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Research Article

EXAMINE THE IMPACT OF OIL PRICE UNCERTAINTY ON PRIVATE SECTOR INVESTMENT IN IRAN BY USING THE GENERALIZED METHOD OF MOMENTS

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ABSTRACT
Due to the iran economy's dependence on foreign exchange earnings from oil exports, especially in the past decades, macroeconomic variables influenced heavily by fluctuations in oil revenues. The purpose of this study is to investigate the effects of oil price uncertainty on private investment in iran economy over the period from 1992 to 2012. To check the stationery of variables, unit root tests of Agumented Dickey Fuller is applied. Then oil price uncertainty measured by using EGARCH method. The Engel-Granger test is used to evaluate the cointegration. In the final step, the model is estimated by using of generalized method of moments (GMM). The econometric results shows that oil price uncertainty has a significant negative impact on private sector investment in Iran with which the main hypothesis of this research is proven.

Keywords*: Oil Price Uncertainty, Investment, Private sector, Generalized Method of Moments*

INTRODUCTION
Economies of oil-exporting countries such as Iran are heavily influenced by oil prices and its export revenues. This issue has been considered by economists especially with the first extreme uncertainty in oil prices, which today is known as the first oil shock in 1973. Today, it has different effects on the world economy, in particular, those countries which are a major supplier of oil (Eghbali and Hallafi, 2006). Since then, debate about the problems remains of the rise of oil prices and the influx of petrodollars injection into economies of most traditional of Petroleum Exporting Countries cause the fear of Dutch disease. It is created by Injection of income from export commodity prices (oil) or borrows foreign loans and their destructive effects on other sectors of the economy (Cordon and Neary, 1982).
The basic objective of the theory of investment is to study investment behavior and to recognize the factors and variables affecting on it. In momentum theory, net investment is described in connection with the expected growth rate of total production; and in its flexible form, the momentum theory holds that economic enterprises preserve a stable relationship between the capital and the whole production. Accordingly, when the amount of capital available in the economy increase or net investment takes place, it is expected that production will increase. In other investment theories, Net Present Value Criteria and Ultimate performance of investment are used in comparison with its demand (Based on microeconomic issues related to macro perspective) in which the negative relationship between key economic variable and interest rate has been studied. In addition to the aforementioned issues, factors and other variables are involved in application of investment functions and their estimation. In addition to the interest rate and the level of investment product available in all studies related to investment as explanatory variables, banking facility and administration costs also are factors that in some studies, their impact on investment are examined. However, in countries like Iran, because of the problems of capital markets and government involvement in the economy, the real interest rate is very difficult to be obtained. Therefore, in such studies, the explanatory variable of inflation is used as Alternative variable of interest rate. In addition to the above-mentioned variables which have the ability to explain most of the changes a in the

private sector, Oil shocks and uncertainty in oil prices and oil revenues is a variable that will react to it from private investment in the oil-exporting countries.

The studies discussed, it should be mentioned with regard to the searches have been carried out by researchers, the study of literature of research in relation to uncertainty of oil price on investment indicated that in addition to the lack of research done on these two variables, yet, no research has been done with this approach. Hence, this is the most important distinction that the present study has with previous studies. Foreign studies, like Lee *et al.* (1995) found that a change in the price of such a large effect on real GDP take place in an environment that Oil prices are stable; and if there was no stability, it would be unable to create these works. Oil shock is measured by variance. Their studies show that a positive and typical shock can have a positive effect on economic; but it cannot be stated about a negative shock. Rodriguez and Sanchez (2005) studied the effect of oil shocks on real GDP growth in selected OECD countries by using a VAR model. Results indicated that in all the countries studied, oil price changes do not directly affect GDP; but also indirectly through other economic variables influence GDP. Reyes and Raguindin (2005) examined the effects of oil price shocks on the economy of the Philippines. Impulse response functions for symmetric transmission of oil prices estimated showed that the oil price shock lead to the long-term decline in real GDP in the Philippines. In contrast, in asymmetric VAR model, decrease of oil price play more important role than its increase in fluctuations in each of the variables. Onour (2007), did the study to evaluate the effect of oil price fluctuations on stock return in Kuwait, Qatar, Saudi Arabia, Bahrain and the United Arab Emirates. He use the model of generalized moments (GMM) to estimate significant of visible and invisible elements of short-term fluctuations in stock price; and he use oil prices as an indicator of changes in visible economic factors in the economy of the countries around the Persian Gulf and residue of random step for imperceptible factors that have psychological effect and confidence of investors and traders in the stock market. In this study, the effects of oil price changes on market liquidity in the long run in these countries were observed and the links between these markets played an important role. However, the results suggested that in short time, visible factors were significantly more meaningful. Mohanty *et al.* (2010) in their study found that oil price shocks have significant effect on stock returns in oil and gas sectors in the countries studied. These results contrast with results of study done in oil and gas sector of the economy of developed countries that showed the positive effect of oil prices and asset values.

