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Investigating the Factors Affecting Cyclical and Structural Budget Deficit in Iran

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Abstract

The purpose of this study is to investigate the factors affecting the structural and cyclical budget balance using Quarterly data during the period of 1996-2017. First of all, the factors affecting the cyclical and structural budget balance were identified using Sissokoand Dibooglu (2006) and inspired by Chalk (2002). Then, using the EU methodology, we focused on the cyclical and structural components of the budget. Finally, using the SVAR approach, the effect of effective shocks such as Taxes, government expenditures, GDP per capita, oil prices, inflation and terms of trade on cyclical and structural budget deficits were investigated. According to research results, the oil price shocks and current government expenditures are the two variables that increase the adoption of discretionary decisions by governments and, consequently, lead to structural budget deficits and the reduction of the power of influence of automatic stabilizers in the Iranian economy. Shocks such as GDP per capita growth, inflation, investment government expenditure, and terms of trade have led to a reduction in structural deficit and an increase in the power of influence of automatic stabilizers in Iran.

Keywords: Structural Budget, Cycle Budget, Discretionary financial policy, Automatic stabilizer, IRAN.

JEL Classification: O50,E62,H6.

1. Introduction

Breaking down the budget into its components, one can assess the extent to which automatic and discretionary fiscal policy stabilizers contribute to a country's economy (Fatas and Miho,2015;288). Cyclical budget balance represents the changes in budget balance due to the factors beyond the control of government and political power such as the fluctuations of business cycles (Boiciuc, 2015). Theoretically, cyclical budget deficit is positively correlated with automatic stabilizer. Thus, an increase in economic fluctuations leads to an increase in cyclical budget deficit. This, in turn, results in the activation of automatic stabilizer and a decrease in cyclical fluctuations. As a result, the higher the cyclical budget deficit, the higher the power of automatic stabilizer (Krajewski, 2004, 147).

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Cyclically or structurally adjusted budget balance filters out the idiosyncratic and cyclical effects from budgeting context, measuring those changes in budget balance that are taken into account by policy makers. In other words, the changes in structural budget balance is an outcome of the discretionary financial policies adopted by policy makers (Larch and Turrini, 2009). Discretionary financial policy requires legal activities. Thus, such policies are adopted and implemented without any delay and their effects on economy unfold following the crisis resolution.

Therefore, given that budget deficit emanates from the governments' discretionary activities as well as the automatic stabilizers of the economic cycle, the failure to break down these components will lead to inappropriate conclusion regarding the effect of expansionary fiscal policy on the economy. Therefore, breaking down the budget into cyclical and structural components as well as the factors contributing to these components is important.

2. Method and results

This study breaks down the budget using EU method. This was followed by modeling budget dissection and an investigation of the effect of financial policies impulses including tax revenue changes, current expenditures, development expenditures, as well as other economic impulses such as inflation, economic growth and oil price on cyclical and structural budget balance in Iran using Sissoko and Dibooglu's (2006) model and drawing on Chalk (2002). The theoretical and empirical investigation of structural and cyclical budget balance as well as the factors influencing them and the related impulses shed light on financial performance in Iran. This allows the policy makers to develop better policies.

This study is aimed at investigating the effect of the impulses on structural and cyclical budget balance, using structural vector Auto Regressive (SVAR) in Iran over the period 1375-1396. To this end, SVAR can be developed based on lower triangular matrix with 28 constraints using demand and supply model as an economic theoretical foundation.

$$\begin{bmatrix} \varepsilon^{POIL} \\ \varepsilon^{TOT} \\ \varepsilon^{GDP} \\ \varepsilon^{INF} \\ \varepsilon^{GOVEXPCONY} \\ \varepsilon^{GOVEXPCURY} \\ \varepsilon^{TAXR} \\ \varepsilon^{BD\ or\ SBD\ or\ CBD} \end{bmatrix} = \begin{bmatrix} a_{11} & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ a_{21} & a_{22} & 0 & 0 & 0 & 0 & 0 & 0 \\ a_{31} & a_{32} & a_{33} & 0 & 0 & 0 & 0 & 0 \\ a_{41} & a_{42} & a_{43} & a_{44} & 0 & 0 & 0 & 0 \\ a_{51} & a_{52} & a_{53} & a_{54} & a_{55} & 0 & 0 & 0 \\ a_{61} & a_{62} & a_{63} & a_{64} & a_{65} & a_{66} & 0 & 0 \\ a_{71} & a_{72} & a_{73} & a_{74} & a_{75} & a_{76} & a_{77} & 0 \\ a_{81} & a_{82} & a_{83} & a_{84} & a_{85} & a_{86} & a_{87} & a_{88} \end{bmatrix} \begin{bmatrix} u^{POIL} \\ u^{TOT} \\ u^{GDP} \\ u^{INF} \\ u^{GOVEXPCONY} \\ u^{GOVEXPCURY} \\ u^{TAXR} \\ u^{SBD\ or\ CBD} \end{bmatrix}$$

The following variables were investigated: POIL (Price of Oil Logarithm, TOT(Terms of Trade), GDP (Gross Domestic Production, INF (Inflation Rate (Consumer Cost Index), GOVEXPCONY (The current expenditures make up a percentage of GDP (cost credits), GOVEXPCURY (development expenditures make up a percentage of GDP (capital assets ownership)), TAXRY (tax revenues make up a percentage of GDP, CBD (changes in cyclical budget deficit make up a percentage of GDP, SBD (changes in structural budget deficit make up a percentage of GDP).

