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# The Re-analysis of the Relationship between Government's Income and Expenditure in an Oil-based Economy with TVPFAVAR Approach (Iran as the Case of Study)

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**ABSTRACT**

Oil incomes play important roles in the budget structure and government expenditures of oil-dependent economies. The existence of such an economic structure has made the causal relationship between government's incomes and expenditures a debatable issue for economic decision-makers. In the previous studies, the relationship between the two variables of Iran's incomes and expenditures was considered linearly, while the nature of these two variables is non-linear. Due to the limitations of econometric techniques, the non-linear investigation of these variables has not been carried out thus far. Models with changeable parameters over time have solved this problem. So in the present study by applying TVP FAVAR method in MATLAB software and employing seasonal data from 1989 to 2015, attempt has been made to accurately explore the relationship between government's incomes and expenditures. The results of the study demonstrated that the coefficients of income - expenditure over time have a non-linear fluctuation mode. Therefore, simultaneous fiscal policy hypothesis is confirmed for Iran.

**Keywords:** Oil shocks, Income-expenditure Relationship, Government, TVP-FAVAR
**JEL Classifications:** C13, C18, H50, H20

## 1. INTRODUCTION

Iran, as a member of OPEC, both affects and is affected by world oil markets. Transient increases in oil incomes caused government's expenditures to increase and remain at a higher level. Even with lowering prices and oil incomes, government's expenditures are resistant to reduction. Unexpected changes in oil prices on the international volatile markets have always influenced economic planning (due to the dependence of budget on oil and the high proportion of government in the economy). Given such economic structures as well as limitations of econometric techniques, the causal relationship between government incomes and expenditures have remained a debatable issue for economic decision-makers, since in the previous studies the relationship between the two variables of income and expenditure was considered to be linear. That is, a coefficient for the entire period is estimated and based on that coefficient, causality has been determined. But the nature of these two variables' relationship is non-linear i.e., the ratio between these two variables can be changed at any time. However, due to limitations of econometric techniques, studying this issue non-linearly has not been done yet. Models with changeable parameters over time solved this problem. So in this paper, by employing TVPFAVAR method, an accurate exploration of government's income-expenditure relationship has been carried out. In fact, it is of importance for policy makers to understand the relationship between government's income and expenditure, to prevent continual budget deficit. If the presumed income - expenditure hypothesis for Iran holds true; implementing policies to stimulate government income can offset the budget deficit.

Accordingly, this research study aims to identify the relationship between government's incomes and expenditures by using TVPFAVAR patterns. This study is written in five sections. Following the introduction which was just discussed, in the

second part, the literature of the study which includes theoretical foundations, principles and empirical literature and innovation, will be reviewed. And the third part introduces the model and its analysis. Finally in the fourth section, conclusions and political recommendations are presented.

## 2. LITERATURE REVIEW

### 2.1. Theoretical Foundations

Overall, four main hypotheses about the relationship between income and expenditure exist:

- The first hypothesis
  Income-expenditure hypothesis: According to this hypothesis, there is a one-way relation from the expenditure to the income. This view is based on the effect of exogenous shocks, such as war, sanctions and tense economic situation, atmosphere of political instability and natural disasters, on increasing government expenditures and consequently raising taxes as a source of government income.

According to this hypothesis, the government spends at first and then decides how to meet the costs through higher taxes, if necessary. If the permanent or temporary increases in government expenditures sooner or later lead to higher taxes, a causal relationship will be established between the incomes and the expenditures of the government. People like Peacock and Wiseman (1961) confirm this theory and believe that certain situations such as political or economic crises that lead to an increase in government's expenditures will eventually force the government to raise taxes. According to this hypothesis, to deal with budget deficit, the government must reduce its expenditures, especially in the absence of crises.