Of internal studies in this field, Hallafi *et al.* (2006) can be named; they examined destabilizing effect on Iran's oil exports and economic growth; Results indicated that Instability in the long-term have negative impact on economic growth. Tayyeb Nia and Ghasemi (2007) in their study found that oil fluctuations have an effective role in creating ***business cycle*** in eonomy of iran. Mehr Ara and Oskuyi (2007) concluded in their paper that the oil price shock is the most important source of fluctuations in GDP and imports between Iran and Saudi Arabia, while in Indonesia and Kuwait, import shock is the main source of GDP. This indicates that the dependence and vulnerability of the economy to oil shocks in the countries of Iran and Saudi Arabia is higher than Indonesia and Kuwait. The study done by Hadian and Parsa (2007) showed that the oil price shocks are one of the main sources of uncertainty in macroeconomic variables in Iran. Twenty percent of GDP uncertainty , thirty percent of the fluctuations in unemployment and sixty percent of fluctuations in the general level of discount seed is caused by fluctuations in oil prices. Abrishami *et al.* (2010) in their paper using GMM examined asymmetric effects of oil shocks on economic growth of the countries of OPEC and showed that economic growth and showed that economic growth in these countries have asymmetric effects in comparison with the period of oil shocks; this reaction was more severe than negative shock.

Fluctuations in oil prices can have especial effect on Iran's economy because of its high dependence on oil revenues. The importance of oil revenues in Iran's economy and its impact on the economy is undeniable. Oil and gas sector not only as one of the most important economic activities affect other economic variables, but also as an important source of revenues from the financial sector plays an important role in Iran's economy. According to the above, the effects of the uncertainty of oil prices on various economic

sectors is of particular importance that in this study, we wanted to find the effects of variables (uncertainty of oil) on private sector investment. Therefore, the research question is whether the oil price uncertainty has significant and negative effects on private investment. For this purpose, data are collected annually and the population is Iran. Given the major structural failures in the economy of Iran, including the first oil shock (1974 to 1975) , the second oil shock coincided with the Islamic Revolution of Iran (1979) , and then the outbreak of the war (1981) , the third oil shock (1986 to 1987) as a result of the decline in world oil prices and the end of the war (1989) , to fit the model correctly and avoid economic momentum calculated in the model, the time interval is selected between the survey years from 1992 to 2013. Statistics were published has been used by official institutions, especially the Central Bank of Iran, Iran Statistical Center, International Affairs, National Iranian Oil Company and OPEC Weekly Statistics and the International Energy Agency.

1. THEORETICAL FRAMEWORK

1.1. Definition of Uncertainty and Uncertainty of Oil Price

Uncertainty is a condition in which those circumstances that may occur in the future are not clear; and if you specify the circumstances, probability of occurrence of this event will not be available; When either or both of these things happen , decisions making about the future will be difficult; therefore, the space is dominated by the uncertainty on the decision. uncertainty of oil prices is the environment in which the decision -makers and economic actors are uncertain in comparison with the uncertainty of oil prices faced in the futureface. Developing countries including Iran have a high degree of uncertainty of macroeconomic variables. If severe changes in energy prices are occurred, it will impact on aggregate demand. Then, drastic changes in energy prices can cause unemployment and underemployment of production factors in some economic sectors of oil-importing countries; at the result, energy demand will be reduced; because energy demand is inversely related to its price. Increase in oil revenues over the predicted values may lead to different results. Surplus of revenues generated could increase the country's economy; it is devoted to projects and programs that will lead to further development of the country. On the other hand, it may cause the country to be caught in the trap of ambitious plans and to increase economic imbalances, such as budget deficits, Balance of payments, foreign trade deficit, even greater gap between investment and savings.

