rejects this hypothesis with empirical evidence for a sample of 92 country for the 1950-88 period including developing countries. Roubini (1991) also tests the implication of tax smoothing, as real budget deficit is a function of transitionary shocks to output and government spendings for the same countries 1970-1987 period. The empirical evidence again rejects the implication of tax smoothing model. By using a similar approach, Roubini and Sachs (1989) and Grilli, Masciandora and Tabellini (1991) conclude that budget deficits in many OECD countries appear to be too large to explain by appeal to transitory increases in government spending.

Alesina and Perotti (1995) try to answer two questions in their survey paper about the political economy of budget deficits: Why do we observe large and persistent deficit in peacetime? Why do we observe large debts in certain countries and not in others? They conclude that tax smoothing model, as a positive theory of budget deficits, is deficient to answer these two questions.

Since the empirical evidence also tends to have partial support for optimizing models of fiscal deficits, tax rates and inflation, many researcher pursue the idea that fiscal deficits may be partly determined by political and institutional factors. Now we will try to summarize these factors in the following sections.

3. STABILITY

A number of studies from political economy literature suggest that an increase in the degree of political instability appears to lead to greater budget deficits.

In order to test the hypothesis Roubini (1991) conducts a study, which covers 1971-82 period for 77 countries. The frequency of government change-including both regular government changes and irregular (military coups) changes is used as a measure of political instability. As a measure of fiscal deficits an average for the 1971-82 period of the overall fiscal balance of the consolidated central government as a share of GNP is used. Per capita GNP and average real GNP growth is used as additional regressors. It is observed that coefficient for political stability has correct sign and is statistically significant.

When frequency of military coups and frequency of regular government changes are used as separate regressors, the coefficient on the frequency of coups has the wrong sign and statistically insignificant. This result suggest that military regimes are not more likely to run budget deficits than democratic ones. As change in base money is added as a share of gross national product (GNP) as regressor the overall results of the regression are improved.

Grilli, Masciandro, and Tabellini (1991), use cross section data for 15 countries from 1970-1989. They regress net public debt as percentage of GNP on the percentage of governments supported by a single party majority, average government durability and the political stability index. The regression results show that the stability of the government (duration of governments) is more important than the stability of governing parties. Moreover the party on government (majority, minority or coalition) is not important either.

De Haan and Sturm (1994) try to explain the cross country differences in dept accumulation and public sector size of member countries of the European Community during 1981-1989. They regress change in public dept-GNP ratio on some economic and political variables including frequency of government changes. It is concluded that the growth of government dept is positively related to the frequency of government changes.

4. DISAGREEMENT BETWEEN DECISION MAKERS

The greater is the conflict between decision makers, the more difficult it will be to enact deficit reduction measures. It is likely that such policy conflicts are more important in countries with coalition and divided governments. Game theory also suggests that cooperation is harder when the number of the player is large. (See the model of Spolaore (1992) for the effect of alternative institutional policy making systems on macroeconomic policy.)

The experience of several countries appear to support the hypothesis that the coalition systems tend to act too little and too late in the presence of political-economic conflict. Roubini and Sachs (1989) emphazised the slow rate of reduction fiscal deficit for several OECD countries after 1973's. They suggest that one explanation could be the difficulties of political management in coalition governments. In order to test this hypothesis, Roubini and Sachs develop their index of political dispersion, which measures the type of government in power. The index is constructed as follows:

Value: 0 one party majority parliamentary government or presidential government, with the same party in the majority in the executive and legislative branch;

1) coalition parliamentary government with 2 coalition partners or presidential government, with different parties in control of the executive and legislative branch;

2) coalition parliamentary government with 3 or more coalition partners;

3) minority parliamentary government.

Their panel data covers fifteen OECD countries for time period 1960-1985. Change in net debt to GNP ratio is used as dependent variable; index of political dispersion is included to the other economic and political factors. The results support their view that other things being equal, large coalition governments have higher deficits, than do one-party, majoritarian governments.

