Oil Price and Its Role in Domestic and Foreign Economy

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ARTICLE INFO	ABSTRACT
corresponding Author: **Bamdad partovi[2]** [2]Assistant Professor and Faculty Member of Economics Department, Abhar Branch, Islamic Azad University, Abhar, Iran	The current structure of Iran economy like many other developing exporting oil countries as gradually formed over the past few years around the exchange earnings from the sale of crude oil and any changes in foreign exchange earnings from the exports of crude oil effect on other economic activities sectors, development plans and annual budgets, the most important role of the oil industry is to provide over 80% of foreign exchange earnings and therefore the undeniable reliance of various economic sectors on imports to meet its needs along with the reduction of foreign exchange earnings from the export of crude oil causes being unfavorable the exchange situation and thus reducing the intermediate imports and production decrease and also reducing the capital imports. The purpose of this study is to determine the effect of oil prices on developing the exports of Oil Products Distribution Company (Tehran). Statistical population includes all distributing petroleum products companies of Tehran. Since the population consisted of 12 participants and the researcher was able to investigate the population in census, therefore the sampling analysis has not been used. In this process, data analysis consists of two parts:descriptive statistics in which the calculations will be performed by using the SPSS software and in order to examine relationship between the variables, the EVIEWS Software will be used in this study. The data analysis results indicate that the oil price has a direct impact on export development and the hypotheses with significant levels of 95 % have been confirmed.

Introduction

Oil is one of the energy sources which are widely utilized worldwide. In many studies, change in oil price is considered an externalagent which shocks the economy and considerably influences the total production of a country. This subject has attracted the attention of many researchers in economics area to particularly investigate the influence of shocks caused by oil price on macroeconomics variables like inflation, growth rate, economics cycles and dollar exchange rate. These effects are

not only limited to oil producer countries, but have a worldwide influence (Fiebig, 2001; 102a).

Oil market is an outstanding one because of the lack of any hope to discover new oil sources, lack of sufficient investment for producing oil and gas particularly in OPEC, increasing demands for oil in developing countries and emergence of new economic powers as well as political and military crises around the world. The fluctuations of oil price and instability in the world oil market has attracted the attention of macroeconomists to investigate the shocks caused by oil price (Samadi and et al., 2009-2010; 5).

Oil price is one of the factors that influence the global macro indexes and so have motivated economists to study how and how farhigh oil prices affect the world economy.

Generally, increase in oil prices causes a flow of income from importing countries to exporting countries through causing a shift in commercial trades. The direct effect of oil prices depends on several factors including the contribution of oil spending in national income, dependence of a country economy on imported oil and the ability of end-users to reduce their consumption and switch from oil to other fuels to meet their needs. Naturally, the higher rise in oil prices and the longer duration of it results inits greater impact on macro-economy.

Higher oil prices add to export revenues of countries that are net oil exporters and thus increase their real national income, although part of this revenue is lost due to reduced demand for exported oil of the country (due to the economic recession in trading partners of the exporter country).

In countries that are net oil importer, higher oil prices lead to inflation, increase the initial costs and demand for non-oil goods and eventually reduce the investment.

Rising oil prices also change the currency rates and balance of trade between the countries. Countries that are net oil importer usually have experienced the deterioration in the balance of payments. This has caused decreasing value of their national currency (monetary value). As a result, imported goods of these countries have become extremely expensive, while their exported goods have become less valuable, leading to a drop in real national revenues (Sadeghi et al., 2007-2008; 14).

Iran is one of the oil exporting countries. The country enjoys the third place1 in 2009 ranking of countries in terms of exports.

Iranian state budget relies on oil revenues. As a result, any change in oil price significantly affects the country economics. Oil revenues account for 80-90 percent of export revenues and 40-50 percent of annual state budget of Iran. Financial aids and subsidies obtained through oil revenues are the main revenue sources for the country. So, the revenue obtained through crude oil exports indirectly affects other economic activities (Samadiand et al., 2009-2010; 5).

1. 1 Problem Description

Like many other developing countries that export oil, the current structure of Iranian economy has been formed around proceeds from the sale of crude oil in the recent years.Any change in foreign exchange receipts from the export of crude oil affects the activities, development plans and annual budget of other sectors. Oil price volatility and fluctuations can cause instability in macroeconomic variables in both oil exporting and importing countries (Samadi, 2009-2010; 2).