1.2. The Relationship Between Oil and the Private Sector Investment

Due to the government size in the OPEC countries, in the model of private investment, the variable of the government presence is an important point in the form of fees and regulations. Usually oil sales in these countries will be deposited into the state treasury, so a significant proportion of government expenditure is financed from oil sales. So that in the table of national accounting, government revenue is divided into two parts: Oil and non-oil. The model used in this study derived from Hermes and Lynsynk's model (2001) that is attempted to be adjusted by adding the oil shock variable. The final model is:

$$PI = f(GDP, G, P, PPN, VROSi)$$

Where PI is private investment in fixed prices in 1998, GDP is constant prices GDP in 1998, G is total government expenditures in constant prices in 1998, PP is Inflation rate (growth rate of consumer price index), PPN is credit to the private sector, and VROS is the first definition of oil shock. This relationship is defined as a semi-log function (Adding the letter L at the beginning of variables represents the logarithmic form of the model is desired):

$$I = \alpha_0 + \alpha_1 LGDP + \alpha_2 LPP_1 + \alpha_3 LG + \alpha_4 LPPN + \alpha_5 VROSi$$

$$LPP_1 = L(1 + PP)$$

The aim of the equation (3) is Logarithm of the inflation variable to be positive. It seems that entering variable of oil revenues of country is not suitable according Rials (at current prices or constant prices) as variable of the oil shock; Because the conversion of the rial-dollar oil revenues needed to determine the real exchange rate in Iran that it, itself, is controversial Variable for experts. Factors such as a sharp rise in the exchange rate In the years after the revolution, multiple official rates, preferences, and so on, and finally attempts at unification of the exchange rate leads to ambiguity in the exact definition. On the other hand, it seems that the oil price variable is not suitable for the oil shock. This is especially very important for a country like Iran. Economy in the last three decades has witnessed major developments such as the first oil shock, revolution, war and economic adjustment program. This caused the amount of oil exports despite the quota specified in OPEC to subject to the problems of non-economic and particularly political problem. As the first oil shock in revolution and increase of oil prices of 25/17 dollars in 1979 to 64/28 for $ in 1980 and decrease of export, dollar revenue from oil sales has no a significant change. Therefore, to distance from the target problem, the rate of growth of revenue from oil sales dollars can be used as base oil shock. Accordingly, an Oil shock is defined in the three modes as follows:

VROS1 = Positive or negative growth rates in years when revenue from oil sales, is higher than 25% (the same year as the oil shock is considered). Therefore, the oil shock variable is considered zero for those years that the growth rate (positive or negative) is less than 25%, one those years that the growth rate (positive or negative) is higher than 25%.
VROS2: the shock of rising oil prices: in the years of positive growth and income derived from the sale of oil is more than 25% positive, oil shock variables considered to be one and in other years zero.
VROS3: Shock of drop in oil prices: in years when the growth rate of income derived from the sale of oil is more than 25 percent negative, , oil shock variables considered to be one and in other years zero.

1.3. Measurements of Oil Price Uncertainty
According to Matthew Holt and Sitysh Radvla (1990), Price uncertainty is measured by time-dependent conditional variance of expected prices. For this reason, self-returning process can be used for crude oil as following:

$$P_t = \beta(L)\, P_t + \varepsilon_t$$

which P_t isthe real price of crude oil, $\beta(L)$ is the estimated coefficients of a polynomial (, $b_n b_0$ ...,), L is Stop operator and ε_t is the error component that it is assumed to be distributed Normally and, based on information available at time t - 1, ie, with zero mean and variance (h_t).

$$\varepsilon_t \left| \Omega_{t-1} \sim N(0, h_t) \right.$$

In numerous studies of the conditional variance or standard deviation ϵ_t is used as an indicator of uncertainty and risk, but if we have for all t: $\sigma^2 = h_t$, therefore, The conditional and unconditional variances in equation (1) is fixed. In other words, the conditional variance associated with (1) the length of time is changing and cannot be used as an indicator of risk. The first requirement for the use of the conditional variance as an indicator of risk and uncertainty is changing variance over time. After introducing anisotropy model of conditional variance (ARCH) by Engel (1982), calculated risk and uncertainty and unpredictability expectations were possible with high accuracy. The characteristic of ARCH model is the prediction of Conditional variance of a time series that have clustered fluctuations over time. In this series, more changes tend to be associated with greater variation and less changes with less variation. In this model, conditional variance (h_t) are estimated based on the realized values of (p_t).It is primarily said that the models look at the past, because the parameters are estimated based on all

information available at time t-1 i.e. Ω_{t-1}. The objective of quantifying the risk of oil price is to forecast the variance h_t based on past information P_t. For this purpose, a general model of ARCH (P) can be written as follows:

