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Study the Effect of Trade Policies on Export and Import in Iran

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Abstract: In this study we want to analyze effects of change in exchange rates on the export, import, product prices and others macroeconomic variables. The method which has been used in this study is based on co integration method and vector autoregressive method. In this study first the long-term relationships between variables are determined and then the short-term relationship between variables will be determined according to Impulse response functions.The results show that changes in exchange rates affect on macro economic variables, while there were no effects from exchange rate on macro economical variables.

Key words: Component · Macro Economical Policies · Exchange rate · Impulse response functions · Co integration

INTRODUCTION

This paper investigates empirically, using a VAR model, the response of the and the trade balance to exchange rate shocks for the Iran economy during the period of 1960-2012 and is concerned with the estimation and use of structural rnacroeconometric models. The term "structural" is important as it explicitly excludes the non-theoretical, time series Models of tile vector autoregressive (VAR) type. A structural model is a formalization of a theoretical view of how the economy functions.

*M*acro economical variables have major impacts on activities of many economical sections on many ways. Macro economical policies include monetary, currency and commercial policies. Mutual interactions between major economical variables such as; exchange rates, price levels, Income Oil, interest rates, liquidity, money supply, investment, credits and other's variables are still on top of debate between economists. Monetary and currency policies gained a lot of importance after recently economical growth and economical merges [1].

Real exchange rate is commonly known as a measure of international competitiveness. It is also known as index of competitiveness of currency of any country and an inverse relationship between this index and competitiveness exists. Lower the value of this index in any country, higher the competitiveness of currency of that country will be [2].

A Despite the popularity of the subject in policy analysis and the lack of consensus among different theoretical models, there is relatively little empirical evidence investigating the effects of fiscal policy on the exchange rate and current account. Vector Autoregressive (VAR) models, which have been used extensively to analyze the effects of monetary policy shocks, have recently been employed to analyze the effects of fiscal policy shocks on the economy [2] but there are only a few VAR studies that examine the effects of fiscal policy in open economy models2. In general macro economical policies, especially monetary and trades are administrated to affect the production rate in different economical sectors of country. Faik Koray *et al.*, investigates empirically, using a VAR model, the response of the exchange rate and the trade balance to fiscal policy shocks for the U.S. economy during the period 1981:3-2006:3. The results indicate that positive shocks to real government purchases generate a persistent increase in the budget deficit, a transitory expansionary effect on output and a long-lived positive effect on the price level, but reduce the real interest rate [3].

About this issue Mahmood *et al*. [4] investigate role of exchange rate in affecting the macroeconomic performance of any country is of leading nature. This study has been conducted to investigate whether uncertainty of fluctuations in exchange rate affect the macroeconomic Variables in Pakistan [4]. Berument *et al*. [5], investigate how macroeconomic policy shocks in

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Turkey affect the total unemployment and provides evidence on the differential responses of the unemployment by sectors of economic activity. This paper extends the previous work in two respects. First, this considers not only the response of total unemployment but also the response of unemployment by sectors of economic activity. Second, they consider not only the effect of monetary policy shocks, but also the effects of several other macroeconomic shocks. The quarterly data used which covers the period 1988:01 to 2004:04 from Turkey. A VAR model with a recursive order is employed to estimate the effects of shocks in real GDP, price, exchange rate, interbank interest rate, money supply and own sectoral unemployment on unemployment by sectors of economic activity. The results indicate that the positive income shock is followed by a decrease in unemployment in all economic activity groups during the initial periods except the unemployment in the *Electricity* sector and the *Community Services* sector [5].

MATERIALS AND METHODS

VAR model is one of the methods which have been widely used for analyzing the relationship between macro economical variables and agricultural sectors. When studying the behaviors of multi time series variable, we must consider the bilateral relationship between these variables in a equilibrium system of patterns. If these patterns are containing variable lag we use the term of Dynamic simultaneous equations for them.

Stationary Test: In order to investigate stationary time series test using generalized Dickey Fuller and first order difference [6]. The results show that the series inflation, interest rate and export, import, is stationary by the first order difference series and exchange rate is stationary by the second difference.