1.2 Importance and Necessity of the Research

On one hand, more than 50% of Iranian budget sourcesdep end on currency earnings from exports of crude oil and gas and the revenues have more contribution in providing foreign exchange resources. On the other hand, oil prices volatility and consequently revenue from exports are exogenous, a situation which is affected by the economic and non-economic factors. These double the importance of examining the effects of oil price fluctuations on macroeconomic variables,

especially end user consumption (private and public), which have the highest contribution in the GDP. In this study, we seek to answer the question whether rise and fall in oil prices have different effects on private and public sectors (Shariatee et al., 2013-2014; 2).

1. 3 Min Objectives of the Study

The main objective that the study pursues is to deriving the relationship between oil price changes and its effect on real oil price and real imports

1.4 Main Hypothesis and the Research Hypotheses

Main hypothesis: Iran's oil export directly affects the growth of oil exports.

Change in oil prices has a positive impact on real oil prices.

Change in oil prices has a positive impact on real import.

1.5 Innovation of the Research

Several components are involved in determining oil prices. An innovation of the research is to examine how these components influence the development and growth of the exports of Oil Products Distribution Co, Tehran, Iran. Additionally, the role of other variables is examined in the "Background research" section.

2. Theoretical Framework and Literature Review

2.1 Oil Economics

Stern and Kouland studied the factors that can affect the relationship between energy consumption and economic activities using a neoclassical function.

$$(\varrho_1, \dots, \varrho_m) = f(A, X_1, \dots, X_n, E_1, \dots, E_P)(2.1)$$

ϱ_i, X_i,E_i and A represent various economic production, production factors,energy factor such as oil and current state of technology.

Douglas (1991) quotes Brandt and Wood (1975), suggesting that an energy source is a production factor in the total energy production functionand has a separable poor relationship with the work. In their proposed production function, firstly energy and capital are combined and then the result is combined with work factor to create the product (Arshadi and Mousavi, 2012-2013; 181).

Mork(1989) proposes anasymmetric definition of oil price changes which differentiates positive from negative shocks caused by oil prices. Hedefines changes in oil prices as follows:

$$ROIL_t^+ = Max\{0, (rolip_t - rolip_{t-1})\}$$
$$ROIL_t^- = Min\{0, (rolip_t - rolip_{t-1})\}$$

Where $ROIL_1$ denotes the logarithm of the difference between the real oil prices in time$t$. Mork shows that macroeconomic variables responses to increases and decreases of prices are asymmetric. He concluded that positive changes in oil prices have a strong and significant negative correlation with changes in real GNP, whereas negative changes in oil prices have not any significant effect. In another study in 1984, Mork argues that this is because the importance of the role that oil plays as a factor of production. In fact, the change of prices leads to the reallocation of resources in the economy. This reallocation may lead to slower GDP growth.

Lee et al. (1995) investigated the relationship between oil price shocks and real GNP growth of the USA in the 1949 to 1992 period. In the study, the authors points to the fluctuating nature of oil prices since its sharpdecrease after 1986 and conclude that the method Mork (1989) used to separate positive and negative shocks fails to demonstrate the severe impact of oil price shocks on real GNP growth for the years 1986 to 1992. They argue that if oil prices fluctuate constantly, economic agents will expect that increase in prices in the short term will be reversed over time (and this will surely be followed by the reduction of oil prices). They use a GARCH model to derive conditional variance of real oil price changes and conclude that positive shocks in oil prices have significant

negative correlation with real GNP growth, whereas this is not the case for negative shocks. To determine the effect of positive and negative shocks of oil price on production, they useda GARCH-based scale specificationas follows:
Mean equation:

$$O_t = \alpha_0 + \alpha_1 O_{t-1} + \alpha_2 O_{t-2} + \alpha_3 O_{t-3} + \alpha_4 O_{t-4} + e_t$$

