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THE GRANGER CAUSALITY OF INFLATION RATE, OIL REVENUE AND TAXATION IN IRAN

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Abstract

Since oil has become the source of income and main commodity produce for Iranian economy, the development of other economic sector has been neglected. Fluctuations of oil prices lead to unreliable situation in the main macroeconomics variables. This phenomenon (relying on natural source revenue) leads to lower the public scrutiny of government to people, and on the other side it leads to lack of motivation to foster private sector activities in development prospects. This paper attempt to analyze the causal relationship between inflation rate and income sources in Iranian government. Oil and tax are selected as two proxy of income sources. The result from granger causality test based on Vector Error Correction Model (VECM) suggests positive unidirectional causality from oil revenue and corporate tax with prices level and negative unidirectional income tax and prices level in long run. The Granger causality test based on VAR test suggests that there is only significant unidirectional in oil revenue and price level in the short run.

Keywords: Macroeconomic variables, Inflation rate, VAR Model, Granger Causality, Taxation, Iranian economy

INTRODUCTION

Debating about the exploitation and discovery of oil, the history goes back to a long time ago, particularly in Iran. That which determines the root of Iranian economy, is what we call the extraction of natural resources. The first oil field was discovered in 1908. As a matter of fact, oil has become the source of revenue and major commodity production for Iran economy; due to that, other economic sectors have been ignored in comparison. What guides us to unreliable circumstances in macroeconomics variables, is frankly fluctuation in oil expenses. Those other surveys done by other researchers in great amount, manifest the consecutive convertibles in oil production in term of modifying of oil prices the quality of oil exports. What we already mentioned, has a profound impact on economic activities regarding its other affection on variables such as inflation, real exchange rate, money supply, trade balance, real interest rate and etc. In addition, those having considerable effects on monetary and fiscal policy meaning by fluctuations in oil revenue, can differentiate according to the country. Hamilton (1983) indicated that what oil shocks emerge have deep affections on US economy, which resulted from 1949 to 1973. In various periods, the influences of oil revenue and its shocks can vary from each other. As a model, Hooker (1996) stated the following; “From 1973 to the present period, Granger causality of diversity of US macroeconomic variables are not the same.” Mentioning exporting countries, the majority of them are highly dependent on oil revenue presently.

Esfahani et al. (2012) indicated in two past decades that the ratio of oil revenue to GDP was about 26 percent in members of the Organization of the Petroleum Exporting Countries (OPEC) namely Kuwait, Libya, Nigeria, Saudi Arabia, and Venezuela. In the Middle East, extreme depending of those countries exporting oil have led to become ignorant in relation to developing other channels as sources of government incomes. What these channels contribute to the people, are manufacturing goods and different rates of taxation. In a recent research done by Bornhorst et al. (2009), he recommended that a balance exists between two significant materials; natural resources endowment as revenue which originates from other domestics such as taxation. What they researched on as an examination was the offset between government revenues from activities associated to hydrocarbon (oil and gas) and earnings from other inward sources in a panel of 30 hydrocarbon producing countries. What they acquisitioned as a consequence, was important negative relationships between domestic resource gaining and natural resource incomes.

In fact, what this phenomenon brings on (relying on natural source revenue) is lower public scrutiny of government from people. On the other side, some lack of motivation emerges to foster private sector activities in expanded viewpoints. What separates these two factors from each other, depending on oil revenue and tax revenue, is stability and predictability. We