$h_t=h\ (P_{t-1}\ ,\ P_{t-2}\ ,\ ...,\ P_{t-p}\ ,\ a)$

Where P, Arch-order model and the vector of parameters that must be estimated, namely:

$h_t=\alpha_0+\alpha_1\varepsilon_{t-1}^2+\alpha_2\varepsilon_{t-1}^2+_{...}+\varepsilon_{t-p}^2$

ARCH regression model proposed by Engel, In particular, there are the differences between conditional and unconditional variance. Bulerselo (1986) interruption of their conditional variance can also be entered in the model by increasing flexibility and information held by ARCH models, in addition to the error terms. Dissonance model of generalized conditional variance GARCH (p, q) introduced by Bulerselo (1986) is as follows:

$$h_t=\alpha_0\sum_{i=1}^{q}\alpha\varepsilon_{t-i}^2+\sum_{j=1}^{p}h_{t-j}=\alpha_0+A(L)^{\varepsilon_{t-i}^2}+B(L)^{h_{t-i}}$$

$p,q\geq 0\ ,\ \alpha_0>0\ ,\alpha_i\geq 0,\quad i=1,2,\ldots,q$

$\beta_i>0\ ,i=1,2,\ldots,p$

According to the above equation and GARCH process stationery, non-conditional mean and variance will be as follows:

$E^{(\varepsilon_t)}=0$, $Var^{(\varepsilon_t)}=a_0(1-A(L)-B(L))^{-1}$

Thus, for a stationary process GARCH (p, q), unconditional variance ε_t is a constant, while the conditional variance is changing over time. If p = 0GARCH (p, q), then the GARCH process is converted to ARCH (q). If p = q = 0, then the conditional variance becomes constant, as the standard time-series models, because ε_t become a White Noise. The simplest model of GARCH is models of GARCH (1, 1), which includes a fixed component (a_0) is measured in the oscillation period as the interruption of residue out of the equation, it means component of the Arch (ε_{t-1}^2), and the last period forecast variance, the GARCH component (h_{t-1}). Namely:

$h_t=\alpha_0+\alpha_1\varepsilon_{t-1}^2+\beta_1 h_{t-1}$

If there are any effects of ARCH and variance anisotropy, we can use GARCH process as an instrument for the risk of price fluctuations.

1.4. The Effects of Oil Price on the Macroeconomic in Iran

Iran's economy has been suffering from long macroeconomic imbalances. In Qajar era, there was not the concept of today's economic state and basically, government spending was not the current context. Imbalances were partly compensated by credits or loans; the economy was in the condition that for example, Balance of Trade was kept by the export of the old gold and metals. With the discovery of oil and the injection of oil revenues to the state budget, foreign debt decreased to some extent. But only when oil prices increased in 1972, the first oil shock, Iran was removed from the house of the borrower countries.

In first program (1949-1956) was predicted that foreign borrowing provide 31 percent of total revenue sources and 60 percent of total lending programs that With the start of oil nationalization movement and the rise of the nation-state of Mosadegh, the program was not performed effectively. In the second program, the foreign debt was devoted to 27% of the total program income sources and 86% of total borrowings during the program. It reached to respectively 14%, 91% and 14% Fourth program 53% in

third program. The country was on the verge of a massive transformation program with a fifth. At the start of program, oil prices reached to from 9/1 to about 10 dollars in a year. Oil revenues flowed into government's treasury. The government took a large part of petrodollars in the performance of the fifth program, so that the money of program was doubled. This causes problems when it was happened previously for other countries; and it is referred to as the Dutch disease. Reliance on oil continues in the years after the revolution. The start of war and its continuation, in practice, Production system were disrupted in the country affected by war, crisis management and ownership. Management of the economy over the years was looking to sell more oil to cover the costs of war and essential supplies. Therefore, black markets for other commodities, durable and even food were set. After the war ended, and the first five years after the revolution, the share of value added in constant prices of oil to GDP was fluctuating during the application of 20 to 3/21 percent. Trade policies, for encouraging the exporters and movement into export sectors of the economy that the war was brought to closure, cause to reduce the share of oil exports in total exports in the early program about 92 percent in 1990 to about 79 percent. In second program, due to problems that occurred, it potentially leads to failure of the unified exchange rate. The need for oil export to develop programs and large projects that were defined in the first caused to reach the share of oil exports in total exports to the 3/82, 86, 4/84 percent during the second, third and fourth second program. We referred to Iran because it is an oil exporting country in the world and the effects of oil price shocks on oil-exporting countries.

