A Look at Oil Revenues Effect on Agriculture Section in Iran

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Abstract
This Research aims to discuss the effect of Iran’s Oil Revenues on Value Added in Agriculture. In this research we aim to investigate this issue from a comprehensive idea so we discuss oil revenues and its mechanisms, petroleum revenues and agriculture section, oil & agriculture relation, Iran’s Oil Revenues on Value Added in Agriculture. After discussing the literature we can deduce that there is a negative relation between oil revenues and added value of agriculture and agricultural export.

Keywords: oil revenues; agriculture added value; agricultural exports

1. Introduction
Developing countries having natural gifts like oil are usually in less favorable economic condition than poor countries. Iran is no exception. Although many studies and research are conducted about the issue and its causes, the problem has remained; in other word, it has become a structural problem which has penetrated into all Iran’s economic sectors. Meanwhile, due to economic planners and policy-makers attention to rapid industrial development and more support of it, agriculture sector has suffered most. This damage is more than ever particularly with increase in oil revenues in recent years, which has led to irregular increase in agricultural items import. Therefore, given the importance of agriculture sector, detail examination and analysis of oil revenue effects on it is essential. In recent decays oil has been in a special place in country’s economy and used as an intermediate goods in production chain. In addition, during these years demands on this goods in countries with less oil has been raised. From one hand, oil revenues provide a major share of country’s foreign exchange need and on the other hand is the main provider of government expenditures. In Iran, development program is relied on this source of
income. Thus, unrealization of already anticipated incomes may shut down part of development program.

Agriculture sector plays an important role in economic growth, rural development, and welfare increase. In Iran, oil revenues are very important in general economic condition and its subsectors like agriculture. Therefore, study about oil in Iran and its effects on other economic sectors such as agriculture is important and widespread. The present study attempts to examine communication paths between oil and agriculture sector and effect of oil revenues on its performance.

2. Oil Revenues and their Effective Mechanisms

In economic history of post WWII oil can be mentioned as engine of global economic growth (Bazazan et al, 2009:93). In Iran, oil sector due to its dual role in energy supply needed for economic development and growth programs in one hand and providing currency needs of these programs on the other hand is considered the motive force and key part of national economy such that its impact of income has an induction role in developing activities of other economic sectors. Furthermore, this sector would be of the most important determinants of international position of the country in near future. Oil sector in country’s economy makes a major contribution of national income and production and plays a crucial role in three general areas of energy supply for internal economic activities, provision of foreign currency to meet consumer needs of private and public sectors, and reinforcing flow of investment formation and generate revenue for the state budget (Babakhani et al, 1999:126).

In countries with single-product economy and international specialization in certain goods there is a serious reliance to that goods revenue. Oil is a goods considered the most important export product in many countries and plays an important role in their economy; thus, Iran’s economy is considered a single-product economy since its main export product is oil and a high percentage of country’s total budget is supplied by foreign exchange incomes of oil sale; government’s intervention is also high in economic activities. Therefore, decrease or increase in government income from oil sale can be effective in these sectors (Abbassian et al, 2007:110).

Economic structure dependency to revenues from oil export is characteristics of most oil exporting countries that the situation results in influence of recession or boom prevailing in global economy. In some of oil exporting countries including Iran oil revenues are totally or partly in hands of governments and they inject mentioned revenues to economy by applying financial policies. Therefore, effect of oil revenues on economy of oil exporting countries flow through financial policies into economy and regarding that structure of state budget and applying financial policies in most of oil exporting countries in heavily dependent to oil, oil revenues are of high importance. In addition, part of oil revenues funds into economy through budget must be sold by Central Bank in domestic foreign exchange market and converted into national currency;
but since part of this foreign exchange is not sold in domestic market net foreign assets of Central Bank rises resulting in increase in sources of monetary bases and consequently liquidity in economy is increased, a situation equal to expansionary monetary policy. Also, with increase in foreign current incomes from oil export oil exporting countries’ wealth increases that in turn, results in increase in their import.

Most of economic disorders in oil exporting countries are associated with excessive government spending during boom courses of oil revenues. Under Keynesian approach, it is expected that with slight increase in government budget during limited boom period of oil revenues economy would have necessary capacities and capabilities to absorb additional revenues, and therefore GDP would rise; while with excessive increase of oil revenues and then government budget and regarding full engagement of production factors in the supply side not only it does not help economy growth, but also by expanding rent-seeking activities effects of crowding-out of increase in government’s budget influences private sector activities, increase in share of government in economy, and its inefficiency; therefore, the more increase in oil revenues and inappropriate management of these additional revenues its negative effects on economic growth would expand.