As previously mentioned, the budget is broken down using various criteria including the methods adopted by IMF, OECD and EU. Moreover, many authors have developed such methods. This study uses the EU's method to break down the budget into cyclical budget deficit and structural budget deficit in Iran. To this end, initially the cyclical component including cyclical revenues and expenditures components were calculated. European Union has used OECD method to break down these components. However, it has used Hodrick-Prescott Filter instead of Production function calculation for the purpose of obtaining the potential production and employment.

Prior to the estimation of the model, the stationary tests were performed and the seasonality of data was removed. Impulse Response Function shows the dynamic behaviors of variables in time series when an impulse occurs. Diagrams (1) and (2) depict the effects of financial policy impulses and other impulses on the structural and cyclical budget balance.

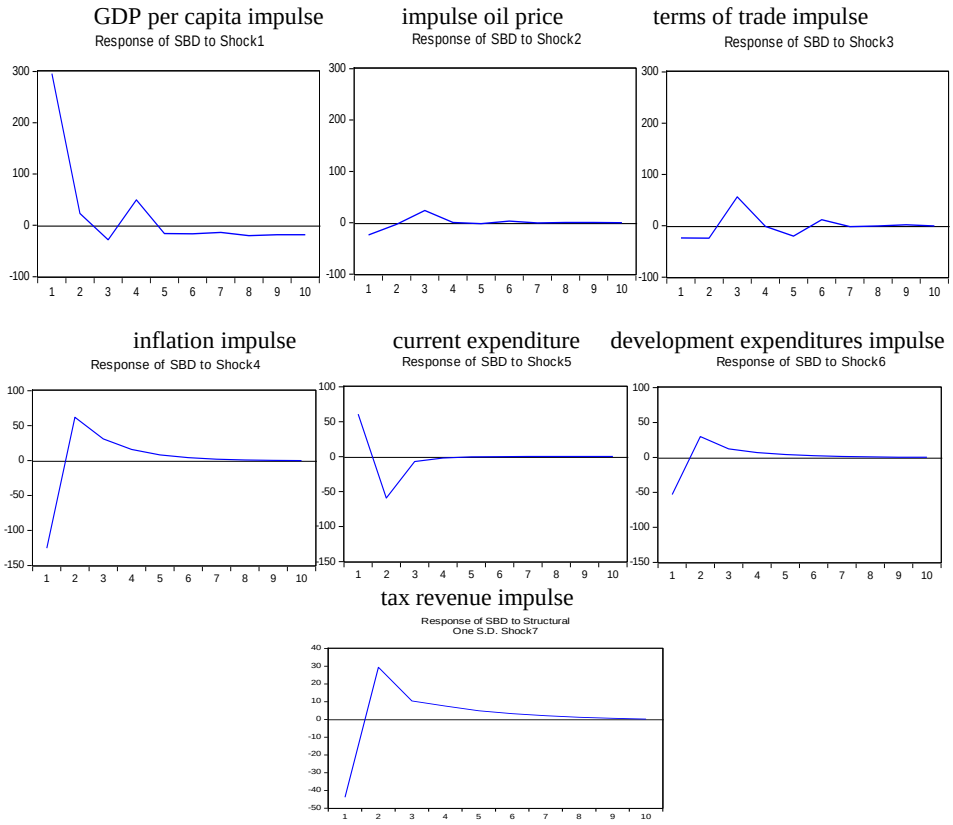

Diagram 1: Investigating the effects of effective impulses on structural budget balance

Diagram (1) shows the effect of effective impulses on structural budget deficit. It is important to note that in analyzing the effect of impulses on structural budget deficit, an increase in oil price and the resulting increase in government revenues lead to the government's increased discretionary decisions and more discretionary expenditures than tax revenues in Iran. This leads to structural budget deficit. Therefore, as the above diagram shows, the increased oil price and government's current expenditures result in an increase in government's discretionary decisions and, consequently, increased structural budget deficit. Moreover, the factors such as the growth of GDP per capita, an increase in development expenditures and improvement of trade relationships and, consequently, terms of trade as well as inflation lead to a decrease in discretionary financial decisions and, hence, the structural budget deficit.