1.5. The Impact of Oil Shocks on Macroeconomic

Nowadays, the effect of oil revenues on the political economy of oil-exporting countries is controversial topics. In general, especially about Iran, it can be observed in the way of government spending, economic structure and behavior in the interior of the state. Usually, in oil-exporting countries, oil export revenues are considered as the income of the public sector and are funded through the Treasury.

Petroleum Exporting Countries, due to their political structure and the government as the largest broker in the most manufacturing and service sectors are most active. Social and political expectations of the government generally has no economic basis, it causes most of the government effects of capital costs to be like running costs. Major governmental investment does not follow CPM schedule. The volume of investment exceeds the predicted figure (Upon which the cost been done), inefficient public administration also causes to developmental effects of such investments to be low. Eghbali *et al.* (2005) study showed that in addition to running costs, capital costs in the construction sector are also an obstacle to the participation of private sector investment. The negative effects of government spending do not stop at just the year of the study; the costs and annual increases are always disturbing the state. Since oil revenues were the result of the activities of economic sectors, thus, they do not represent an increase in real economic growth. Therefore, increasing the incomes and injecting them into society quickly leads to higher prices. The experience of the Petroleum Exporting Countries including Iran in fifth development plan was an invaluable experience in this regard. Drop of oil price causes government, due to the flexibility of running costs that the bulk of the salary is devoted to a government employee, to reduce construction costs and move it to the running costs. So the first effect is the appearance of a pile of incomplete projects in the construction sector. This causes stagnation and unemployment, especially in sectors that use mainly unskilled and thus instability of the economic will spread to the social and political spheres. Finally, part exchange, balance of payments and budget deficits is affected; and the inflation from the beginning will cause to reduce economic growth (Hallafi *et al.*, 2005). Increase of export earnings is associated with higher rates of economic growth; but the immediate impact of this increase is reduced. Eghbali *et al.* (2004) have shown that an increase of one per cent increase in oil export will increase One percent increase in oil export revenues increase 0/80 percent economic growth after 2 years. It seems that this problem is due to increasing population, growing state after the revolution. Gasgari and Eghbali (2006) examined is problem by Different definitions of instability on Iran's oil exports and are the result of the economic slowdown. A surge in oil prices in the short term is to increase

government revenues. In this situation we are faced with a government that does not have budget restrictions and can accelerate the process of economic development spending, new projects to be defined and applied. This causes the development of a "public plan" option. Citizens feel that they are faced with rising oil prices and sovereign state that for the sake of filling his coffers sooner should destroy the country's arrears and increase social welfare overnight. It is natural that this problem shows the positive reaction in short time.

Economic projects are defined; several occupational groups involved in the implementation and construction works; but the utilization period, it cannot make many people who are a major part of their nonfinancial quickly work. In such an atmosphere, any success is seen from the government and officials received numerous titles and medals; On the contrary, it is obvious that any problems should be solved by the government; otherwise the infected state is depraved and deserving of collapse. In this social and economic climate people are watching the state. Nature of oil revenues is such that indigenous sectors in the economy have a weak relationship between pre-and post -oil revenues; as a result, Oil revenues is considered as an independent and quite unusual and unprecedented income for the government. In this situation, government spending is financed by the taxpayers. In other words, people have a negligible share of the development costs; on the contrary, the government, due to the achievement to independent nation revenue, engages in self development programs. It interesting that Government in the implementation of development programs is facing resistance from the people. The issue is very clear that because these costs are not financed from the public, the government does not need to provide public opinion. The gap between people and government becomes wider because dictatorship has long existed in Iran; and the foundation of this gap is being strengthen by economy.

2. RESEARCH METHODOLOGY

In this investigate the effects of oil price uncertainty on private investment in by using Eviews 7 and annual data of iran economy over the period from 1992 to 2012. First by using the ADF tets stationarity of variables will be test. We expect that the variables are non-stationary. Accordingly in order to avoid the spurious regression problem, Engel-Granger cointegration test wil be use to be able to trust the results of model estimation. Then by use of relevant tests, appropriate method for estimation of model will select. Then oil price uncertainty wil measure by using EGARCH method and finally, the model will estimate by using generalized method of moments (GMM).