In Iran, in addition to common factors among exporting developing countries, import as an important factor representing government policies in the field of foreign trade, plays a crucial role. After each increase in oil revenues the composition of import products and share of consumer goods and investment affect size of Dutch disease (Bakhtiari & Haghi, 2001:132). During excessive boom periods of oil revenues import increases (Jahadi & Elmi, 2011:19). Most part of this import finds its way into the country by service sector and results in increased profitability in service sector (Ghoravi Nakhjavani, 2002:249), that in turn results in harm to domestic production and acts as an obstacle to economic growth (Jahadi & Elmi, 2011:19). Also, due to increase in consumer goods import during these periods competitiveness of domestic production and relative efficiency of investments in private sector decrease and consequently, actors in private sector would have fewer incentives to invest in tradable products (Mehrara et al, 2011:128).

3. Oil Revenues and Agriculture Sector

Agriculture sector as the central part of economic development and growth and strategic part in supplying growing population`s food needs has a special place. Development of production in agriculture sector can be involved in adequate food supply as well as other economic needs (Sarvarzadeh et al, 2012:152). Whereas applying industrial policy and reinforcement of other economic sectors during several decays and also implementation of the sector development, agriculture has been survived and even in adverse conditions it has introduced new capabilities. It is in this frame that in laws of economic, social, and cultural development of Iran agriculture sector is mentioned as strategic and vital and development path has been always accompanied
with economy transition from dominant contribution of agriculture sector towards industry and service sectors (Esfandyari & Tarahomi, 2010:217).

In Iran, before dependency to oil revenues, agriculture sector had the highest share in employment and GDP. With gradual growth of oil revenues and trends to industrialization, this sector has received less attention (Hamidehpour et al, 2010:31). Oil export influences economy via constituents of GDP such as agriculture sector as a tradable sector (Shirin Bakhsh & Moghaddas Bayat, 2010:6). On one hand, increase in foreign currency revenues from oil export can influence agriculture sector. Though, it is not clear that if this relation is occurred through channel of changes in relative prices or via influencing pace of technical progress. In addition, it is not clear that to what extent supportive policies of the government from agriculture sector including trade, tariff, and nontariff policies or supportive pricing could override effects related to increase in oil price (Bahrami & Farshchi, 2011:194).

Instability in oil export in mentioned as an important factor in lack of sustainable stability in oil producing and exporting countries. This is also true for the case of Iran. Since most part of Iran’s export is made of primary products like petroleum and raw material, and on the other hand small size of Iran’s economy and its dependency to export revenues of such material may result in adverse effects on agriculture sector and competitiveness in traditional tradable sector in the face of unexpected and transient impulses in export revenues. Furthermore, as mentioned before, instability in oil export has a negative relation with total economic growth and consequently with growth in various sectors like agriculture (Piri et al, 2011:282). There are several studies about instability effect of oil export on economic growth; but studies examining effects of oil revenues on various sectors such as agriculture separately and in details are rare.

Undoubtedly, one of the characteristics of developing countries is their high rate of population growth. It is natural that in this situation demands on agricultural products increase and if agricultural supply could not meet the demand part of capital to import these products would be lost (Abdollahi et al, 2011; Hosseini et al, 2008). With the sudden increase in oil revenues, instead of importing capital products, country deals to importing intermediate and consumer goods and this indicates extreme consumerism of the country (Tofighi & Mehrabian, 2002:68). With weakening agricultural sector, import is increased. This has two reasons; first, with weakening agricultural sector import is increased in order to meet demands of food and agricultural products. Second, due to the antecedent and descendant relation of agricultural sector with other sectors particularly industrial sector, when it is weakened goods and materials needed for some industries like textile industry must be imported from overseas, that in turn leads to import increase (Yazdani & Sherafatmand, 2011:63). Additionally, in developing countries like Iran weakening agricultural sector occurs simultaneously with expanding industry and service sectors (tradable goods) that is followed by increase in machinery and material import (Bakhtiari & Haghi, 2001:125).
4. Relation between Oil and Agricultural Sectors

Oil sector in Iran’s economy has limited antecedent and descendent relations with other economic sectors and its main role is supplying foreign currency revenues for the economy. Employment in this sector has a small share and its active force is mainly skilled and sometimes foreign labor (Zoughi, 1999:32-39). While agricultural sector has strong relations with other economy sectors like industry and service and is considered food producer and some raw materials for industry and is also consumer of industrial and service products (Najafi, 1994:10-11), in recent economic texts agriculture has been considered as an integrated part of in domestic economy in which industrial and agricultural sectors reinforce each other to achieve sustainable economic growth (Korki Nejad & Najafi, 2008:140; Esfandyari & Tarahomi, 2010:217).