The separation of powers regimes is confronted to the phenomenon of divided government frequently in recent decades. Divided government is realized when the executive and legislature arises from different patterns of partisan control of these institutions. Poterba (1994) and Alt and Lowry (1994) present evidence on the effect of divided government by looking at American states. To test the hypothesis Alt and Lowry examine data, covering American states from 1968-1987. They also conduct a monte-carlo simulation which allows each type of government remains in power during ten years. They have concluded that split-governments have higher deficits and unified governments respond more to shocks than split-governments.

Poterba examines 27 states for 1988-92 in U.S.A to test whether divided governments select different policies than governments with a single party in power. The regression results suggest that the single-party states raise taxes and cut spending by greater amount in response to deficit shocks. He also concludes states of unified governments respond quickly to unexpected shocks relative to divided governments. Furthermore Poterba divides one-party states into those controlled by Republicans and those controlled by Democrats and could not reject the null hypothesis that there is no difference in fiscal adjustment patterns.

5.IDEOLOGICAL DIFFERENCES

It is often maintained that left-wing governments aim for a higher share of government spending in total output and perhaps more willing to accept rising government budget deficits than do right-wing governments.

De Haan and Sturm (1994) in their study of the Member Countries of European Community try to test the possible effect of ideological differences. They use the share of cabinet portfolios or seats in parliament held by social democratic and other leftist parties (LEFT) as a measure to test their hypothesis. The Roubini, Sachs political power dispersion index (explained in section 4), the number of government changes, the lagged dependent variable, the change in the unemployment rate, the change in the gross domestic product (GDP) rate are other regressors. The dependent variable is the share of total government spending to GDP. All variables have been found significant. Similar results are obtained when the proportion of seats in parliament held by left-wing parties is used instead of LEFT. So they conclude that in countries having left wing governments, the growth of the share of government spending in total output is generally higher.

6. FISCAL RESTRAINTS

It is thought that the existence of fiscal restraints could induce the governments to fiscal stability i.e., long run budget balance.

Three empirical papers about American states discuss the point that budget rules do make some difference on budget balance. Von Hagen (1991) concludes that budget rules have some effect on the level and composition of state depts. Alt and Lowry (1994) and Poterba (1994) argue that American states with harder balanced budget rules react more promptly and more energetically to negative revenue shocks or positive spending shocks.

Von Hagen has two kinds of fiscal restraints on state budget policies, which are balanced budget requirements and limitations on states debt. He uses two nonparametric tests. These tests reveal that such restriction have significant effects on the distribution of per capita debt, debt-income ratios and the choice of dept instruments. The imposition of fiscal restraints raises the likelihood of low levels of per capita debt and debt-income ratios and induces substitution into nonrestricted debt instruments.

The American states have differing kinds of laws about balanced budget requirements. According to Alt and Lowry those laws can be categorized as, the ones requiring balance between projected revenues at the beginning of the fiscal year and the ones prohibiting ending a fiscal year in deficit (carrying over such a deficit into a next year). Their hypothesis to be tested is that, it is less probable to see delayed response to a negative revenue shock resulting in large cumulative deficit for the states where a deficit carry over prohibition exists.

Their data set covers 48 states for 1968-1987. By classifying the states according to deficit carry over rules, the regression results states that the response is larger where deficit carry over prohibitions exist. Again the result of their monte carlo simulation shows budget rules are more effective on unified governments, but no effects on split-legislatures. It is also found that unified governments adjust more when there exists rules.

Poterba (1994) on a quite different data set for American states try to analyze the effect of fiscal constraints on fiscal crises. The regression analysis is related to how spending and taxes after a deficit shock changing as a function of state fiscal constraint. Since the balanced budget requirements differ substantially across states, he benefits from the score assigned by Advisory Commission on Inter governmental Relations (1987) to stringency of state balanced budget provisions and called the regressor as weak anti deficit rules. In order to see the effect of fiscal constraints on fiscal crises, the additional regressor is the deficit shock. The first dependent variable is change in spending and the other one is change in taxes. Empirical results implies that, states with weak antideficit rules adjust spending less in response to positive deficit shocks than states with strict antideficit rules. There is no evidence that antideficit rules affect tax changes.