3. RESULTS

Econometric models in this study are as follows:

$$Index = \beta_0 + \beta_1(UNOIL) + \beta_2(RER) + \beta_3(M_2) + \beta_4 INDEX(-1) + \varepsilon_i$$

Here the private sector, as the dependent variable to be considered. The independent variable in the model, oil price uncertainty, the first independent variable in the model is considered. The price of a barrel of West Texas intermediate crude oil (from firm Dow Jones) can be. In addition to oil price uncertainty as independent variables in the study of the real exchange rate and inflation variables are used. Table 1 using the Dickey Fuller ADF test is to assess the stationery of the model's variables.

Table1: Evaluation of static variables in the model

Variables	Prob	Chance of making an order differencing
Uncertainity of oil price	0.00	
inflation	0.16	0.00
real exchange rate	0.86	0.03
Private investment sector	0.84	0.00

Source: findings of research

Dickey Fuller test results in Table 1 indicate that the model variables except oil price uncertainty , the levels are not static and making a lasting difference by one order. So the bet Dickey - Fuller unit root hypothesis H0 that there is or Napayayy be rejected (ie, H1 hypothesis cannot be rejected based on the stationery of variables).

3.1. ARCH test and Baryvush Godfrey

After static reviewing variables of the model, it is necessary to find appropriate level for the ARIMA model by using the autocorrelation function and partial autocorrelation, we find that the results of the estimation model ARIMA (1,1) in Table 2 below:

Table 2: Estimation of ARIM model for oil prices

Variable	Coeficient	Statics -t	Prob
C	-0.04	-6.14	0.00
AR(1)	0.5923	10.02	0.00
AR(2)	0.5371	10.17	0.00

Source: findings of research

According to the results of estimating model, it is determined that oil prices is associated with a prior period and the residue of a prior period. The important thing here is that the residues of estimated models have no autocorrelation. Any autocorrelation in the disturbance components is the indicators of a systematic process in the y sequence that the estimated model ARIM has the ability to explain it, therefore, to examine this issue, Biryvush Godfrey test was used. If the model ARIM is estimated and the disturbance variance is not constant, estimated coefficients of the other model of ARIM are not reliable; In this case, the ARCH test is used to check the conditional variance anisotropy:

Table 3: Test of Biryvush-Godfery and ARCH

Test	**Statics-F**	**Prob**
Biryvush-Godfery	0.5523	0.754
ARCH	6.35	0.0105

Source: findings of research

According to table3, the estimated model does not have Autocorrelation; But there is heteroskedasticity. In this case, the time series which are associated with high uncertainty , followed by periods of little change, leaving behind required to arise from the pattern of its BGARCH top model estimated that the results of the estimation are presented in Table 4 ARIM_EGARCH models:

Table 4: The estimated model of EGARCH-ARIMA of oil price

Variable	**Coeficient**	**Statics-t**	**Prob**
C	-0.02	-3.50	0.00
AR(1)	0.5923	1.96	0.03
MA(1)	0.7129	3.53	0.00
Variance Equqtion			
C	4.48	6.41	0.00
$RESID^2$	0.91	7.42	0.00
GARCH	-0.38	-2.26	0.02
R^2	0.32	Adjasted R^2	0.14
Durbin-Watson	1.89	Prob(F-static)	0.00

Source: findings of research

3.2. GMM, Generalized Method of Moments

GMM is a powerful estimator that unlike the maximum likelihood method, it does not need the exact data of distribution of error sentence. This method is based on the hypothesis that error sentence in equation is associated with sets of instrumental variables. When a dependant variable is on the right side of model as a pause, other estimation of OLS is not compatible. In this situation, it is necessary to use2SLS or GMM. Due to the selection of instrumental variables, estimation by 2SLS model suggested by Anderson & Hsiao may result in calculating large variance for coefficient; at the end it may cause no to be significant statistically. To solve this problem, GMM model is suggested by Anderio and Band. By selecting the proper instrumental variable estimation method and applying a weighting matrix can be a powerful estimator for the anisotropy of the variance and autocorrelation of unknown. In GMM, the pause of dependent variable is entered in the right side of the equation as an independent variable. Thus, this model can be scaled by new parameter. In such situation, if the distributed pause is also included in the model, we can achieve distributed lag regression model; and we can scale the model by richer parameter. In order to increase the stationery of the results obtained in the model, Regression coefficients in the form of dynamic processes is re-estimated by using the advanced generalized method of moments GMM. On the one hand, due to the need for accurate data distribution, GMM model does not need the exact data of distribution of error sentence. It is based on the assumption that Disturbing terms of instrumental variable equations are non-correlated and the correlation among the error terms of the explanatory variables in the fixed effects model, the credit is higher.