$$e_t | I_t - 1 \approx N(0, h_t)$$

$$h_t = \gamma 0 + \gamma 1 e_t^2 - 1^{+\gamma 2 h_t - 1}$$

$$SOPI_t = MAX\left(0, \hat{e}_t / \sqrt{\hat{h}_t}\right)$$

O_t and h_t reperesent the rate of change in real prices and its conditional variance, respectively. The mean and variance equations are denoted by $AR(4)$ and $GARCH$ (1,1) respectively. Also, $SOPI_t$ and $SOPD_t$ denote Increase and reduction of scale oil price, respectively. According to this specification, rising oil prices which occur after a period of price stability have great erinfluence than when the price of oil began to increase after a period of decline. The advantage of theafore mentioned model is that while modeling positive and negative shocks in oil prices, it takes into account the environment where oil prices change. This implies that the same change in oil prices in different environments have different effects on economic growth (Eltejaee andAfzaly, 2012-2013; 4).

2. 4 History of Fluctuations in Oil Prices

Oil is considered as one of the strategic commodities in the world and as one of the important production inputs. As a result, sharp fluctuations or volatility in oil prices known as the oil shocks (positive and negative impacts) have considerable impact on the economy of developed and developing countries. In other words, the fluctuations in oil prices are the main source of economic turmoil in oil-producing countries such as Iran. The sudden rise in oil prices after the 1973 has caused a fundamental change in Iranian economics such that considerably increased oil's share in national income compared to non-oil

sectors. In this period, increased oil revenues led to an increase in the value of the national currency and the subsequent contraction of commercial sectors. This phenomenon is known as Dutch disease. Iran's economy is structured based on a single-product economy. This indicates that oil prices and revenues obtained from it are an exogenous and stimulating agents in economic boom and recession such that the those fluctuations in oil prices which are out of control cause the fluctuation of the most economic variables (Arshadi and Mousavi, 2012-2013; 180).

Impact of Oil Prices Fluctuations on Economic Sectors

High oil prices leads to the flow of income from importing countries to exporting countries. This causes a change in the balance of trade between the two countries, the volume of foreign debt, balance of payments, debt to GDP ratio, inflation effects and currency exchange rate. The continued current account deficit imposes a negative pressure on the national budget. The two incidents are called "twin deficits" (Belkar et al., 2007).

The increase in international oil prices will lead to decreased economic welfare and growth (Kooros et al., 2006).

Some macroeconomic incidents may affect the oil sector. They are caused by the shocks. Most studies tried to investigate the oil prices and economic activities and there are relatively small number of studies that have investigated the changes in oil prices and stock market efficiency. In addition, many of these studies are only focused on a few industrialized countries (United States of America, Canada, European countries and Japan). Only a few empirical studies have been conducted on the emerging stock markets. The results obtained in these studies indicate that there is a significant relationship between changes in oil prices and the total shares. These studies also show that the changes in oil prices have asymmetric impacts on the economy, such that positive shocks caused by changes in oil prices have more impact on stock return and economic

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activities compared to negative oil prices shocks (Javadi and et al., 2010).

Impact of Oil Prices on Exports

From the perspective of demand, rising oil prices and the subsequent increase in costs of production and general level of prices reduce production and employment opportunities. Oil shocks create uncertainty about the economic state of the country in the future. This leads to the postponement of consumption and investment decisions made by the people. From a more general perspective, rising oil prices decreases the world demand, because this causes the flow of income and resources from oil importing countries to oil exporting countries. Since the decrease of demand in the first group is much higher than the increase of demand in the second group, the total global purchasing power and aggregate demand decreases. On the other hand rising oil prices may have an adverse impact on the trade balance in oil-exporting countries. This is because of the fact that although the rise in oil prices leads to an increase in foreign exchange earnings from oil exports, but it has an overall adverse impact on the economy (Nematollahi and Tabatabaee, 2011-2012; 154).