Analysis of Cointegration: Economical definition of cointegration is that when two or more than two series of time series get related to each other theoretically to show a long-term relationship. although if these time series have accidental patterns (nonstationary) but in the coming time they follow each other as the minus between them gets stable (stationary) so it shows a co integration between time series [7]. Thus, there are cointegrations among time series related to long-term associate. Since the time series of order have different accumulation if the results of ordinary least squares regression to estimate

Table 1: Result of co integration test

95 critical present	Statistic	Hypothesis opposite	Zero hypothesis
124.2	380.8	1 = r	0 = r
94.1	224.8	2 = r	1 ≤ r
68.5	122.4	3 = r	2 ≤ r
47.2	76.8	4 = r	3 ≤ r
29.6	37.4	5 = r	4 ≤ r
15.4	15.2	6 = r	5 ≤ r

Source: Research foundations

true that there will be cointegration relationship between the variables that exist in this case there is no false regression statistics T, F is meaningful.

Cointegration test based on the maximum test values and special effects test method is Johansson. On the basis of test when the test statistics calculated from the critical value and Johansson presented Jesilius less vector r, i.e. the hypothesis of zero mass is accepted. Therefore the results obtained tree cointegration vector can be seen because the quantity of the test statistics, i.e. 29. 68 from its critical value at 95 percent is less than 37.45 that.

According to variable models and economical theories the most important relations which can be introduced is as below:

- Liquidity equation which in it the Liquidity is affected by the gross national production variables, inflation and Income Oil:

$$LIG = 1136 - 2/09NY + 6/37OIL + 4/31P \quad (1)$$

As it is known from equation 1 each increase in of unit of inflation the Liguidity increases by 4/3 percent which shows the effect of inflation on Liguidity in the country is great.

In a long-term relation National Income in country have shown relationship with Income oil and inflation factors.

$$NY = 35596 + 2/7OIL + 1585P$$

Import equation which in it the import is affected by income oil, inflation, national income,liquidity and interest rates:

$$IMP=130949-1869IN-29/8LIG+2/43NY+7/69OIL+19260P$$

Estimating the Var and Impulse Response Functions: Impulse response function (IRF) shows every response's reaction in a system as a shock in other variables. The effect of shock on macro trade variables on