When the dependent variable models , the OLS estimates are not consistent with other interruption occurs on the right side (Hshyay , Baltajy Rlanv and Bond 1995) and the two-stage estimation method 2SLS (Anderson and Hshyayv) or Orlando and Bond GMM (1991) was invoked . According to Mathias and Svstr , 2SLS estimates may be due to the difficulty in selecting the means, variances large, and estimates of the coefficients obtained are not statistically significant . The GMM method is proposed to solve this problem by Rlanv band. It is also possible that some common assumptions Incoherence explanatory variable in the regression model as components of the error , does not hold . So other methods such as instrumental variables, which are generally based on the difference between acts is proposed. Because, in general, a model of estimators obtained based on these variables for a particular parameter is high, so the generalized moment method as an alternative to GMM dynamic panel estimation of linear regression models is presented.

3.3. The introduction of variables of the model

In this section, we want to introduce and study the statistical properties of the model variables. In this study, in addition to oil price uncertainty , real exchange rate and inflation variables as independent variables have been considered. Also, all variables in the model are from 1992 to 2013 and annually. Therefore, rer is the real exchange rate, uncertainty in oil prices (Unoil), M2 inflation, index of private sector investment in Iran. Due to the variables considered, the following theoretical model is proposed:

$$LOG(Index) = \beta_0 + \beta_1 LOG(UNOIL) + \beta_2 LOG(RER) + \beta_3 LOG(M_2) + \beta_4 INDEX(-1) + \varepsilon_i$$

Before estimating the model, first, the statistical properties of each of the variables should be examined by using the generalized method of moments. In this way, we can have a precise knowledge of them.

Table 5: Investigate the statistical properties of the model variables (1992-2013)

Variable	Mean	Median	Sts. Dev.	Prob
UNOIL	0.0	0.0	0.0	0.0
RER	6860.54	6510.29	1668.26	0.0
INDEX	9047.02	4355.92	4828.29	0.52
M_2	5987.80	8953.81	4494.55	0.60

Source: findings of research

As it can be seen in Table 5, most variables in the model based on experimental Jark – Bera do not have a normal distribution. And statistical inference based on the normal distribution is faced with the problem. Hence, generalized method of moments can solve this problem. It can be done according to Engel Granger test for co-integration variables of test model for static by using Dickey Fuller test.

Table 6: The co-integration test of pattern ariables

Test	Prob
Dickey Fuller – Residual of model error terms	0.000

Source: findings of research

Table 6 shows that the estimated residual is Static model; and there is also a collective relationship.

Table 7: The results of the estimated method based on GMM

Variable	Coefficient	static-t	Prob
β_0	-18730	-10.84	0.0000
β_1	-1572	-3.46	0.0003
β_2	-4.85	-7.76	0.0000
β_3	372	2.44	0.0218
β_4	1.21	181.3	0.0000
R^2	0.99	$\overline{R}^2$	0.98
Durbin-Watson	1.41	*J-Statistic*	0.09

Source: findings of research

the results of the estimation model_in table7 shows that Oil price uncertainty (β_1) has significant and negative impact on private sector investment that ,in fact, The main hypothesis of this research is proven. In fact, with increasing uncertainty, the costs of production increase that often depends on oil prices and is as primary materials; hence, Profits will decrease uncertain conditions.

4. CONCLUSION

This study examines the impact of oil price uncertainty on private investment in Iran. To check the stationery of variables, Unit root tests of Dickey Fuller is applied. The results of this test show that the model variables are not static but in the level of oil price uncertainty and once making a subtracting, they are reliable. In fact, oil price uncertainty is inevitable. Therefore, it is important to note it. In order to specify the appropriate model, first, variable information must be determined by the uncertainty of oil exports that the purpose of using the ARCH conditional heteroskedasticity models achieved and an index to measure uncertainty and uncertainty over oil prices is estimated. Based on the results obtained in this study, a conditional variance structure has been approved for time series of oil price in Iran. Since investment is affected by other variables such as real exchange rate and inflation, therefore, To establish a mathematical relationship between the private sector and the independent variables, including oil price uncertainty , real exchange rate and the inflation rate, the influence of these variables on private investment is estimated by the generalized method of moments (GMM). Oil price uncertainty has a significant negative impact on private sector investment in Iran with which the main hypothesis of this research is proven. In fact, with the rising of uncertainty, the costs of production increase that often depends on oil prices and is as primary materials; hence, Profits will decrease uncertain conditions. According to above, it is suggested that as I was stated in this study, oil price has great impact on