2. 13 Impact of Rising Oil Prices on the Global Economy

Generally, rise in oil prices changes the trading relationship (exchange) and thereby appears to cause the flow of income from oil importing countries to oil exporting countries. The impact level that oil prices have depends on various factors including the contribution of oilspending in national income, the degree of the country dependence on importing foreign oil, the ability of end users to reduce their consumption level and their ability to switch from oil to other fuels to meet their needs, the gas consumption in the economy, the impact of higher prices on other types of energy, the reliance of the country on oil or gas to produce electricity, the policies the countries adopt when they face oil price rise as

well as the ability of the countries in implementing the aforementioned policies. Oil exporting countries will directly benefit from rising oil prices. But part of this extra income will be lost because of the drop in the demand of the countries that experience economic recession as the result of rising oil prices. Higher oil prices lead to inflation, decreasing non-oil demand and declining investment in oil-importing countries. Also, it will decrease tax revenues and increase budget deficit and interest rates. In addition, rising oil price will have a pressure on wages and cause lower demand, making unemployment to rise (Tousi and Shafaee, 2005-2006; 68).

"Davis and Haltiwongr" (2001) studied the relationship between employment and firing cases in the years 1972-1988 and the changes in oil prices. They discovered that the impact of oil prices shocks and monetary crises in the form of decreasing employment opportunities is higher than their impact on creating employment opportunities; it is obvious that the employment response to oil shocks is symmetric, such that positive response to oil shocks is ten times higher than its negative response (S.J. Davis and J. Haltiwonger, p. 512)

The changes in oil prices may cause the unemployment of a group of people who have less tangible skills. These individuals will lose their previous jobs and try to search for new jobs in industries that require minimum skills, such as retailing and service sectors. But it is interesting that the increase in oil prices increases the probability of employment for skilled workers. Also, experienced workforce will experience more losses in terms of lower wages and unemployment (M.R. Kean and E.S. Prasad, pp. 389-399).

The effects of oil price are partly related to interest rates. Ferderer and Hooker conducted studies on the relationship between changes in oil prices and interest rates. They even claimed that oil prices shocks have an impact on gross domestic product through their effect on interest rates (J.P. Ferderer, pp. 1-26; M.A. Hooker, pp. 195-213

Rising oil prices changes the trade balance between countries and exchange rates. Those countries that satisfy all their needs to oil from imported oil usually experience a kind of turbulence in their payment balance. This exerts a pressure on their exchange rates. This makes their imports and exports more expensive and less expensive, respectively. This leads to reduced real national income. With increasing world population, the demand for energy needed for the life have increased and available resources, especially fossil ones have seriously been declined. World crises as well as rising crude oil prices since 1970s led to a serious concern about the scarcity of energy resources. This problem along with the investment generation factors and workforce were introduced as the main factors in production functions. Later, relationship between energy consumption and economic growth were examined seriously, but the causal relationship between them is still vague and controversial in the field of energy economy (Khalilpour, 4, 2006-2007).

2. 10 Systems for Pricing Crude Oil in the World
2. 10, 1 "Gulf-Plus" Pricing System
Before the World War II, crude oil tradingwas not present in the form of today trading in the world markets. In that time, the main oil trading was between main oil companies or between any of these companies with one of their subsidiaries. At that time, the major center for trading oil was in the Gulf of Mexico. In the pricing system, the price of oil products anywhere in the world consisted of the sum of the FOB price of the product in the Gulf of Mexico and the cost of transporting oil from the Gulf to destination. Therefore, the pricing system was called "Gulf-plus" (Hourcez and Mabro, 1998-1999).

2. 10 "Official" Pricing System for Crude Oil
OPEC establishment opened a new chapter in the global oil market. As the most powerful organization in oil supply sector, OPEC focused its main efforts on oil and oil pricing after its formation. One of the most important reasons behind the formation of OPEC was that oil companies unilaterally reduced the declared oil prices. That caused a sharp drop in revenues of oil-producing countries in the late 1950s. OPEC was established subsequently. The main plan of the organization in the 1960s (i.e. the first decade of OPEC activity) was to prevent the reduction of declared oil prices and fix prices within an acceptable range for OPEC members. This stability in oil prices had to be provided based on increasing revenue needs of the member countries (Shams Ardekani, 1985).

2. 10 "Product based pricing"
The pricing of crude oil using product based method is performed through determining the price of various types of oil, taking into account other four essential components. These components include:

1) The share of each of the products derived from a barrel of oil after processing in refineries
2) The price of each of the derived products in the market
3) The sum of costs of transporting, refining, and other costs that are considered in the calculation of net value of a barrel of oil.
4) Pricing time that represents the amount of time that must pass from the time of transporting crude oil to make it possible to calculate the price of crude oil derivatives at that time.