This assumption is in line with the Barro's tax smoothing theory and Ricardian equivalence framework. This means that from a rational tax payer's point of view increasing the expenditures at present time (with no fiscal illusion) is equal raising taxes in the next period (Saunoris and Payne, 2010). In economy literature, the income-expenditure hypothesis is presented in the form of two models by Carneiro et al. (2004) and Hoover and Shefrin (1995). Carneiro et al. (2004) express the income-expenditure hypothesis in a simple hypothetical economic model for a poor mono-product country. The assumptions of this model are as follows:

- The economy in this country has a major part which is the agricultural part specializing in producing (Y) and exports X amount of this product. Therefore, it can be written: $\alpha Y = X$ Where $0<\alpha<1$. Without the reduction of generality, it is assumed that the; $a = 1$.
- In view of the fact that the hypothetical economy of this poor country lacks the financial market, it can be assumed that investment with respect to inelastic interest rates and savings is an ascending function of the production level. In other words, can be written: $\begin{matrix} I=\bar{I} \\ S=S(Y) \end{matrix}$.

The amount of the exports of the product depends on the global price (P) (which reflects the supply and demand shocks), foreign income level ($Y^f$) and exchange rate ($\pi$): $X = X(P, Y^f, \pi)$.

- The amount of imports (Z) is an ascending function of domestic income (Y) and descending function of the exchange rate: $Z = Z(Y, \pi)$.
- In this economy, fixed exchange rate system applied by the central bank, thus: $\pi=\bar{\pi}$.
- The objective of monetary policy by the Central Bank is to provide price stability and reduce inflation. To achieve these objectives, the central bank uses fixed interest rate and credit control policies. In the other words: $\begin{matrix} r=\bar{r} \\ V=\frac{Y}{M} \end{matrix}$.

Where, r is the rate of interest, and v is the velocity of money. Therefore, money market equilibrium can specify price level: $\frac{M}{P}=L(Y,r)$.

It is assumed that government has two major income sources: Taxes on exports and imports. Therefore, government income can be written as follows: $T = T(x)+T(Z)$.

Due to the lack of transparency, poor governance, corruption, mismanagement and inelastic demand for public services, government expenditure in a poor country with a weak economy, is always above the level needed to balance short-term funding ($\bar{G}$). Based on this assumption we can write: $G>\bar{G}$.

The mentioned model specifies the equilibrium level of endogenous variables G, r, M, I, X, Y, Z, S, P, T. This pattern is a reversal pattern and is solved by placing the equations in each other. The important point is that government expenditures are specified prior to the incomes of government. In other words, the level of government expenditures determines the level of its incomes. We can conclude that government expenditure is a Granger cause for government incomes. Therefore, this model is as a special explanation for income-expenditure hypothesis.

- The second hypothesis
  Government Income-Expenditure Hypothesis: The hypothesis that has been emphasized by Friedman and Wagner states that there is a one-way relationship between government's incomes and expenditures. That's to say, the increase in government's incomes leads to an increase in expenditures and consequently imbalances the budget.

According to this hypothesis, governments adjust their expenditures with their income level. According to the traditional beliefs that prevailed in the eighties which were accepted by many economic policy makers, such a policy will not necessarily reduce the budget deficit, as the control of income level will limit the growth of government expenditure (Hoover and Shefrin, 1992). Friedman argues that the government should cut taxes to reduce the deficit, as controlling the tax level will limit the growth of government's expenditures. This hypothesis has been confirmed by many economists. Friedman believes in the positive causal relationship between government's incomes and expenditures, but Buchanan and Wagner (1977) believe that while cutting taxes, this relationship is negative (Saunoris and Payne, 2010).

Income-expenditure hypothesis can be expressed in the following mathematical model:

$$G_t = f(R_{t-j})$$

$$\Delta G_t = f(\Delta R_{t-j})$$

Where, $G_t$ and $R_t$ are government expenditures and incomes respectively. According to Freedman's (increasing government incomes will influence government expenditures) $f'>0$, while based on Buchanan and Wagner $f'>0$ (by increasing government incomes, government's expenditures will be reduced).

- The third hypothesis
  Simultaneous fiscal policy hypothesis: This hypothesis suggests a two-way causality between government incomes and expenditures i.e., government taxes and government expenditures may change at the same time.