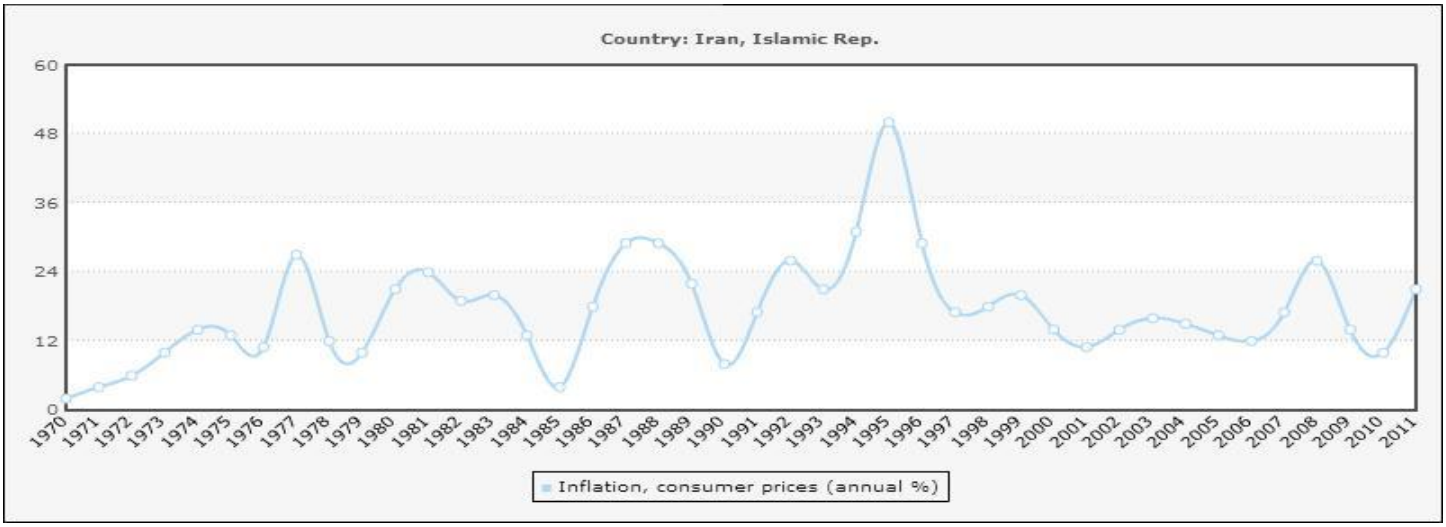
conclude that since the first oil price shock in 1973 oil revenue cannot be reliable as a source of income for exporting countries. What couldn't be foreseen was oil shocks. The reason for reaching the existence of fiscal management is fiscal dependence on the hydrocarbon sector and in addition non-oil accomplishing which is a ruthless challenge of oil exporting in countries (Anshasy & Bradley 2012).

What our effort is based on in this paper, is considering the relationship between the treatment of consumer price, oil revenue and taxation revenue as two diverse resources in the Iran economy. We will employ Granger causality and the VECM as methods for data analysis in the short run and long run.

HISTORY OF INFLATION IN IRAN AT A GLANCE

Inflation is one of the most sensitive and controversial debate among the policy makers and economists. The prices level in the market was debate between economist from former economists such as Smith and Ricardo hitherto. Inflation can be respond by many fluctuation in macroeconomics activities. Inflation is a notable and prominent issue in the Middle East countries, especially Iran. As Figure 1 shows the price level has been fluctuating since the revolution in 1979.

Figure 1: Fluctuations in Consumer Prices in the Iranian Economy



Data source: World data bank

In four decades, The Iranian economy has been confronted with some significant internal and external events such as Iran-Iraq war, first gulf war, etc. The first phenomenon that caused a strong shock to the economy of Iran was 8 year Iran-Iraq war. Although external events has made difficult situation for Iranian economy as well as the internal changing such as negative

trade balance due to heavy dependence on export oil, misconstruing on the allocation of credit and foreign exchange, distortions in the pricing system including the exchange rate and interest rate cause imbalances in the supply and demand for goods and services (Chavoshzadeh et al. 2012). These elements caused inflation to hike up in range of 20 percent to 30 percent in recent years. Many researchers and scholars have anticipated the causality between macroeconomic variables and changes on price level.