2. 10 Pricing Based On "OPEC Reference Basket"
Product based pricing made the oil prices uncontrollable, even for the OPEC member countries. This intensified the descending trend of oil price in the year 1986. Subsequently, the OPEC reference basket price was introduced in January 1987. The basket consisted of seven types of crude oil and OPEC reference basket price was determined based on the arithmetic average of the

prices of single shipments (OPEC Annual Bulletin, 2000).

2. 10 "Market-related" pricing method

There are some main objectives pursued by market-related pricing method:

- Making oil exporting countries particularly OPEC countries rid of heavy responsibility of determining oil economic prices.

- Using market-related pricing formula, the exporters achieve the pricing that reflects the overall price level of oil in the world oil market.

- Creating competition between crude oil exported by oil exporting countries and alternative fuels which other countries will to sell in the same market.

2. 11 Iran's Method for Its Exported Crude Oil Pricing

The method for determining the price of exported crude oil usually follows certain criteria and is based on specific formulas such that they can be simply calculated by the parties to a transaction. The price of Iran's crude oil is different for various destinations due to various reasons including the importance of the cost needed for transporting each barrel of oil to various destinations (to moderate fares) and the types of crude oils that are considered as production indexes in the Persian Gulf region or in bulk consumption market. There are generally two types of pricing formula for oil contracts of National Iranian Oil Company which are based on the destination (BazareNaft daily, various volumes).

2. 11 East Market of Suez Canal

Iran's crude oil is exported to the destination of the east of the Suez Canal to be sold based on a formula. Based on the formula, the average price of Oman and Dubai's crude oil is considered as the basis for pricing. Also, based on the market conditions, competitors' performance and the like, a price difference is determined between this base price and a given price. This price difference is announced to the customers that receive crude oil and transport the shipments to the Suez Canal.

2. 11. 2 West market of Suez Canal

The pricing formulas are determined based on the agreements with customers in the negotiation. Also, the pricing indexes for Brent weight based crude oil are announced for customers in northwest Europe. On the other hand, the prices of Iran's crude oil in the west of SidiKeriraredetermined based on the prices declared by Global Platts News for buyers in Mediterranean region. In this regard, market conditions, competitors' performance and other factors also play their role in determining the price difference. Then, the final agreement with customer is achieved.

Tehran's Oil Zone

Tehran area hosts 21 pipelines with diametersranging from 8 to 30 inches and has a total of 2050 km of pipelines. This area is known as one of the largest and most important pipeline zones and the scope of its operations is supplying fuel to Tehran, Semnan, Qazvin, Gilan, Mazandaran and Zanjan provinces. The area is considered the hub through which oil products and crude oil are transferred from southern parts to the northern part of the country. This pipeline zone is such vast and important that have shared pipelines with half of all zones of Pipeline and Telecommunication company (Markazi, Isfahan, northwest, northeast, north) and it alon zesupplies the needed fuel to Tehran metropolitan and Tehran province.

One of the other roles that thezone playsis to supply crude oil feed for refineries in Tehran and Tabriz. To this end, more than seven hundred thousand barrels of crude oil are received per day from pipelines "26 Ahvaz / Rey," 24 Isfahan / Rey and "30 Neka / Rey.Then part of the crude oil is delivered to Tehran refinery to supply its crude oil feed. This is followed by the transfer of the remaining oil through the pipeline 16to Tabriz refinery to supply the refinery feed as well.

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Background Research

Ratti&Vespignani (2015) suggested an increase in economic growth in developing countries may be associated with a higher expected growth for commodity demand than an increase in growth in developed countries. Radetzki (2006) finds that growth in emerging market countries is associated with a relatively greater usage of commodities than in expansion in developed economies. Roberts and Rush (2010) reported that commodity resources are used relatively intensive in traded goods and that growth in trade is a driving force in the growth of developing countries. Developing Asia grew at an average annual pace of 8.5% over the period between 2003 and 2013. The IMF expects developed economies to grow 2.2% in 2014 and developing economies to grow at almost 6% in 2014.