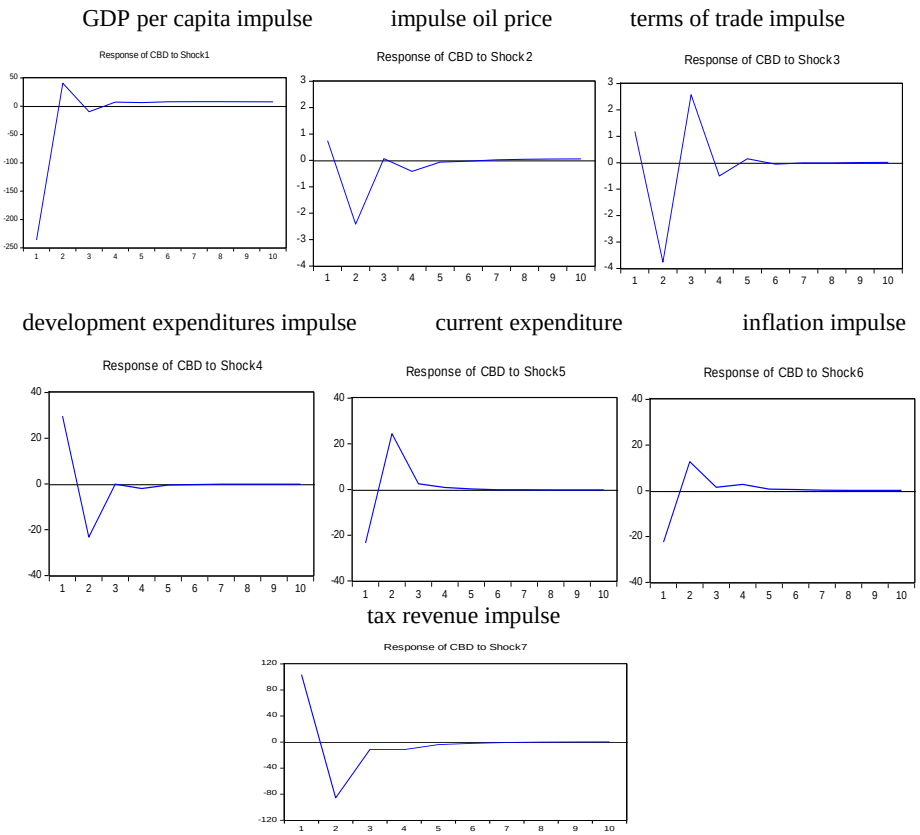

Diagram 2: Investigating the effect of effective impulses on cyclical budget balance

Diagram (2) shows the effect of effective impulses on cyclical budget deficit. Out of the impulses investigated in cyclical budget deficit matrix, the following impulses result in an increase in cyclical budget deficit as well as decreased power of automatic policy stabilizer and, hence, a reduction in the production fluctuations: terms of trade, GDP per capita, inflation and tax. The following impulses lead to a decrease in cyclical budget deficit as well as a decrease in the power of automatic stabilizer: oil price and current expenditures.

Moreover, the results of analysis of variance related to cyclical and structural deficit in Iran show that oil price impulse has the strongest effect on both structural and cyclical budget deficit compared to other impulses. This shows that Iranian government and the decisions made by the statesmen rely on oil price and the resulting oil revenues. The analysis of variance related to structural budget deficit model shows that oil price plays a very important role in discretionary decisions in Iran. The minor share of tax in the changes in the structural budget deficit shows the reliance of government's structural budget on oil revenues as well as the minor contribution of tax revenues to the government's discretionary decisions due to the ineffective tax system in Iran. Such a policy influences Iran's economy through automatic financial policies

stabilizer. Furthermore, the results of analysis of variance showed that expenditures constitute, by far, the discretionary financial policy in Iran. Therefore, as current expenditures make up the lion share of expenditures in Iran, the structural budget deficit increases.

3. Conclusion

Generally, based on the impulse response function of cyclical and structural budget deficit matrix, it can be concluded that oil price and current expenditures as two variables result in an increase in government's' discretionary decisions and, consequently, an increase in both structural budget deficit and the power of automatic stabilizer in Iran's economy. The impulses such as the growth of GDP per capita, inflation, increased development expenditures and the improvement of trade relations and, hence, terms of trade lead to a decrease in structural budget deficit and an increase in power of automatic stabilizer. Moreover, the results of analysis of variance related to cyclical and structural budget deficit in Iran show that oil price impulse plays the most important role in the changes in both structural and cyclical budget deficit. Therefore, the government and the decisions made by the government rely heavily on the oil price and, consequently, the oil revenues.

Generally, although some economic experts recommend the adoption of discretionary financial policies in the time of deep and long-term economic stagnation, under normal circumstances and when there is no crisis, it is more useful to allow financial policies to ameliorate economic problems through automatic stabilizer and monetary mechanisms.

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