Bruno and Easterly (1998) found an ambiguous relationship between growth and inflation. But it can be determined that the growth rate of the economy will be lower in high levels inflation. By considering Mankiw (1989), we figure out that inflation has no direct negative or positive relation with different situations in the economy. Mankiw (1989) stipulated that inflation goes up during booms in economy and goes down during recessions. Furthermore, inflation not only has relationship with internal factors but it can be influenced by external factors. Badinger (2009) provided a study of the linkage between globalization and inflation, by using cross-section of 91 countries over the period 1985-2004. He found a significant negative relationship between inflation and financial openness. It should be kept in our minds that financial openness and trade can affect inflation. Other studies imply that increasing trade and financial deepening can be advantageous in reducing the annual rate of inflation in condition that inflation rate lays between 4% and 19%. (Rousseau & Yilmazkuday 2009).

LITERATURE REVIEW

Oil Revenue

Along with advances in production techniques in manufacturing and industrial sectors the requirement for raw materials such as oil and gas has increased more than before. Oil plays important strategic role in Iran's exports. In fact, Iran is one of the largest oil exporting countries in the world. Since a major share of Iran's budget earnings comes from oil revenue. (Farzanegan & Markwardt 2009).

Oil revenue and consequently, oil price shocks not only affect the macroeconomics variables and economics activities in oil-exporting countries, but it led to some influences on velocity of economic growth in oil-importing countries. Oil revenues shocks (increases or decreases in oil revenue) lead to transmission of performance between sectors in economics structure. Oil booms and consequently, oil recessions have significant influences on economics activities from different aspects (Emami & Adibpour 2012). First channel that oil revenue is impression to the economics activities have been mentioned by Barro and Salla (1992). Barro and Salla indicated that governments exert oil dollars to financing expenditures after rising oil revenue. They mentioned that fiscal policy will expand due to increasing oil revenue.

In addition, expansionary fiscal policy on a result of rising oil revenue will lead to governors invest on public goods and infrastructure parts (Barro & Martin 1992). Impression on monetary policy is the second channels of transmission from energy economics on other sectors. Along with growing oil earnings available oil dollars will increase. The government usually sells the available dollars in the free market to exchange for the local currency. In such conditions it causes an appreciation of the local currency against the foreign currency as well as prices of imported goods will be cheaper for domestic consumers (Emami & Adibpour 2012).

Many researchers have concentrated on oil revenue shocks in developed countries. Headmost studies of oil revenue and its shocks back to the decade of the 1980s by Darbi (1982) on the US economy. Although Darbi (1982) found no significant relationship between oil price and price of goods but Hamilton (1983) underscored that oil price shocks have severe influences on economics activities from 1949 to 1973. Blanchard and Gali (2007) gave some different evidence in effects of oil prices on macroeconomics variables from the 1970s to 2000 in a group of industrialized economies. They achieved five main conclusions. The first one is considering the influences of oil price shocks with large shocks of a different nature simultaneously. They have provided some documentation on other goods prices were important in spite of others were not important. The other conclusion was about different impact of oil shocks on macroeconomics over time. The third conclusion is plausible from the first result. They believe that these fluctuations decrease real wage rigidities. Such rigidities are required to generate the type of large stagflation in response to adverse supply shocks such as those that happened in the 1970s. The fourth in which plausible from second is the rising credibility of monetary policy. And finally, the fifth conclusion is that a third plausible cause for these changes is simply the decrease in the share of oil in consumption wage to the marginal rate of substitution and thus unemployment appears to have increased over time.

Despite of consideration of researchers on developed countries in their studies, but there are a few workouts about developing countries. We will mention some of these studies. Eltony and Alwadi (2001) examined oil price shocks and oil earnings on seven macroeconomics variables in Kuwait. Their examination indicated that there is high degree of interrelation between oil revenue and government development as well as all revenue and current expenditure. Raguindin and Reyes (2005) shed light effects of oil price shocks on some macroeconomic variables in Philippines economy from 1981 to 2003. They pointed out in which oil price shocks cause to deepen reduction in the real GDP of Philippines. It’s remarkable that they found oil price decreases has stronger impacts on variable’s fluctuations than oil price increases.