- In a study, Sadeghiet al. (1392) studied the effect of oil price instability on the growth of gross domestic product (GDP) in Iran. In order to achieve this, firstly they estimated the index of oil price instability using EGARCH (0,1) model. Then, using Markov -Switching models, the effect of this index on the growth of gross domestic product in Iran was investigated. To estimate the nonlinear model based on the verification function, MSIAH model with two regimes was selected from the various states of MS model. The results obtained from the estimation of Markov-Switching (MS-AR) model indicate that the index oil price instability has significant negative effect on GDP growth during disruptions in both regimes. Also, this effect is different for both regimes, such that it is higher for regime 2 compared to regime 1. The experimental results of the above study have useful implications for policy-makers in economy field who need to exactly identify the effects of oil price instability on economy growth (Sadeghi and et al, 2013-2014).

- Bramentand Sealan (2005) examined the effects of oil price changes on the economic growth. In this regard, they considered Middle East and North Africa countries. The results indicated that oil price shocks have positive and negative effect on production in the countries of Algeria, Iran, Iraq, Jordan, Kuwait, Oman, Qatar, Syria, Tunisia and the United Arab Emirates, but no significant results was obtained for the countries of United Arabic Bahrain, Egypt, Lebanon, Morocco and Yemen (Bramntand Sealan, 2005).

- Ragvyndyn and Reece (2005) examined the key macro-economy variables using linear autoregressive vector model, taking into consideration the linear and non-linear characteristics of oil prices. Theyshowed that positive oil prices shockshad led to lower real GDP of Philippine in long term (RagvyndynVries 2005) .

- In an article entitled "Oil Price, Inflation and Interest Rate in a Structural Vector-based Explanative Model for the Group of Seven Countries", Maneraklougni (2007) applied Vector Error Correction method, Variance Analysis technique and stimulationre action function to examine the effect of oil price changes on macro-economic variables such as interest rates,currency rates, inflation and growth domestic product in OECD countries. The results of the study suggest that oil price volatility is an important factor affecting macroeconomic variables (Maneraklougni, 2007).

2. 8 Operational model of theresearch

$$Xt = \mu + \varepsilon t \sum_{i=1}^{q} \theta i \varepsilon t - i$$

$$yt = \sum_{i=1}^{p} Aiyt - i + \varepsilon t$$

y_t is a $n \times 1$ vector of endogenous variables. $(c_1, \dots, c_5)$ representsa (1×5) vector of vector-based autoregressive intercept. A_I is a (5×5) matrix representing I^{th} autoregressive coefficient matrix. Finally, $(\varepsilon_1, \dots, \varepsilon_5)$ is a (1×5) vector which consists of errors terms. The autoregressive vector system can be used as the representative of moving average for real oil price shocks toanalyze the system response.This is achieved as follows.
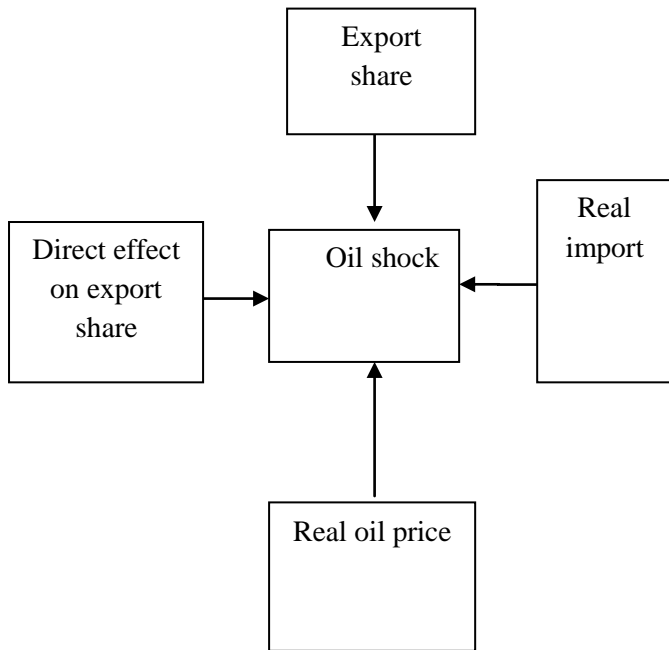
3. Research Methodology

Equal Convergence technique is used as the methodology of the research. Self-Recursive technique is one of the applied convergence techniques. The technique is used in the study to examine long term effects of oil exports on economic growth and development. Library and documentation based method is also used in the study to collect information. The data related to financial statements of oil products companies in 12 zones of Tehran were collected using field method (observation). In the study, the statistical sample consists of all the companies in Tehran that distribute oil products. All the companies were considered as the sample.