Poterba (1994) also focuses on effects of tax and expenditure limitations on adjustments to fiscal shocks. Regression results show that states with tax limitation raise taxes less than states without such limits in response to an adverse deficit shock. There is no evidence that spending cuts are larger in states with limits on taxes and expenditures. It is also shown that there is an interaction between weak antideficit rules and impact of divided governments. In states with weak rules, divided governments do not affect amount of spending cut in response to positive deficit shock. In states with strict rules, single party control has an important effect on deficit adjustment.

7. BUDGETING PROCEDURES

Finally, in some studies it is stressed that budgeting procedures may have important consequences for the sustainability of fiscal policy. Budgeting rules are the rules according to which budgets are drafted by the government, amended and passed by the parliament, and implemented by the government. According Von Hagen (1992) having a budgeting procedure, commit government to fiscal discipline is an essential condition for fiscal stability. Using 1970s and 1980s EC fiscal data and expert characterizations of budgeting procedures, Von Hagen find strong empirical support for the "structural hypothesis " that a budgeting process with strategic dominance of the prime or finance (or treasury) minister over the spending ministers, limits on parliamentary amendment power and limiting changes during the execution process is strongly conducive to fiscal discipline.

By the construction of structural index for each characteristics of each country he gives numbers from 0 to 4 which describes the quality. A low number represents a quality conducive to a small degree of fiscal discipline.

Von Hagen (1992) also construct a long term constraint index in order to test the long term hypothesis which is the more budgetary decisions are tied to a multi-period fiscal program, the greater the degree of fiscal stability achieved. In order to test two hypotheses he has the following characteristics:

1) the structure of negotiations within government,
2) the structure of parliamentary process,
3) informativeness of the budget draft ,
4) flexibility of the budget execution ,
5) long term planing constraint.

Definitions of indices:

1. Structural index:

SI1=sum of row entries of item 1-4,

SI2=sum of row entries of items 1, 2, 4,

SI3=sum of row entries of items 1 and 2.

2. Index of long term planning constraint:

CON1= sum of row entries of items 5,3, plus amendment index plus flex,

CON2= sum of row entries of item 5 plus amendment index plus flex,

CON3= sum of row entries of item 5 plus flex,

where, amendment index is the sum of the first three entries of item 2 and flex is the sum of the first, second, fourth and last rows of item 4. SI2 , SI3 , CON2 , CON3 are constructed in order to test whether each characteristic will contribute equally to the overall indexes.

Von Hagen (1992) makes 3 kinds of empirical test. All of the result are consistent with linear regression results. He founds that, structural index has a significant positive impact on net lending ratios, negative impact on debt ratios. Structural indexes SI1 and SI2 give similar result. So informativeness and flexibility did not indicate much importance.

Long term constraint index is not found significant. The final conclusion is that, long term constraint alone insufficient to overcome the problems of fiscal discipline for a country that ranks low on the structural index.

De Haan and Sturm (1994) try to explain cross-country differences in public dept growth in EC, 1981-1989. They benefit from an index, which is based upon the characteristics that Von Hagen distinguishes. They conclude that the growth of government dept is negatively related to budget index, which is consistent with Von Hagen's result.

8. CONCLUSION

The empirical studies about implications of the neoclassical approach seems to be unsatisfactory to explain the large deficits after 1980ies in several countries. On the other hand the political economy literature of fiscal policy bring a new point of view to the subject. The empirical studies also seems to support the idea that the budget deficits are partly determined by political and institutional factors.The factors which are summarized here was stability, fiscal restraints, disagreement between decision makers, ideological differences, budgeting procedures.

In an economy where there is political stability, some binding fiscal restraints, a unified government, not too much ideological differences between policymakers and a budgeting procedure which is conducive to fiscal discipline, the possibility of obtaining high fiscal performance and a balance budget is greater.

It is not a surprise to expect new hypothesis to be proposed and tested in the political economy literature in the future. This kind of analysis seems to also have several policy implications and be a guide for the politicians.

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