The Relationship between the Government Expenditures and Revenues in the Long Run a Case Study of Iran

Farshad Sameni Keivani
Department of Accounting, Roudsar and Amlash Branch, Islamic Azad University, Roudsar, Iran

Abstract: This study focuses the relationship between the government revenues and current expenditures in long run in Iran Country covering data 1986 2110. The research uses the annual time series data which is obtained from the website of Central Bank. The OLS method is used to estimate the liner regression to show the relationship between these variables. EVIEWS 8 and SPSS software is applied to do this survey. This paper explains the relationship between government current expenditures and revenues of taxes and oil in the long run. The results of the research state in the long run during the years of the study the coefficients of the oil revenue and the tax revenue are 0.025 and -2.32 respectively. Hence the oil revenue in the long run is one of the main factors to make a decision by the government who determine its current expenditure level. The decision makers in Iran can use the results of this study to make better decisions for its budget planning.

Key words: the tax revenue, the oil revenue and the government expenditures and Iran.

I. Introduction

To take a good decision and to improve their societies, the governments need to design the budget. To do its functions a government uses budget as a planning and financial tool. There is a budget deficit while the government revenues are less than the government expenditures. Vice versa, when the government expenditures less than its revenues it is said that the government has budget surplus. There are always the budget deficit all of years during all of years of this study. In other words, the budget deficit is a characteristic of Iran economics. The budget deficit is determined by calculation of the difference between government expenditures and revenues. Some time the governments to reduce the unemployment rate at their societies use the budget deficit policy but having the budget deficit in the long period not only is a policy but also is a problem for society that it needs to solve. To solve this problem the government should reduce its expenditures or it should increase its revenues resources.

The budget revenue resources should be stationary and they must have the lowest fluctuations. Strongly dependent budget with the production of a goods shows the government have to change its expenditures or revenues. To achieve these aims the government should know the relationship between government revenues and expenditures. It has been observed that in some cases revenue increase or expenditures reduction affect on its corresponding variable and makes the adopted policy ineffective. So before to make a decision about reducing of the expenditure or increasing revenues it is important to know the amount of dependences of those variables that affect on the government expenditures.

One of the most important topics which have not been done enough research is the relationship between the government revenues and the expenditures especially in the long run. To obtain the appropriate financial policy to reduce or remove budget deficit it is necessary to find the relationship between government revenues and expenditures. In fact it is very important that the government informs the budget how much is affected from each of the revenues and which one of the revenues is the most effective.

Before any decision on how to reduce or remove the budget deficit the relationship between revenues and expenditure should be estimate. The government expenditures even have increased in some the years its revenues have declined in Iran you can see the following graph:

![Graph showing the relationship between government revenues and expenditures in the long run in Iran](image-url)
The Relationship between the Government Expenditures and Revenues in the Long Run: A Case Study

Where

EX = the government current expenditures in Iran
TAXR = the tax revenues in Iran
OILR = the oil revenues in Iran

The ratio of the oil revenues to current expenditures has always been too high. Even in some years, it has been about one. You can easily see in the following diagram:

![Graph showing the ratio of oil revenues to expenditures over time]

However, the ratio of the tax revenues to the government current expenditures has never been more than 60 percent. You can see this matter at the following graph:

![Graph showing the ratio of tax revenues to expenditures over time]

The main objective of this research is to determine the relationship between government revenues and expenditures in order to cope with Iran's budget deficit in the long run. Determination of this relationship will help the government make a good decision to reduce or remove the budget deficit.

Over the recent years, some studies have been conducted on the effects of budget deficit on Iran's economy. For example, Blackley (1986) found that raises in federal tax revenues precede raises in spending, and so may not cause smaller federal deficits [9] and the other study, in 1986, was shown evidence to support the view that spending rises cause to tax rises at the federal level by Von Furstenberg, Green, and Jeong.

Most of these studies have been on the effect of budget deficit on variables like economic growth and inflation; however, no efficient study has been carried out on the relationship between government revenues and expenditures especially on the short run or if any, it was in the past decade. Therefore, the study of the causative relationship between the said variables on the basis of the latest data is suggestive of its new dimension; furthermore, since economic conditions of Iran differ from those of most countries of the world in terms of institution, structure, and organization, the research findings can enrich the literature.

The main questions in this paper are as follow:

1. Is there a significant relationship between the tax revenues and the government current expenditures in Iran on the short run?
2. Is there a significant relationship between the government oil revenues and the government current expenditures in Iran on the short run?

The main hypotheses in this study are as follow:

1. There is a significant relationship between the tax revenues and the government current expenditures in Iran on the short run.
2. There is a significant relationship between the government oil revenues and the government current expenditures in Iran on the short run.
II. Materials and Methods

The study uses the method descriptive and analytical. To achieve the goal theoretical discussions and empirical studies was conducted by library methods. The required data, the related background information on empirical studiers and literature was collected by internet and library methods. The required statistical data was gathered from statistical data of Central Bank of Iran. After collecting the secondary data, it is necessary to determine to be or not to be the stationary for the data. Unit root test of Augmented Dickey-Fuller (ADF) is applied for it. Then is used the linear regression model to estimate the relationship between government revenues and expenditures in Iran. To estimate that model, the survey applies Eiews8 Software. Then significant of the model and coefficients investigates using appropriate statistical analyzes.