Statistical calculations are performed using statistical software SPSS. Also EVIEWS software is used to examine the relationship between the variables of the research.Limer, Hausman and

regression technique is used to collect data from financial statements of the sample and to analyze the results.

4. Findings

Firstly, the research variables are examined based on descriptive statistics. The results of the examination are provided in tables 1 and 2

Table 1: Description ofcentral tendencyand dispersion indexes for the study variables

Description	Average	Median	Maximum	Minimum	Standard deviation
Oil price	82.72	95	110	25.61	31.19
Oil products price	2988062	1713433	25503550	6289	4143124
Oil products import	19515076	6644580	10100000	12240	26852554
Oil products export	5463180	17936222	40100000	15484	79313600

Table 2: Limer test

Description		Statistical variable	Significance level	Method
Hypothesis 1	Change in oil prices has a positive impact on real oil price	0.494	0.974	Integrative
Hypothesis 2	Change in oil prices has a positive impact on real imports	6.07	0.001	Synthetic

As the above table shows, the significance level of Limer test for hypothesis 1 is more than 5 percent. As a result integrative method is used to estimate the model. However, the significance level of the test for hypothesis 2 is less than 5 percent and thus the synthetic method is used to estimate the model.

Results of Hypotheses Test

- Hypothesis 1: oil price change has a positive effect on oil products price.

    H0: oil price change has not any positive effect on real oil price.

    H1: oil price change has a positive effect on real oil price.

Limer test must be used in order to estimate the model using integrative or synthetic method. This test determines which method is more preferred. The result of Limer test for hypothesis 1 indicates that its significance level is more than 5 percent. Therefore, integrative method is used to estimate the model used in the hypothesis. Using integrative method requires the least squares estimation method for the test and thus it must be used to estimate the coefficient of the model. The value of Durbin-Watson value obtained for the hypothesis is 1.54 which lies between 1.5 and 2.5. Therefore, the errors independence is accepted which means the errors of variables are independent of each other. The obtained coefficient of determination was 11.6 indicating that the independent variable can predict the dependent variable. This coefficient shows that the model is validated, although its value is somewhat low. On the other hand, the significance level of Fisher test (f) is less than 5 percent, indicating that the model used in the hypothesis has significance and interpretable. However, eventually we need to use T-test to examine whether the independent variable affects dependent variable. Examining the hypothesis reveals that the significance level of T-test for variable of oil price is less than 5 percent (0.001). As a result, hypothesis H0 is rejected, but hypothesis H1 is confirmed. Therefore, it can be concluded that the change of oil price has a positive effect on oil products price.

Table 3: Test results for hypothesis 1

Description	Coefficient	Std. Error	t-Statistic	Prob.
Y=a+bx+ε				
Oil price	45360	15725	2.88	0.0054
Constant value	-764211	1388986	-0.550	0.584
Adjusted R-squared	0.116			
F-statistic	8.31			
Prob(F-statistic)	0.001			
D.W	1.54			
Dependent variable: real oil price				

- Hypothesis 2: oil price change has a positive effect on real import.

    H0: oil price change has not any positive effect on real import.

    H1: oil price change as a positive effect on real imports.