Performance of oil sector is determined in global markets, while performance of agricultural sector is dependent to internal factors. Therefore, it is expected that direct relations in terms of antecedent and descendent relations between oil and agriculture are so weak and is only limited to the use of fuel produced in oil sector by agricultural sector. On the other hand, labor surplus in agricultural sector cannot be absorbed in oil sector (Bakhtiari & Haghi, 2001:115). The only strong relation between the two sectors is indirect that is the effect of oil revenues on agricultural sector. Since most part of government revenue is from oil, changes in oil revenues would influence other economic sectors including agriculture (same:115).

Agricultural sector is one of the consumers of petroleum and gas oil (Esfandyari & Tarahomi, 2010). Gas oil is used in agricultural sector as a fuel for machinery and irrigation pumps. Thus, changes in oil price would have a great influence on consuming its products and other sources of energy, and ultimately on GDP, on this sector and totally (Mehrabi Basharabadi & Naghavi, 2011:148).

5. Oil Revenues and Agricultural Added-Value

Added-value of agriculture includes added value of subsectors of agriculture and horticulture, livestock and animal husbandry, forest and range, fisheries and aquaculture, and agricultural services, and it is the growth index of the sector that is determined in agricultural production and supply sector (Arab Mazar & Ghasemi Rad, 2009:111). In a country with single-product economy like oil added value of agricultural sector is influenced by revenues of oil export. Change in share of added value of each sector is dependent to the degree of its revenue absorption from occurred shock. If absorbed revenue is spent on fundamental investments and solving problems of that sector it would be followed by increased added value in post-shock years; otherwise, a decrease in a certain sector’s share in GDP without oil would be observed after cross-sectional increase. Agricultural sector is among sectors that its added-value share in DGP without oil would be changed according to changes in oil revenues and every time these
revenues increase significantly share of agricultural sector decreases, and these changes are completely consistent with Dutch disease model (Bakhtiary & Haghi, 2001:121).

6. Oil Revenues and Agricultural Export

During recent decays in Iran, due to several reasons including single-product export, easy access to foreign currency sources from crude oil export, serious dependency to oil, increase in share of oil export from total export, and considerable fluctuations of oil export foreign trade sector has not been developed consistent with current needs and therefore, many problems have been emerged (Tofighi & Mehrabian, 2002:58; Khalilian & Farhadi, 2002:72). In order to exit single-product economy and dependency to oil trade policies of the country must be reviewed and share of other economic sectors like agriculture in foreign trade get more, so that oil sector get out of focus and economic dependency to this sector get minimized (Piri et al, 2011:283). The most important obstacle facing Iran`s agricultural export is due to effects of oil boom, since oil boom decreases agriculture export through channel of artificial reinforcing real exchange rate. This decrease in export is followed by a decrease in production, which in turn, weakens agricultural export again. Therefore, oil boom in country`s current framework of policies is a threat for this sector (Dargahi, 2008:18). On the other hand, oil boom and its revenue increase is followed by an increase in level of domestic demand and this demand increase leads balance of export towards domestic consumption and consequently export slowdown.

7. Review on Foreign Studies

In a study titled “oil prices, financial policies and economic growth of Venezuela”, Al anshasi et al (2006) examined relation between oil price and government revenues, economic growth, consumption, and investment. They argue that dependency of Venezuela`s economy to oil price has increased and it has been followed by lower growth of agricultural and non-oil industries. Results showed that changes in oil prices negatively influences this country`s economic efficiency and Venezuela is suffered from source scarcity.

Pouyana (2006) addressed evaluating effect of increase in oil revenues on agricultural sector in Colombia during 1980-1994. The findings showed that economy of Colombia, particularly its agricultural sector, suffers from Dutch disease; that is, increase in oil revenues results in transfer of employees in agricultural sector to other economic sectors and therefore growth rate of agricultural productions, Land area under cultivation, and labor productivity have seriously been damaged.