Another hypothesis which is presented by Musgrave et al. (1981) is simultaneous fiscal decisions hypothesis. According to this hypothesis, the government decides on incomes and expenditures simultaneously, and a causal two-way relationship exists between government's incomes and expenditures. Here, the optimal amount of incomes and expenditures is specified on the basis of the equality of the benefits and final expenditures of government programs (Aslan and Tasdemir, 2009).

To evaluate the hypothesis of simultaneity, Hoover and Shefrin (1992) offered the mutual cost-benefit model that will be explained in the following. Suppose that the level of welfare with the state of tax decreased rapidly, but due to increased government expenditures, welfare increases with a decreasing rate. The ultimate benefits and ultimate tax expenditures are variable. Taxes and expenditures route will be chosen in a way that the expected welfare be at maximum level. Thus, the equation of maximizing the expected welfare can be written:

$$\text{MAX} \quad E_0\left\{(\varepsilon G_1 - \frac{1}{2}bG^2) - (\eta T_1 + \frac{1}{2}eT_1^2) - \frac{1}{2}B_1^2\right\}$$

$$T_1, G_1$$

In which $B_1 = R(B_0 + G_1 - T_1)$ and the amount of $B_0$ is known, ε and η variables are white noise random shocks with a mean value of $\bar{\varepsilon}$ and $\bar{\eta}$ the amount of which can be assumed zero in long-term time series. Levels of expenditures and taxes are determined from the equality of the expected ultimate costs and expected ultimate benefits. Therefore, the first conditions are:

$$\bar{\varepsilon} - b(G_1) - R^2(B_0 + G_1 - T_1) = 0$$

$$-\bar{\eta} + e(T_1) + R^2(B_0 + G_1 - T_1) = 0$$

According to the above, it is clear that there is a two-way causal relation between the T and G.

- The fourth hypothesis
  The neutral fiscal policy hypothesis.

According to this hypothesis, none of the three above-mentioned assumptions explains the relationship between government's incomes and expenditures. And this relationship is determined by long-term economic growth. In fact, this assumption implicitly represents the institutional separation between government's incomes and expenditures.

The fourth hypothesis states that if decisions about incomes and expenditures are to be made by two separate entities, there is no causal relationship between government's incomes and expenditures. This hypothesis is confirmed in several studies (Baghestani and McNown, 1994; Wildavsky, 1988). This assumption has been examined in the form of fixed-share pattern by Hoover and Shefrin (1992). Based on the assumption of this model, government considers expenditure and tax rates as a fixed share of GDP and there is no need to coordinate the given share. For example, suppose: $\begin{matrix} G=\alpha Y+\varepsilon \\ T=bY+\eta \end{matrix}$.

Where Y is GDP and ε and η are white noise random shocks. By dividing these two equations by Y we have: $\begin{matrix} \frac{G}{Y}=\alpha+\varepsilon' \\ \frac{T}{Y}=b+\eta' \end{matrix}$.

According to the above equations, there is no causal relationship between the G and T. this is because intervention in expenditure system is applied through changes in the share of production costs (a) will have no effect on T/Y, as the intervention in the fiscal system which is applied through b will not affect g/Y either (Saunoris and Payne, 2010).

Due to heavy dependence of incomes and expenditures on oil, the above hypotheses are considerable of investigation.

### 2.2. Empirical Backgrounds and Previous Studies

Among the previous studies on the relationship between government's income and expenditure, the following ones are worth mentioning.

In a study entitled "the causality and integration test between government's income and expenditure: Considering structural breaks," Mehrara and Rezaee (2015) analyzed the Granger causality relationship between the incomes and expenditures of the government on the 1979-2012 data. They utilized Lütkepohl and Hausman test and found that the long term relation between the variables of the pattern indicate that there is a causal long term unidirectional relation between Iran government incomes and their expenditures.

Komeijani and Nazari (2015) in a study entitled "investigating the effect of oil incomes on the expenditures of Iran government through auto regressive patterns with distribution lags" explored the effect of oil incomes on the expenditures by Iran government from 1975 to 2012. They utilized the auto-regression model with distribution lags and showed that both in short and in long term oil incomes have a positive effect on government expenditure. This finding also proved the assumption of income-expenditure relation in line with Friedman's theory.