Limer test must be used in order to estimate the model using integrative or synthetic method. This test determines which method is more preferred. The result of Limer test for hypothesis 2 indicates that its significance level is less than 5 percent. Therefore, synthetic method is used to estimate the model of the hypothesis. Using synthetic method requires cross-section random effects (EGLS) method to estimate the coefficients of the model in the hypothesis. The Durbin-Watson value obtained for the hypothesis is 2.35. This value falls between 1.5 and 2.5. Therefore, the error independence is accepted which means the error of variables are independent of each other. The obtained coefficient of determination was 29.8 indicating that the independent variable can predict the dependent variable. This coefficient shows that the model is validated. On the other hand, the significance level of Fisher test (f) is less than 5 percent, indicating that the model used in the hypothesis has significance and is interpretable. However, eventually we need to use T-test to examine whether the independent variable affects dependent variable. Examining the hypothesis reveals that the significance level of T-test for variable of oil price is less than 5

percent (0.001). As a result, hypothesis H0 is rejected, but hypothesis H1 is confirmed. Therefore, it can be concluded that the change of oil price has a positive effect on oil products price.

Table 4: Test results for hypothesis 2

Description	Coefficient	Std. Error	t-Statistic	Prob.
$Y=a+bx+\varepsilon$				
Oil price	470404	96927	4.85	0.001
Constant value	-19396783	85600990	-2.26	0.0269
Adjusted R-squared	0.298			
F-statistic	26.83			
Prob(F-statistic)	0.001			
D.W	2.35			
Dependent variable: real oil imports				

5. Discussion and conclusion

Rising oil prices increases oil revenues dollars in the short-term. These revenues should be invested in the right place. Otherwise, they will lead to rising prices and inflation and eventually will increase production costs. If the structure of oil exporting countries depends on oil, then the deterioration of trade relationship is to the detriment of the countries. On the other hand, changing consumption patterns in oil-importing countries may increase their imports. This increases the revenues of oil exporting countries. But over time, the increase in the countries revenues will be returned to the oil-importing countries. These factors along with other factors such as inadequate economic structures, lack of coordination between economic policies, having oil-dependent economy, misuse of foreign exchange earnings and having an economy which is vulnerable to political shocks continue to hinder Iranian economic growth, although the country is one of the largest oil producers. The same situation is seen in the case of other developing countries that are oil producers. So it is possible to effectively manage the fluctuations in production which are caused by oil shocks and prevent their

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adverse effects on national economy. This goal can be achieved through conservative forecast of prices, adjustment of public expenditure based on permanent changes (rather than temporary changes) in income and effective utilization of savings or saving oil revenues to avoid the spreading of price shocks to other sectors of the economy.

Recommendations Based on the research hypotheses

Rising oil prices increase revenues from the export of oil. The increase in oil revenues has greater impact compared to reduction of oil income on private consumption. The increase in oil revenues increases private consumption. On the other hand, reduced oil revenues decrease private consumption. But the decline in private consumption due to falling oil revenues is not as much as the increase in private consumption due to rising oil revenue. In order to reduce the effect of oil prices fluctuations on private and public sector consumption and thereby reduce the aggregate demand of the whole economy, it is necessary to take following measures:

- The country needs to reduce its currency sources dependence to oil and gas exports and take necessary measures to increase the contribution of non-oil exports in the country exports.
- The country must increase the contribution of tax revenues in its revenues and reduce the dependence of its funding sources on profits from exports of oil and gas. Also planning is needed if the country aims to realize those general policies of the Fifth Development Plan that have been adopted to cut the dependence of current costs on oil and gas resources.
- The government should have financial discipline, Especially in periods of rising oil prices. This financial discipline makes the government spending less affected by fluctuations in oil prices.

- National Development Fund mechanisms should be designed in such a way that they reduce the country's economic dependence on oil export revenues. This should be done using the experiences of foreign exchange reserves. The reasons for designing such mechanisms include: a)one of the objectives pursued in establishment off oreign exchange reserves was to make macroeconomic variablesless affected by the fluctuations in the revenues from oil exports. But this goal has not been achieved, b) the policies of the Fifth Development Plan include the expansion of National Development Fund and cutting the dependence of current spending on oil revenues.
- So far, no research has been conducted to study the subject in Tehran province. So the future researchers are recommended to conduct more extensive research on the impact of oil prices in Tehran province.
- This study examines the general impact of oil prices on export expansion. So the future researchers are recommended to study the subject in more detail.
- It is also recommended that researchers examine and prioritize the factors affecting the price of various types of crude oil.

- **Research limitations:**
- Lack of resources
- Extensive study field
- Lack of research on the subject in oil companies of Tehran province

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