Berument, et al. (2010) studied to examine how oil price shocks can affect the output growth of selected MENA (Middle East and North Africa) countries. Their prediction suggest that rising oil price have a notable and positive effect on the output of Algeria, Iran, Iraq, Kuwait, Libya, Oman, Qatar, Syria, and the United Arab Emirates. But at other side oil price shocks do not bear effects on the outputs of Bahrain, Djibouti, Egypt, Israel, Jordan, Morocco, and Tunisia (Berument et al. 2010).

Eltejaei and Afzali (2012) studied the impact of oil revenue fluctuations on some macroeconomics variables in the Iranian economy during the period 1990 to 2008 with quarterly data. They found that the positive shocks lead to economic growth. They also estimated that fluctuations in oil price and oil revenue cause to inflation, government current and capital expenditure take quite asymmetric response to both negative and positive shocks (Eltejaei & Afazali 2012).

Our analysis not only considers the impact of oil revenue on inflation but also the effects of tax revenue as important source of income. In next section we will present some literature about taxation.

Taxation Revenue

The main sources of earnings for non-oil countries are taxation. In recent years majority of countries transmitted their earnings from natural sources to human sources due to volatility and unstable of natural sources. Tax reform has complex influences on main factors of economics simultaneously. Tax reforms implemented by countries have resulted in an increase indirect taxes which cause the consumer price index (CPI) and simultaneously, the tax reform lead to an increase in the after tax income of consumers (Diewert & Fox 1998).

Nashashibi and Bazoni (1993) studied tax revenue nexus and exchange rate, terms of trade and import liberalization across 28 countries in Sub-Sahara. They implied that undermining tax base will lead to fall exchange rates, declining terms of trade and decreasing liberalization.

Koreshkova (2006) stated that undergrounding and formal sectors of the economy have distinct impacts on different aspects of economic activities generally and tax revenue particularly. He mentioned that the underground sector of the economy are vast in poor countries relative to rich countries. His results indicate that the size of the underground sector negatively correlated with per capita GDP. Average CPI is so high across countries that have large underground economies. Also, he found that the inflation rate is negatively related to tax revenue.

METHODOLOGY

In recent years, countries that are well endowed with natural resources such as mineral or hydrocarbon materials as well as imposed taxes on corporations or individuals even. Volatility of energy prices in the world market is main reason to adoption of such policy. Iran endowed in natural materials such as oil and gas and rarely imposes taxes. In this study we decide to compare the influence of earnings from natural resources and income from imposing taxation on the consumer price index.

The main objective of this study is figure out any relationship between Oil Revenue (OI), Corporate Tax (CT) and Income Tax (IT) as explanatory variables and the consumer price index (CPI) as the explained variable in the Iranian economy. The full sample comprises annually from 1971 to 2012. The data are collected in Economic Time Series Data Base section in the central bank of Iran website.

To find out the reaction of the selected macroeconomic variables on each other we use unrestricted vector autoregressive model (VAR). The VAR model presents a multivariate framework where conversions in special variable such as oil revenue are rely to fluctuations on its own lags and to changes in other variables and the lags of those variables. VAR model has some advantages over other models. The relative significance of a variable in producing variations in its own value and in the value of other variables can be assessed by using VAR model to estimation. Our unrestricted vector autoregressive model of order is presented Eq (1),

$$y_t = A_1 y_t + \ldots + A_p y_{t-p} + \varepsilon_t \quad (1)$$

Where y_t is a vector of endogenous variables A_i is coefficient matrices and p is the lag length. The maximum lag length must be specified a priori (Rosser & Sheehan 1995). So we have chosen 5 lags for full period. Our dependent variable in the equation is the log of consumer price index as showing of inflation rate. Our independent variables are oil revenue (OI), income tax (IT) and corporate tax (CT). The consumer price index model is specified as follows:

$$Log\ CPI_t = \beta_0 + \beta_1 logOI_t + \beta_2 logCT_t + \beta_3 logIT_t + \varepsilon_t \quad (2)$$

Where CPI is the consumer price index, OI is oil revenue, CT is corporate tax and IT is income tax, β_1, β_2, β_3, are the coefficients of the independent variables β_0 is the constant term, and ε_t is the random error term.