Ebaidalla (2013) in a study entitled "the causality between government expenditures and national income, evidence from Sudan" examined the causality between the income and

expenditures of Sudan government using the annual data of 1970-2008. He used error correction method and Granger causality and concluded that in the short and in the long run the direction of causality is from expenditure towards income.

Saysvmbat and Kkoilovang (2013) in their study which was entitled "the causality relation between income and expenditure in Laos" investigated the causal relation between the incomes and expenditures of Laos's government from 1980 to 2010. They employed vector error correction model and showed that there is a long term unidirectional causal relation between government's income and expenditures. The direction of this causal relation was from expenditures towards the incomes which is in line with the assumption of expenditure-income but in the short run there is no causality. These findings justifies the expenditure-tax policy of Laos.

Elyasi and Rahimi study (2011) which is entitled "the causality between incomes and expenditures in Iran's government) analyzed the causality between government's incomes and expenditures from 1963 to 2007. They used error correction model. Utilizing Granger causality test, they concluded that the causality is from expenditures towards incomes. They consider external troubles such as natural disasters and political conditions as the causes of this phenomenon and suggested a reduction in government expenditures to compensate for budget deficit.

Overall, in the previous studies the relation between income and expenditure variables is considered to be linear which generally shows as causal unidirectional relationship. However, due to coefficient changes, in practice the relation between these two variables is nonlinear i.e., the coefficient of these two variables can change annually. This can shed some doubts on the findings of the previous studies. Therefore, in the present study this relation will be reanalyzed using the model with changeable parameters over time.

## 3. RESEARCH METHODOLOGY AND THE THEORETICAL BACKGROUNDS OF THE PREDICTION METHOD

As for the scientific essence and target, the present study is applied research. The nature of our data is seasonal time series and as a result the utilized patterns are time series pattern and are presented in the TVP and TVPFAVAR econometrics formats. The sample of this study consists of the seasonal data of Iran from 1989 to 2015 and are taken from the central bank of the Islamic republic of Iran. In what follows the theoretical backgrounds of TVP and TVPFAVAR will be discussed.

According to Stock and Watson (2008), the main shortcoming of the previous calculation methods was that they could not make the right predictions in the course of time and some models could make proper predictions at boom times and some others at recession times. It resulted in the appearance of models with changeable parameters over time and Markov chain Monte Carlo models (MCMC) which could predict sizable models with la large number of variables in the course of time. In these model the stimulation coefficient could change through time. Due to changes in circumstances, structural breakdowns and cycle shifts, the previous models were not sufficient for analyzing parameters under such conditions. In addition, the number of variables and predictors can be many. The increase in the number of variables will lead to the creation of big models. In such models, whenever there are M variables in the T time period, there will be $2m^t$ prediction models (Koop and Korobilis, 2011; Khezri, 2015).

Many studies have been carried out in the format of structural models using TVP methods. Following these methods, FAVAR models became frequent in identifying factors affecting dependent variables in different time periods in a way that the combination of TVP and TVP FAVAR models provided economic and political analysts with powerful tools.

The general structure of TVPFAVAR model in Korobilis (2009) studies is as follows.

$$y_{it} = \lambda_{0it} + \lambda_{it} f_t + \gamma_{it} r_t + \varepsilon_{it}$$

$$\begin{pmatrix} f_t \\ r_t \end{pmatrix} = \tilde{\Phi}_{1t} \begin{pmatrix} f_{t-1} \\ r_{t-1} \end{pmatrix} + \ldots + \tilde{\Phi}_{pt} \begin{pmatrix} f_{t-p} \\ r_{t-p} \end{pmatrix} + \tilde{\varepsilon}_t^f$$

It assumes that each $\varepsilon_{it}$ follows the incidental fluctuations of a variable and $\text{var}(\tilde{\varepsilon}_t^f) = \tilde{\Sigma}_t^f$ possesses a multivariable-fluctuation process like what was discussed in Premieri (2005). Finally the $\lambda_{0it}, \lambda_{it}, \gamma_{it}, \tilde{\Phi}_{1t}, \tilde{\Phi}_{pt}$ Coefficients are allowed to promote in accordance with the incidental step for i = 1,…m. All the other assumptions are similar to the assumptions of FAVAR.