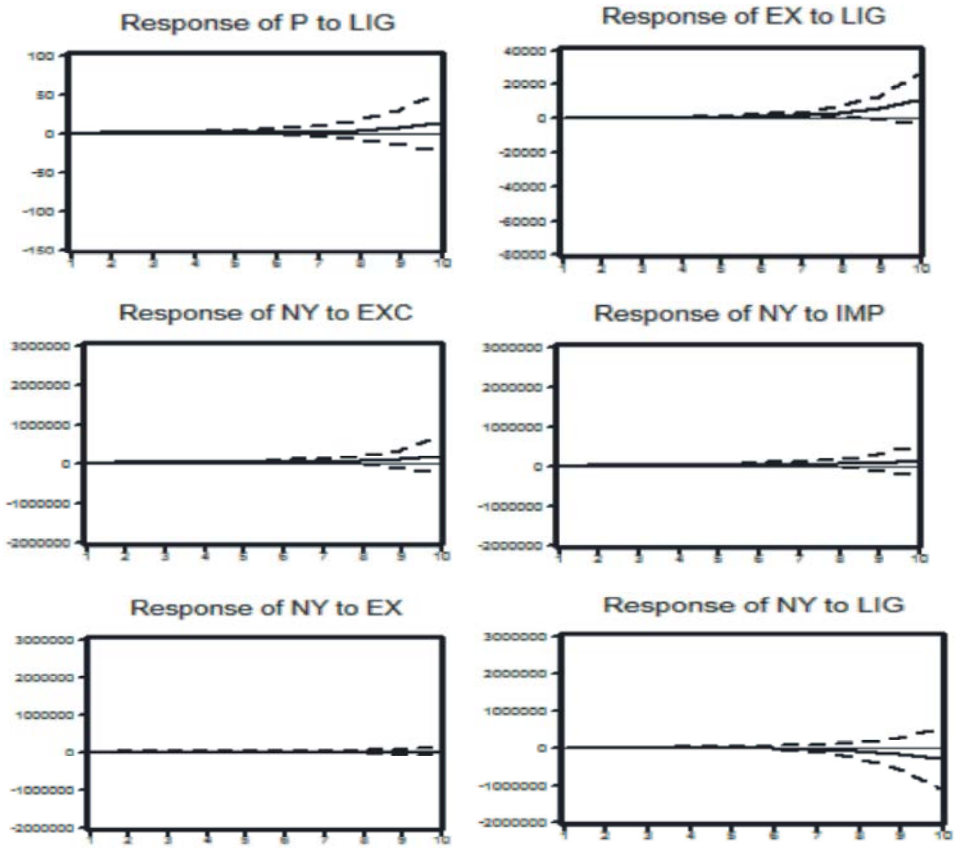

Fig. 1: Variables Response to main shock

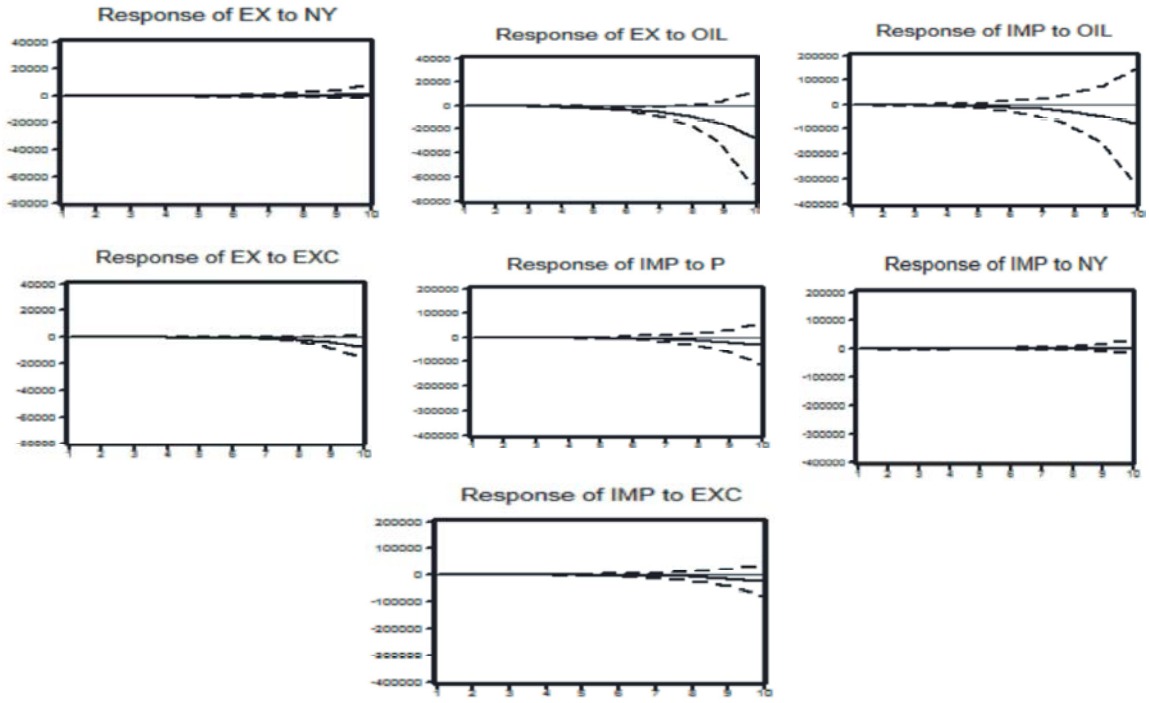

Fig. 2: Trade variable response to macroeconomic shock

main macro economical variables are studied and researched. In total most of the reactions despite the meaningful signs are not meaningful.

In Figure 1 it shows any change in shock on trade variables such as import, export, exchange rates and liguidity on other variables. If a shock implies to liguidity its effect on export and inflation, will increase and this increasing effect will remain for the rest of the period. The reaction to this shock from the national income to this shock won't be constant but will be positive and will u downs in the total period.

And the effect of shock on exchange rate and import on national income will be increasingly until the end of the period and after that will be constant for till the end of the period.

Reaction of main economical variables like inflation, Income Oil, national income and currency rates and its effect on main trade sectors are shown in Figure 2.

if a shock comes to inflation then its effect on import will be decreasing till the end of the period. And if a shock comes to the Income Oil equilibrium its effect on import and export will be increasing till the end of the period.

The effect of the exchange rate on export, import in all the period will be constant and will be decreasing till the end of the period.

CONCLUSION

The main objective of this study is to implying new economical evaluating methods to and time series in analyzing the relationship between main economical factors and variables in trade variables. In this study the long-term analyses are separated from short-term analyses. Long-term analyses are usually related to the structural relations and theoretical limitations in this field are evaluated. Short-term analyses are essential for policy-making studying the reaction of economical variables and departing from long-term relationships is essential. Results show that variables in trade sectors have significant effects on macroeconomic policies and only shock from inflation and income oil has meaningful effect on trade variable.

The reaction of the macroeconomic variables (national income, export and inflation) is from changes in trade policies and especially exchange rate.

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