Survey Effects of Oil Income on Nonoil Export and Effort for Decline in Dependence to Oil Income

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Abstract

There are so much oil and gas reserves in Iran. Therefore extraction from these reserves and sell extracted oil and gas in international markets causes to high oil income for Iran. Especially in some years which oil price increases, our oil income was too high.

In this paper, we want to reveal that, high oil income is not cause to rise of nonoil export. For this aim, we use from data of 1971-2013 and with Johansen co-integration test and Error Correction Model (ECM) extract short run and long run relations. Results of estimation reveal that in Iran high oil income is not cause to many non oil exports in long run and short run. Therefore, we should allocate oil income to import industrial machines and reallocate them to agriculture and industrial sectors which causes to raise national production which will cause to high non oil export. Then, in this condition, our needy exchanges are provided from non oil export and our dependence to oil income will be declined.

Keywords: Oil Income, Nonoil Export, Decline Dependence to Oil Income.

1. Introduction

From 1970, oil income of oil exporting countries increases. Therefore, money of oil sailing should be allocated to economic sectors such as agriculture and industry but Surveys reveal that rise of oil income is not caused to more investment in economic sectors, and rise of national product and more non oil export in Iran. According to surveys, in some Arabia oil countries, money of oil sailing is allocated to investment in different economic sectors and import of new technologies, more employment, more GDP and more non oil export.

The main aim of this paper is to survey relation between oil income and non oil export in Iran. Therefore, this paper's questions are; is there a long run relation between oil income and non oil export? Are the long run and short run relations between oil income and non oil export the same? And third question, is high money of oil sailing caused to more non oil export in our sample in Iran? As follows, in part 2 literature review, in part 3 methodology and estimation results and in part 4 conclusions are surveyed.

2. Literature Review

Pasban (2004) in a survey revealed that with more oil income, production in agriculture and traditional sectors is declined and effect of oil price shock is decrease toward of time. Baky Haskuee (2011) surveyed effect of oil income on exchange rate in Iran. He reveals that more oil income is caused to change of income distribution to different economic sectors. They showed that, there is a long run relation between more oil income, crowding out of capital, GDP and exchange rate in Iran. Ifeakachukwu & Akindele (2013) surveyed effect of oil income on non oil export in Nigeria in period of 1970-2011. They use from Johansen cointegration test and revealed that there is a long run relation between factors and oil income has a negative effect on non oil export in Nigeria.

Riman et al. (2013) surveyed relation between oil income shock, non oil export and value added of industry in Nigeria for period of 1970-2010. The used from VECM and cointegration test to survey long run relation between variables. According to Johansen cointegration test, there is a long run relation between oil income shock and non oil export in Nigeria. Long run relation between variables reveals that oil income has negative effect on value added of industry sector and non oil export.

Dreger and Rahmani (2014) revealed that in exported oil countries, oil income affects on per GDP of these countries. They revealed that there is a cointegration relation between oil income, GDP and investment in Iran and Arabia countries with Panel Data Model.

3. Methodology and Estimation results

In this paper, we use from Johansen cointegration test to survey long run relation between variables and use from ECM to extract long run and short run effects of factors. To survey effect of oil income on non oil export, we use from model which introduces by Enoma and Isedu (2011). In this model, NOE is value of non oil export, EXT is exchange rate and OIR is income of oil sailing. At the first, we survey stationary of our variables. According to Dicky-Fuler test, all of our variables are non stationary (I(1)), but Johansen test reveals that there is a long run relation between variables as trace and Max-Eigen value test. Results of Dicky-Fuler test are reported in table 1.

Table 1: Stationery test

	First difference	level	Variable
I(1)	3/712	0/452	NOE
I(1)	2/651	0/671	EXT
I(1)	5/128	-0/921	OIR

Johansen results are reported in table 2 and 3.

Table 2: Johanse results- Trace effect

Probe	Probe in 0/095	H1	H0
0.0141	47.85613	r$\geq$ 1	r=0[*]
0.8864	29.79707	r$\geq$ 2	r$\leq$1

Table 3: Johanse results- Max-Eigen value test

Probe	Probe in 0/095	H1	H0
0.0185	47.75214	r$\geq$ 1	r=0[*]
0.7664	26.25143	r$\geq$ 2	r$\leq$1

We estimate long run and short run relations between variables with ECM (Error Correction Method) with STATA 12. Estimation result is in equation (1);

$$NOE = \underset{[2/71]}{0/856} + \underset{[3/14]}{0/004EXT} - \underset{[3/71]}{3/81OIR} + e_t$$

$$R^2 = 0/85 \tag{1}$$

(t-statistic is in bracket.)

As equation (1), oil income has negative long run effect on non oil export and more oil revenue is not caused to improvement of other economic sectors. According to estimation results exchange rate has positive effect on non oil export in our period.

At the end, we estimate short run relation between our variables which it's results revealed in equation (2);

$$DNOE = 0/562 + 0/0025 \, EXT - 1/75 \, OIR - 0/4 \, 5e_{t-1}$$
$$\quad\quad\quad (2/21) \quad\quad (2/80) \quad\quad (2/45) \quad (3/12)$$

$R^2 = 0/81$

As above equation, oil income has negative effect on non oil export and this negative effect is more in short run respect to long run. Therefore oil revenue is not allocating to investment in industrial and agriculture sectors and is allocated to import of consumption goods. Coefficient of e_{t-1} is adjustment speed from short run to long run which is -0/45.

4. Conclusion

Aim of this paper is to survey effect of oil revenue on non oil export. We use from data of 1971 to 2013, and use from Johanen Cointegration test and ECM to survey short run and long run effects of oil revenue on non oil export. Results reveal that rise of oil income has negative effect on non oil export in Iran. Therefore high oil income is allocated to import of consumption goods and is caused to low production and non oil export. As offers, for arriving to resistant economic and decrease dependence to oil income, we should decrease dependence of our budget to income of oil sailing and should allocate it to import of technology which is caused to more GDP.

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