EMPIRICAL RESULTS

In order to conduct an appropriate examination of the variables in the model we have to determinate stationery of variables to recognize the suitable specification in VAR estimation. To achieving this goal, the order of integration for each variable is determined by using the Augmented Dickey-Fuller (1979) test.

Unit Root Test

In this section we are apply Augment Dickey-Fuller in order to find out whether the variable are stationary or not. The Augmented Dickey-Fuller test showed that the variables expressed stationary or not. Because most time series data are not stationary in levels since they are trending. So we examine variables in first difference to solve of this problem. If variables are stationary at levels it means that variables are integrated of order zero (y_t ~ I(0)). But if the variables are not stationary at levels we conclude that variables may be integrated of order one (y_t ~ I(1)). The results of the unit root test based on Augmented Dickey-Fuller (ADF) test are mentioned in table 1. As is obvious in Table 1 none of variables is stationary in levels so we continued with at first different of logarithm. As we showed in the first different of logarithm of all variables are integrated of order zero or y_t ~ I(0).

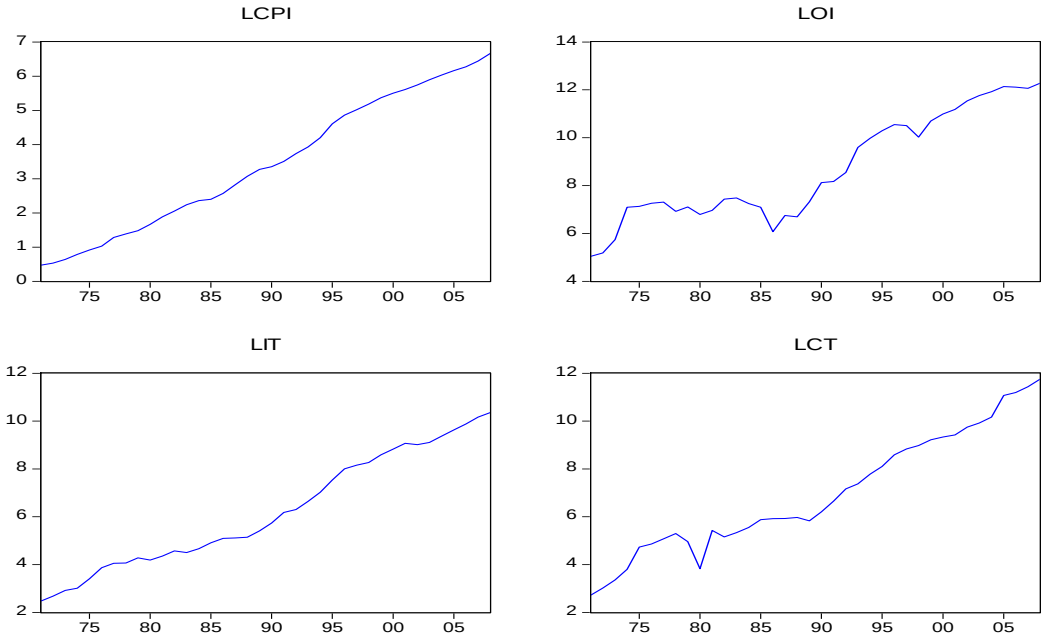
Table 1: Results of the Augmented Dickey-Fuller Unit Root Test

Variables	Level		First Difference	
	Intercept	**Intercept and Trend**	**Intercept**	**Intercept and Trend**
LCPI	0.122381	2.400906	-3.810537***	-3.764108**
LOI	-0.648114	-1.704133	-5.386884***	-5.308792***
LIT	0.272854	-1.730796	-4.345826***	-4.333892***
LCT	0.148872	-2.310949	-7.573774***	-7.504830***

*Note: *** denotes the variable is significant at 1 percent level; ** denotes it is significant at the 5 percent level.*

The ADF results indicate that all variables in the consumer price index model are stationary at the first difference at 1% level of significance, thus we will be able to use the Johansen and Juselius cointegration test to find out whether any long run relationship between the independent variables and the dependent variable in the model.