In a nutshell, similar to many models utilized in applied macro economy, the Bayesian inference in TVP_FAVAR proceeds by having an MCMC algorithm which includes blocks of different samples and similar algorithms.

Suppose that $x_t$ for t = 1,…, T is a n×1 vector of variables for predicting unobservable variables in the model. In addition, $y_t$ will be a s×1 vectro in the model which is comprised of the growth of growth domestic product, the growth of monetary units, the relationship between the government's income and expenditure, interest and exchange rates. The TVP FAVAR model is as follows:

$$x_t = \lambda_t^y y_t + \lambda_t^f f_t + u_t$$

$$\begin{bmatrix} y_t \\ f_t \end{bmatrix} = c_t + B_{t,1} \begin{bmatrix} y_{t-1} \\ f_{t-1} \end{bmatrix} + \ldots + B_{t,p} \begin{bmatrix} y_{t-p} \\ f_{t-p} \end{bmatrix} + \varepsilon_t$$

In the above equation, $\lambda_t^y$ is the regression coefficients, $\lambda_t^f$ is the loading factor and $F_t$ is the factor. $(B_{t,1}, \ldots B_{t,p})$ are VAR coefficients. $u_t$ and $\varepsilon_t$ are the distribution errors with a normal distribution of zero average and $Q_t$ and $V_t$ covariances. According to the assumptions of the literature of the models' factors, it is assumed that $V_t$ is diametric.

Loading coefficients $\lambda_t = \left( \left( \lambda_t^f \right)', \left( \lambda_t^y \right)' \right)'$ and model coefficients $\beta_t$ = VAR.

$\left(c_t', vec\left(B_{t,1}\right)', \ldots vec\left(B_{t,p}\right)'\right)$ are extracted in line with a fluctuation step process per time:

$\lambda_t=\lambda_{t-1}+v_t$

$\beta_t=\beta_{t-1}+\eta_t$

Where there are $\eta_t \sim N(0,R_t)$ and $v_t \sim N(0,W_t)$. Equation 18 is called TVP-FAVAR model.

All the errors in the above function uncorrelated with each other and with time. Therefore, they have a structure which is as follows:

$$\begin{pmatrix} u_t \\ \varepsilon_t \\ \upsilon_t \\ \eta_t \end{pmatrix} = N\left(0, \begin{bmatrix} V_t & 0 & 0 & 0 \\ 0 & Q_t & 0 & 0 \\ 0 & 0 & W_t & 0 \\ 0 & 0 & 0 & R_t \end{bmatrix}\right)$$

## 4. MODEL ESTIMATION

### 4.1. The Analysis of Data Durability

In this section, the durability of the analyzed data is analyzed through Augmented Dickey Fuller Test in Tables 1 and 2. Before going to the results of Augmented Dickey Fuller Test, the time-series nature of the data is demonstrated.

Table 3 shows that the variables of government income and expenditure are both durable.

Since the analyzed variables are at a durable level, there is no need to consider the long term relationship between these variables. In what follows, the VAR model is calculated and the optimum pause is determined. Before considering VAR model, the optimum pause is identified and finally the causality between the income and the expenditure of the government is investigated.

According to the information indices, in the present study the optimum pause is determined to be 6 (Table 1). In the following Granger Causality Test will be used to show the Granger relation among the variables of the present study. The results of this test are presented in Table 2.

Based on the results of Table 2 which reveals that the Granger causality relation holds between the variables of income and expenditure, it can be inferred that in each equation the significance level is below 5%. Therefore, it can be said that there is a two-way relationship between the variables of this study and the two variables of this study are capable of being analyzed in a VAR equation. But since in a VAR equation, the possibility of coefficient estimation is equal to the number of optimum pauses, it is not possible to estimate all the coefficients for all time periods. Consequently, TVP model will be employed to help reaching this goal.