macroeconomic variables. According to the Iranian Oil and high and undeniable dependence on oil prices and foreign exchange, these effects show that administrators of Country's macroeconomic should show tact and sensitivity to expenditure and injections of oil revenues into the economy. Since the budget is highly dependent on oil revenues, in the first step, dependency should be removed and the state budget will be funded from other sources, such as taxes. Because the conversion of these incomes to Rials and spending them cause to increase exchange rate, liquidity and therefore followed by inflation and lead to Dutch disease; these revenues will increase economic activities and development of the manufacturing sector, finally, capital market and the stock only if efficient investment in infrastructure is done in constructional parts investment. With the expansion of privatization, the size of government is reduced in order to prepare the field for activity of private sector. Investors should pay attention to fluctuations in oil prices as an important indicator of the impact on changing costs that corporate earnings is influenced; And as far as possible, dependence of its products should be reduce in order benefits not to affected by these fluctuations. Also, The use of revenues from oil exports in order to make domestic and foreign investments to reduce the vulnerability of economic, political, social and cultural and reduce the impact of unexpected uncertainty in oil prices, the development of non-oil exports are taken seriously and the obstacles to be overcome on the way to it.

REFERENCES

Abrishami H., Mehr Ara M. and Zemanzadeh Nasrabadi H., (2010). The relationship between oil shocks and economic growth in OPEC countries. Journal of Energy Economics, 21: 93-112.
Cordon W.M. and Neary J.P., (1982). Boombing Sector and Deindustrialization In A Small Open Economy", Economic Journal, 92: 825-848.
Eghbali A.R. and Hallafi H.R., (2006). Analysis of the effect of oil shocks on the economy of iran, should we wait for the dutch disease?. Political Economy Quarterly Review, 7: 71-90.
Eghbali A.R., Hallafi H.R. and Gasgari R., (2004). Oil exports and economic growth. Journal of Economic Research, Tehran University, 9: 109-129.
Eghbali A.R., Hallafi H.R. and Gasgari R., (2005). Investigate the relationship between government spending and private sector investment: A case study in Iran. Economic Research, Institute of Economic Affairs, 12: 137-167.
Gasgari R. and Eghbali A.R., (2006). The effect of oil shocks on private sector investment. Economic Research and Policy Quarterly Review, 36: 61-76.
Hadian E. and Parsa H., (2007). The effect of oil price fluctuations on macroeconomic performance in iran. Journal of Humanities and Social Sciences, 22: 111-132.
Hallafi H.R., Eghbali A.R. and Gasgari R., (2005). Investigate the exchange rates deviate from its equilibrium path. Economic Research, Institute of Economic Affairs, 14: 167-189.
Hallafi H.R., Gasgari R. and Eghbali A.R., (2006). Instability oil exports and economic growth in iran. Economics Researches of Iran Quarterly Review, Allameh Tabatabai University, 24: 77-94.
Hasantash S.GH. and Naderian M.A., (2009). Evaluate the potentials and benefits of reducing energy intensity in OPEC countries. Journal of Energy Economics, 16: 157-184.
Lee K. and Ni S. and Ratti R., (1995). oil shock and macro economy: the role of price variability. Energy Journal, 16(4): 57-51.
Mehr Ara M. and Niki Oskuyi K., (2007). Investigate the oil shocks and its effects on macroeconomic variables. Journal of Commerce, 40: 1-32.
Mohanty, S., M, Nandha and G, Bota., (2010). Oil shocks and stock returns: the case of the central and eastern european (CEE) oil and gas sectors. Emerging Markets Review, 11(4): 358-372.
Onour I.A., (2007). Impact of oil price uncertainty on Gulf Cooperation Council stock markets return. OPEC Review, 31(3): 171-189.
Reyes R.G. and Raguindin C.E., (2005). The effect of oil price shocks on the philippine economy : a var approach. Working Paper, University of the Philippine, School of Economics, 7: 22-38.

Rodriguez R. and Sanchez R.H., (2005). Oil price shocks and real GDP growth: empirical evidence for some OECD countries. Applied Economics. 37, 201-228.
Tayyeb Nia A. and Ghasemi F., (2007). The role of oil shocks in the business cycle of irans economy. Journal of Economic, 23:80-149.