Figure 1. Time series plots for all variables



Lag Length Selection from VAR Estimates

In the second stage we take examination to find out long run relationship between consumer price index and used macroeconomic variables. Before doing the Johanson cointegration test we have to determine the optimal lag length from the VAR estimation. To access this target, in the second stage, the lag length criterion is employed to select the optimal lag order of the VAR model. We employed AIC and SC criteria to determinate optimal lag in VAR model. Table 2 shows both criteria that they are optimal in 4

Table 2: VAR lag order Selection Criteria

Lag	AIC	SC
$\mu \leq 1$	-1.708271*	-0.837505*
$\mu \leq 2$	-1.672627*	-0.792894*
$\mu \leq 3$	-1.535101*	0.775702
$\mu \leq 4$	-1.879254*	1.173467
$\mu \leq 5$	-2.322653*	1.486635
$\mu \leq 6$	-6.456104*	-1.875679*

**indicates lag order selected by criterion,*

AIC: Akaike Information Criterion, SC: Schwarz Information Criterion

Selection of the optimal lag in table 2 is based on the minimum AIC. As table 2 shows the minimum value of the AIC is at lag six. It means six lag in over VAR is the optimal lag-length.

Johansen-Juselius Cointegration Test

After determining the optimal lag in VAR model then we proceed Johansen-Jueselius cointegration test to find out any relationship based on the Trace Statistic and the maximum Eigenvalue. Table 3 shows the Johansen-juselius cointegration test based on Trace statistic to accepting or rejecting of null hypothesis. The Trace statistic works by comparing the statistic with critical value at 5% level. If Trace statistic is larger than the critical value we can reject the null hypothesis which it says that there is no cointegration across the variables. As Table 3 showed the Trace test indicates 4 cointegrating equations at 5% level. In other words, we can conclude that there is a long run relationship between log CPI and log OI, log CT and log IT. Another test to shed light on the long run relationship between variables in model is Max-Eigen Statistic. Table 3 indicates there are 4 cointegration equations at the 5% level used on the Maximum-Eigen and Trace statistic tests. So we make sure that there are significant long run relationships between the variables.

Table 3: Johansen Cointegration Test

	Trace Statistic	**Max-Eigen Value**
$\partial \leq 0$	197.2884***	96.34640***
$\partial \leq 1$	100.9420***	66.10706***
$\partial \leq 2$	34.83496***	21.25061***
$\partial \leq 3$	13.58435***	13.58435***

*Note: **, *** Denote statistical significant at the 5%, 1% level*

After having found cointegration relationship in variables we develop the cointegration equations. Table 6 shows that there are long run relationships between the independent variables and the consumer price index. The aim of this study is to examine any long run relationship exists between the variables and how are they related. Table 4 shows the normalized cointegration vector.

Table 4: Cointegration Equation Normalized with Respect to LCPI

Normalized cointegrating coefficients (standard error in parentheses)				
LCPI	LOI	LIT	LCT	C
1.000000	-0.118958	0.194779	-0.916777	4.719810
	(0.08294)	(0.31255)	(0.31628)	(0.39297)

Note: the values in parentheses are the standard errors.

Discussion of Results

From Table 4, the long run relationship for the log CPI equation can be written as follows:

Log CPI = 4.719810 + 0.118958log OI + 0.916777 log CT – 0.194779 log IT

Table 4 took place normalized equation as well as shows the sign of oil revenue and corporate tax are positive and sign of income tax is negative. By examining of signs of the coefficients in the cointegration equation we can figure out that there is a positive relationship between the consumer price index and oil revenue and corporate tax but conversely there is negative relation with income tax.