### 4.2. Calculating the Relation between Income and Expenditure Through Time

According to the explanations presented in the previous sections, ordinary least squares and the vector regression itself is not capable of calculating the relation between the government income and expenditure because these models are linear and can estimate only one coefficient in the whole period while determining the income-expenditure relations requires the use of estimation coefficients in each period. The TVP model provides us with such a capability (non-linear model). Since TVPFAVAR models are among the nonstructural models, in modeling this method only the theoretical backgrounds which are related will be used and it is not possible to identify how the variables of the study are related to each other. Therefore, the modeling of TVP is generally as follows:

$$\begin{bmatrix} TC_t \\ TR_t \end{bmatrix} = c_t + B_{t,1}\begin{bmatrix} TC_{t-1} \\ TR_{t-1} \end{bmatrix} + \ldots + B_{t,p}\begin{bmatrix} TR_{t-p} \\ TC_{t-p} \end{bmatrix} + \varepsilon_t$$

As the above equation shows, in TVP method, in each period the coefficients between TR and TC can be calculated. The estimation of the coefficients through time makes it possible to calculate the income-expenditure relations according to these coefficients. The flow of these coefficients is displayed in Figure 1.

According to Figure 1, the coefficients of the income-expenditure relations are fluctuating and nonlinear through time in a way that in most time periods the relationship between the two variables is positive. In other words, in most time periods the government has more expenditures than its incomes. At the beginning of the period the slope of the figure is ascending but at the end it is descending. Therefore, the assumption of the simultaneity of fiscal policy and the existence of a two way relation between the variables of income and expenditure is proved.

**Table 1: The optimal lag of the model (VAR lag order selection criteria)**

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | −1091.931 | NA | 10884744 | 21.87863 | 21.93073 | 21.89971 |
| 1 | −982.6717 | 211.9636 | 1326051 | 19.77343 | 19.92974 | 19.83670 |
| 2 | −973.2281 | 17.94276 | 1189419 | 19.66456 | 19.92508* | 19.77000 |
| 3 | −967.4601 | 10.72860 | 1148430 | 19.62920 | 19.99393 | 19.77681 |
| 4 | −966.9179 | 0.986847 | 1231298 | 19.69836 | 20.16729 | 19.88814 |
| 5 | −958.2448 | 15.43796 | 1122345 | 19.60490 | 20.17803 | 19.83686 |
| 6 | −948.6579 | 16.68136* | 1004864* | 19.49316* | 20.17050 | 19.76729* |
| 7 | −946.7234 | 3.288543 | 1048925 | 19.53447 | 20.31602 | 19.85078 |
| 8 | −942.5475 | 6.932053 | 1047443 | 19.53095 | 20.41671 | 19.88943 |

LR: Sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion, HQ: Hannan-Quinn information criterion, *According to the index (LR), is significant at 95% confidence level.