Hooker (1996) investigated effect of oil price on employment in agriculture of the USA during 1947 to 1995 and using Granger causality concluded that there is a relation between employment in agricultural sector and changes in oil price such that increase in oil prices results in decrease in employment and it will lasts three years to compensate effect of decrease in employment due to increase in crude oil prices in agricultural sector.
Fard Manesh (1991) investigated the effects of oil revenues in economies of Aljazeera, Ecuador, Indonesia, Nigeria, and Venezuela designing a three-part model. He attempts to prove the hypothesis that in oil exporting countries with a significant agricultural sector by increasing oil prices and oil revenues instead of weakening the industry anti-agricultural phenomenon occurs. By frequency analysis he concluded that due to increase in global prices as well as government support division of manufactory industry is flourished while agricultural sector is weakened due to global prices.

8. An Overview on Internal Studies

Asgharpour et al (2012) investigated effect of exchange rate volatility on agricultural sector export in Iran during 1974 to 2007 using EGARCH(0,1) model. Their results showed that variables of global GDP (foreigners income) and Iran’s GDP have a meaningful and positive effect on agricultural sector export while variables of export goods prices and volatility index have a meaningful and negative effect on agricultural sector. In addition, variables of agricultural products import and degree of trading openness have a meaningful and positive effect on agricultural sector export while variables of terms of trade and exchange rate volatility have a meaningful and negative effect on it.

Najafi Alamdarlou et al (2012) examined effective factors on agricultural products export in ECO member countries using Panel Data approach during 1992 to 2010. Results showed that variables of export price index, GDP, and exchange rate have a positive effect and exchange rate volatility and countries’ populations have a negative effect on agricultural products export. Also, simultaneous effect of real exchange rate shock and remaining facilities shock has a positive influence on agricultural products export.

Piri et al (2011) investigated effect of fluctuations in oil export on agricultural sector growth in Iran during 1971-2007 using auto regression with distributed lag (ARDL) model. Findings suggested that there is a long term and collective relation between variables of added value of agricultural sector and other considered variables in the model, and effects of volatility index of oil export on added value of agricultural sector is meaningful and negative. Furthermore, a meaningful and positive relation between investment entities and agricultural sector export with growth rate of agricultural sector (added value of agricultural sector) in long term is observed.

Using vector error correction model, Hamidehpour et al (2010) examined role of oil revenues and monetary and financial policies on Iran’s agricultural sector. Two long term vectors for the period of 1981-2005 were calculated using Johansen co-integration method. Results showed that regarding estimated long term and short term relations, in long term oil revenues are an appropriate tool in order to improve export and reduce import while expansionary monetary policy in appropriate in order to reduce import and expansionary financial policy is suitable to increase export in short term.
Shirin Bakhsh and Moqqadas Bayat (2010) investigated relation between oil export and agricultural sector as tradable sectors and service sector as untradeable sector. To study symmetrical effects rolling linear regression was used and asymmetrical effects were examined via separation of positive and negative shocks of oil export in three methods of net, scale, and asymmetric using vector auto regression (VAR) pattern. Ratios of rolling regression, service, and oil export showed similar moves. Ratio of agriculture variable moved in an opposite direction of oil exports during almost all the period. In this study separation of positive and negative shocks and Dutch disease test were examined using non-linear method. Regarding asymmetric responses of agricultural and service sectors to changes in oil export, results of estimated VAR model confirmed presence of Dutch disease in Iran.

Mehr Ara and Miri (2010) investigated effect of oil revenues on various economic sectors of oil exporting countries including Iran, Mexico, and Venezuela using co-integration analysis and Granger causality tests in long and short term. Results showed that oil revenue boom results in expansion of service sector and contraction of industrial and agricultural sectors in studied countries; thus, obvious signs of Dutch disease are observed in these countries.

9. Discussion and Conclusion

According to the discussion presented in this study about relation between oil revenues and agricultural sector, analyzing various factors effective in added value of agriculture and agricultural export, and reviewing internal and external articles following conclusions can be drawn: 1. Effects of volatility index of oil export on added value of agricultural sector are meaningful and negative, 2. In long term oil revenues are appropriate tools to improve export and reduce import while expansionary monetary policies are good to reduce import and expansionary financial policies are suitable to increase export in short term, 3. Oil revenues boom results in transfer of employees of agricultural sector to other economic sectors and therefore growth rate of agricultural productions, Land area under cultivation, and labor productivity have seriously been damaged.

According to above mentioned results one can argue that undoubtedly there is a relation between oil revenues and main variables of agricultural sector. Regarding theories and studies, it is suggested that since in developing countries like Iran oil revenues are spent without any regulations and management agricultural sector is always hurt and it would results in anti-agricultural phenomenon. Therefore, evidence suggests an inverse relationship between oil revenues and added value of agriculture and agricultural export.

References