Every coefficient of the variables has a special interpretation in cointegtaion equation. For example, the coefficient of log OI states that with every one percent increase in oil revenue, the consumer price will rise 0.11 percent. It means that the money available will rise in Iran due to increasing oil revenue as the main source of earnings. Liquidity will increase due to increasing in money supply by budget surpluses. So increasing liquidity in society pushes up the demand for commodities by people thus causes to prices high levels. Oil exporting is one of the main sources of revenue for the Iranian government. Its deficit budget will be compensated by increasing oil revenue which causes to an injection of money to public.

The long run relationship between log CPI and log CT is also positive. Significantly, the consumer price index will increase by 0.91 percent for every one percent increases in the corporate tax. It means that the consumer price index will rise with the imposition of taxes on corporations by the government. It is obvious that while policy makers collect corporate tax in order to increase the treasury of government the corporations transmit to commodity prices. Producers and investors alike by transmission of taxation to consumer price take tax evasion. So tax evasion by producers cause the prices of goods to rise. But conversely, for any increase in the income tax, the consumer price index will decrease. The coefficient of log IT shows that the consumer price index will raise by 0.19 percent for every one percent increases in the income tax by policy makers. However, any fluctuation in income taxes influences the people disposable income and money available to consume. It is considerable that any rises in tax rate on income causes the amount of money people demand for buying commodities to decrease.

Results from the Granger Causality Test

However, after having found long run relationship between the variables in the model we will conduct Granger causality test to finding any short run relationship between variables. In this section we conduct Granger causality test based Error Correction Model (ECM) for all the variables as dependent variables and vice versa. Table 5 shows CPI as the dependent variable in which we found that log oil revenue has a strong effect on log CPI in short run. But there are

no influences from other variables to log CPI in short run. The significance of the coefficient of term ect (-1) indicates that all variables Granger caused the consumer price index in long run.

Table 5: Granger Causality Results with LOG CPI as the Dependent Variable

	∑DLOG CPI	∑DLOG OI	∑DLOG IT	∑DLOG CT	ect(-1)
F-stats.	0.465128(2)	8.979452*** (6)	1.637682 (6)	0.068518 (2)	2.415790**

*Notes: ect (-1) represents the error correction term lagged one period. The numbers in the brackets show the optimal lag based on the AIC. D represents the first difference. Only F-statistics for the explanatory lagged variables in first differences are reported here. For the ect(-1) the t-statistic is reported instead. *** indicates significance at the 1% level, ** denotes significance at the 5% level and * indicates significance at the 10% level.*

Table 6 shows Granger causality test results based on oil revenue as the dependent variable. It shows that there is no significant causality from the explanatory variables to oil revenue neither short run and long run. It means that oil revenue is independent against any changing consumer price index, income tax and corporate tax in short run and long run.

Table 6: Granger Causality Results with LOG OI as the Dependent Variable

	∑DLOG OI	∑DLOG CPI	∑DLOG IT	∑DLOG CT	ect(-1)
F-stats.	0.015178 (1)	0.336723 (6)	0.330401 (2)	0.284193 (2)	1.055659

*Notes: ect (-1) represents the error correction term lagged one period. The numbers in the brackets show the optimal lag based on the AIC. D represents the first difference. Only F-statistics for the explanatory lagged variables in first differences are reported here. For the ect (-1) the t-statistic is reported instead. *** indicates significance at the 1% level, ** denotes significance at the 5% level and * indicates significance at the 10% level.*

With income tax as the dependent variable in the granger causality, we resulted that income tax is unchangeable in short run. Table 7 shows that by fluctuation in variables namely, consumer price index, oil revenue and corporate tax, income tax will be fixed in short run. Otherwise, by showing stars at ect(-1) in table, we conclude that income tax can be change by changing in other variables in long run.