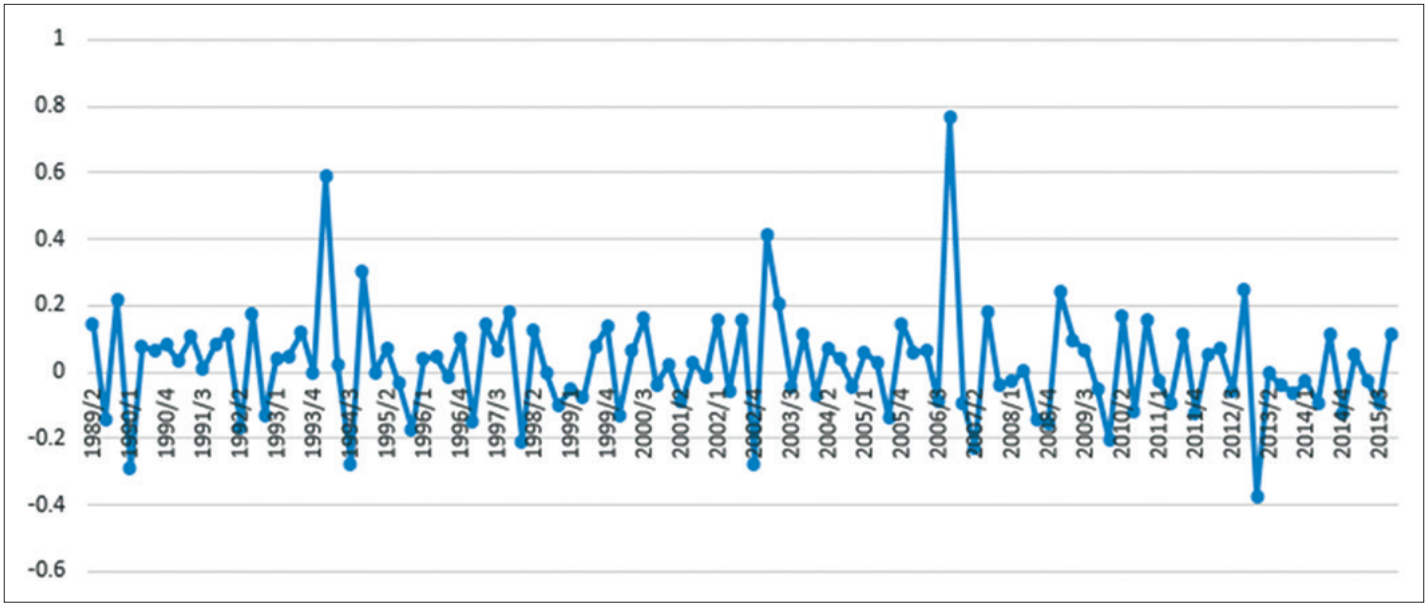
**Table 2: Granger causality between income-expenditure variables**

| VAR granger causality/block exogeneity wald tests | | | |
|---|---|---|---|
| **Dependent variable: PAY** | | | |
| **Excluded** | **Chi-square** | **df** | **P** |
| TR | 22.74821 | 6 | 0.0009 |
| All | 22.74821 | 6 | 0.0009 |
| **Dependent variable: TR** | | | |
| **Excluded** | **Chi-square** | **df** | **P** |
| PAY | 17.70747 | 6 | 0.0070 |
| All | 17.70747 | 6 | 0.0070 |

**Table 3: The results of Augmented Dickey-Fuller test statistic**

| Variable name | Status | Statistical amount | Critical amounts | | |
|---|---|---|---|---|---|
| | | | At 1% level | At 5% level | At 10% level |
| PAY | With the intercept and slope | −4.71 | −4.04 | −3.45 | −3.15 |
| TR | With the intercept and slope | −4.96 | −4.04 | −3.45 | −3.15 |

**Figure 1:** Coefficient changes in income-expenditure relations through time in TVP method




## 5. CONCLUSION

In the previous studies the relationship between the variable of income and expenditure in Iran's government has been assumed to be linear. It means that the estimation has been carried out for the whole period and the causality has not been identified. Based on the nature of these two variables, the relation them is nonlinear i.e., the relation between these variables is changeable in the course of time. However, due to the limitation of econometrics methods, this issue has not been examined non-linearly by far. The models with changeable parameters over time have solved this problem. Therefore, in the present study TVP FAVAR model was used to examine the seasonal data from 1989 to 2015. In order to fathom the exact relationship which exists between government incomes and expenditures. According to the outcome of the model, the coefficient of the relation between income and expenditure is fluctuating in a way that in most time periods the relationship between income and expenditure is positive. In other words, in most time periods the government has more expenditures than its incomes and the bidirectional relation between government incomes and expenditures is proved. The assumption of the simultaneity of fiscal policy is therefore proved. It means that there is a causal relation between government's incomes and expenditures. That's to say that government expenditures change synchronously and the change in each variable will cause a change in another variable.

Hence, economic policy makers can make use of this relation between government's income and expenditures to prevent the continuous budget deficits, the policies of resource and consumption management should be established simultaneously and that control unidirectional policies are not compatible with the behavior of the examined variables in particular and the economic structure of Iran (as an oil-dependent economy) in general.

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