The model which is applied in this research as follow:

\[ EX = \alpha_1 \text{TAXR} + \alpha_2 \text{OIL} \]

Where  
EX = the government current expenditures in Iran  
TAXR = the tax revenues in Iran  
OIL = the oil revenues in Iran

Statistical Population limits to Iran economy. The studied variables in this study are annual time series data mainly from 1986 to 2010. To determine whether the variables are long run association or not the study applies the Johansen Cointegration Test.

III. Results and Discussion

First it is necessary to check the time series data is stationary or not. There are some ways to check it. One way is Unit root test of Augmented Dickey-Fuller (ADF) which is used by this study. In order to the results of the ADF test, at 5% confidence level, all of the data are not stationary at the level but for the first differencing all of them are stationary for the first differencing. In other words, however the variables have unit root test at the level but have not unit root test while the variables are converted to first difference.

The results are as you can see at the following table:

<table>
<thead>
<tr>
<th>The names of variables</th>
<th>ADF statistics</th>
<th>The Critical Value at 5%</th>
<th>The Stationary at</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX</td>
<td>-4.371801</td>
<td>-3.622033</td>
<td>1st difference</td>
</tr>
<tr>
<td>OIL</td>
<td>-3.943905</td>
<td>-3.622033</td>
<td>1st difference</td>
</tr>
<tr>
<td>TAXR</td>
<td>-4.638827</td>
<td>-3.690814</td>
<td>1st difference</td>
</tr>
</tbody>
</table>

The linear regression model is used to describe the relationship between the government revenues and expenditure in the long run. To determine whether the variables are long run association or not the study applies the Johansen Cointegration Test. For this model the results are as follow:

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.694114</td>
<td>33.70501</td>
<td>29.79707</td>
<td>0.0169</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.283797</td>
<td>7.645068</td>
<td>15.49471</td>
<td>0.5041</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.013618</td>
<td>0.301645</td>
<td>3.841466</td>
<td>0.5829</td>
</tr>
</tbody>
</table>

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

To compare the Trace Statistic and the Critical Value at 5%, we can check the variables are co-integrated or not (you can see at the above table). In the first row, none means that is no co-integrated equation or there is no long run association. The P-Value for this hypothesis is 0.0169 or less than 5% it means we can reject the null hypothesis meaning that we can accept the alternative hypothesis. On the other hand, in the second row of the table, the At most 1 means there is one co-integrated equation. The P-Value for this hypothesis is 0.5041 or more than 5% it means we can’t reject the null hypothesis meaning that we accept the null hypothesis. So there is at most one co-integrated equation it means that the expenditures, tax and oil revenue are co-integrated, it means all three variables have long run association or they move together. Similarly, it will prove by using Maximum Eigenvalue method as you can see the below table:
The Relationship between the Government Expenditures and Revenues in the Long Run: A Case Study

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>Max-Eigen</th>
<th>0.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of CE(s)</td>
<td>Eigenvalue</td>
<td>Statistic</td>
</tr>
<tr>
<td>None *</td>
<td>0.694114</td>
<td>26.05995</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.283797</td>
<td>7.343423</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.013618</td>
<td>0.301645</td>
</tr>
</tbody>
</table>

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

The coefficients of the model for long run can found in the following table:

1 Cointegrating Equation(s): Log likelihood = -717.2134

| Normalized cointegrating coefficients (standard error in parentheses) |
|-----------------|-----------------|-----------------|
| EX | TAXR | OILR |
| 1.000000 | -2.322529 | 0.024595 |
| (0.12743) | (0.11800) |

Thus in general, the coefficient of the TAXR is -2.322529 at the long run during the period of 1986-2010 and the coefficient of the OILR is 0.024595 at the long run during. Hence the oil revenue in the long run is one of the main factors to make a decision by the government who determine its current expenditure level. In other words, the government oil revenues play a main determining for the government current expenditures at the long run. So it is necessary to change the budget policy to reduce or remove budget deficit.

IV. Conclusions

This survey explains the roles of the tax revenue and the oil revenue to determine of the government expenditures in Iran during 1986 to 2110. This study says how government revenues changing affect on government expenditures. The results of the study show the oil revenue is one of the most important factors to determine the government current expenditure level in Iran at the long run. Therefore the results of the research can be useful for the decision makers to take a good decision in order to reduce or remove the budget deficit.

References

The Relationship between the Government Expenditures and Revenues in the Long Run: A Case Study

[18] Hadi Safahi Esfahani and Hoe Jeong Kim, (2000), On Hiding and Revealing Public Debt, Department of Economics, University of Illinois at Urbana-Champaign
[38] Sill, K. (2005), Do Budget Deficits Cause Inflation?, Business Review , 26-33
[44] www.cbi.ir