Table 7: Granger Causality Results with LOG IT as the Dependent Variable

	∑DLOG IT	∑DLOG CPI	∑DLOG OI	∑DLOG CT	ect(-1)
F-stats.	1.250408 (3)	0.601065 (4)	1.641104 (3)	1.678613 (6)	1.603054*

*Notes: ect (-1) represents the error correction term lagged one period. The numbers in the brackets show the optimal lag based on the AIC. D represents the first difference. Only F-statistics for the explanatory lagged variables in first differences are reported here. For the ect(-1) the t-statistic is reported instead. *** indicates significance at the 1% level, ** denotes significance at the 5% level and * indicates significance at the 10% level.*

Table 8 shows us cointegration corporate tax as dependent variable. It is obvious that variation of the corporate tax cause by variation in the income tax in short run. But on the other hand, the corporate tax is independent from changes on the consumer price index and oil revenue in the short run. By examining the significance of the ect(-1) term we result that there is a long run relationship between corporate tax and other variables.

Table 8: Granger Causality Results with LOG CT as the Dependent Variable

	∑DLOG CT	**∑DLOG CPI**	**∑DLOG OI**	**∑DLOG IT**	**ect(-1)**
F-stats.	1.682077	0.258432 (3)	0.297467 (1)	2.297126* (2)	-2.353053**

*Notes: ect (-1) represents the error correction term lagged one period. The numbers in the brackets show the optimal lag based on the AIC. D represents the first difference. Only F-statistics for the explanatory lagged variables in first differences are reported here. For the ect(-1) the t-statistic is reported instead. *** indicates significance at the 1% level, ** denotes significance at the 5% level and * indicates significance at the 10% level.*

In our model with the consumer price index as dependent variable and oil revenue, income tax and corporate tax as explanatory variables, we found notable results by using cointegration and granger causality analysis. From the cointegration test, we can conclude that the consumer price index much more dependence on oil revenue and corporate tax than income tax. By increasing oil revenue and the corporate tax the consumer price index will raise, which means that there is a positive relationship between the variables. But on the other hand, relationship between income tax and consumer price index is inverse. For every % increase in the income tax the consumer price index will fall by 0.19 % in the long run. The considerable subject is the relationship between the consumer price index and oil revenue and corporate tax is significant but the correlation among income tax and consumer price index is not significant. So, the policy makers and government should concentrate more on changing the corporate tax rate for control inflation rate rather than the income tax.

CONCLUSION

The focus of this study is examining the effect of oil revenue, income tax and corporate tax on the consumer price index. We used the vector autoregressive and Johansen-Jesilius test Granger causality test to find out any respond from variables in long run and short run. Our case is about Iran's economy by using time series data from 1971 to 2012. We were achieving all the data for the variables from Economic Time Series Data Base section in the central bank of Iran website. After applying by cointegration model we found that there is a significant relationship between the consumer price index and oil revenue and corporate tax. But the impact of income tax is not significant. So to control the inflation rate and price level using oil revenue and corporate tax are in prior for government. The other results that we get from vector error correction model (VECM). By using the granger causality test (VECM), we conclude that there is only relationship between oil revenue with consumer price index and income tax with corporate tax in the short run.

LIMITATIONS

This study examines the effect of three variables, namely the oil revenue, income tax, corporate tax on the consumer price index of Iran, using annual time series data from 1971 to 2010. The non-availability of data on the consumer price index for the decade of the 1970s was one of the shortcomings of the study. This limitation, however, was solved by changing the base year from 2005 to 1995. Another shortcoming is finding a reliable oil revenue measure. To overcome this problem we have used the average revenue of oil obtained from OPEC. Although initially we would have wanted to model the effect of the above mentioned variables on the inflation rate, but because the inflation rate is an I(0) variable, we had to settle for the CPI instead to avoid the problem of spurious regression in the cointegrating vector. However, changes in the log of CPI give the rate of inflation.

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