

# Analysis of Monetary and Fiscal Policy Shocks in Iran Using a Dynamic Stochastic General Equilibrium (DSGE) Model

Davood Manzoor<sup>1</sup>, Anoshirvan Taghipour<sup>\*2</sup>

1. Associate Professor, University of Imam Sadiq

2. Undersecretary of Macroeconomic Management and Planning Organization

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## Abstract

The purpose of this paper is to examine the effects of monetary, fiscal and oil revenue shocks on macroeconomic variables in the framework of rule and discretionary monetary policy. To end this, we use a New Keynesian dynamic stochastic general equilibrium (DSGE) model. Given the dominant role of oil in the country, we consider the role of oil shock in the model through different channels .

The simulation results suggest that monetary shocks have a significant effect on inflation but the effectiveness of monetary shocks is different in rule and discretionary policy .

Government expenditure shocks motivate variables in the real sector, but government development budget has not increased private investment instantly, it will rise slightly with lags. This may be due to different reasons such as long lasting state projects and low precision in the project selection .

Due to dependency of Iranian economy on petro Dollars, an oil shock has a big impact on all variables. A positive oil shock increases production, consumption and employment. However, it raises inflation as well .

**JEL Classification:** E12, H50, E62, E32

**Keywords:** DSGE model; Government budget shocks; oil shock; rule and discretionary policy

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1. Corresinding Author, 09128153495

## Iranian Pistachio Export Competitiveness in World Markets

Abolfazl Mahmoodi<sup>\*1</sup>, Sahar Jalali<sup>2</sup>

1. Assistant Professor, Department of Agricultural Economics, Faculty of Agriculture, Payame Noor University. A. mahmoodi@pnu.ac.ir

2. Graduated MA, Department of Agricultural Economics, Payam-e-Noor University  
Jalalisahar65@yahoo.com

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### Abstract

In the present study, competitiveness of Iranian pistachio exports and competitor countries in the world market are studied. pistachio export advantage using indices of revealed comparative advantage (RCA) approach and vector error correction model (VECM) based on agricultural and non-petroleum export commodity basket were investigated separately. The results showed that Iran has a comparative advantage in pistachio export in the 1975-2012 period and considering both commodity basket, Iran have first ranking in pistachio exports. After Iran, Respectively the Turkey, Hong Kong, Germany, Italy, United States, Belgium and Netherlands have been comparative advantage in pistachio export in the 1975-2012 period. The rating is based on exports of agricultural commodity basket. On the other hand, in recently years, Pistachio export market of Hong Kong, United States, Turkey, Belgium, Germany have become a serious competitor for Iranian pistachios export and Iran's relative advantage in Pistachio export affected from export advantage of these countries. According to these findings, Iran's Pistachio export policy needs to be reconsidered.

**Classification:** N50 .O57 .Q17

**Keyword:** Export Competitiveness, Pistachio, VECM

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\*. Corresinding Author, 09125666289

## Inflation Uncertainty and Real Interest Rates of Bank Deposits in Iran

Seyed Jamaledin Mohseni Zonouzi\*<sup>1</sup>, Akbar Hassanzadeh<sup>2</sup>,

Behrooz Jafarzadeh<sup>3</sup>

1. Assistant Professor of Economics, sj. mzonouzi@urmia.ac.ir

2. PhD Student in Economics – Urmia University, ak. hassanzadeh@urmia.ac.ir

3. Faculty Member of Farhikhtegan Non-profit University of Kerman – Ph.D. Student in Economics. Yazd University, jafarzadeh. behrooz@gmail.com

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### Abstract

Interest as investment opportunity cost or in other words cost of obtaining the credit requirement in the production Process, have a key role in the good's cost price and hence it's necessary to control this kind of variables that have harmful effects on the interest rate's trends. Among this, the unexpected changes in some variables that can have destructive effects on interest rates process and hence cause good's cost price to face with uncertainty, can be more critical. In this regard, this study examines the relationship between inflation uncertainty and real interest rate of bank trust funds in Iran using monthly data for period 1383:1 – 1393:12. For this purpose, the multivariate generalized autoregressive conditional heteroscedasticity model with corrected dynamic conditional correlation approach is applied. The results showed a positive and significant impact of inflation uncertainty on real interest rate of bank trust funds in Iran.

**JEL Classification:** D81, E40, E22, C32.

**Keywords:** Inflation Uncertainty, Interest Rate, MGARCH, cDCC.

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\*. Corresoinding Author, 09143011082

## The Effect of Import Competition on Total Factor Productivity of Iranian Industries

Zahra Karimi Takanlou\*<sup>1</sup>, Jafar Haghghat<sup>2</sup>, Javad Bakhsi Pour<sup>3</sup>

1. Assistant Professor of University of Tabriz, zkarimi1355@yahoo.com

2. Professor of University of Tabriz, haghghat@tabrizu.ac.ir

3. Graduated M. A, bakhshipour@yahoo.com

Received: 2015/09/06

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### Abstract

Today trade is the basis of development of any societies that with its expansion, the industrial enterprises, takes advantage of its benefits and enhances their productivity. Also they earn competitive advantage and further providing domestic needs, can capture the new markets. Among these, the role of imports in trade is very important because the import of capital and intermediate inexpensive goods, reduce production costs, create competitive environment and increase productivity.

In Iran, despite trade liberalization in 1989, policy makers and intellectuals has been toward to expanding exports, while the Iranian industry have enormous potential of production, It is strongly dependent on import of raw materials and intermediate and capital goods.

Therefore, in this study the impact of import competition on total factor productivity were studied during (1992-2012) by using dynamic econometric panel data. The results show that import competition has a positive impact on total factor productivity of Iranian industries. In contrast, trade liberalization and the size of the industry, as a criteria of the size of the domestic market, had a negative impact on total factor productivity.

**JEL Classification:** F13, F12, D21, C23

**Keywords:** Productivity Growth, Competition Import, Theory of Firm Heterogeneity, Dynamic Panel Data

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\*. Corresponding Author, 051-66616471

## Effects of Transportation Infrastructure on Industrial Activities Concentration in Iranian Provinces

Rouhollah Shahnazi<sup>1</sup>, Zahra Dehghan Shabani<sup>\*2</sup>

1. Assistant Professor, Department of Economics, School of Economy, Management and Social Sciences, Shiraz University, rshahnazi@shirazu.ac.ir

2. Assistant Professor, Department of Economics, School of Economy, Management and Social Sciences, Shiraz University, Zahra\_dehghan2003@yahoo.com; zdehghan@shirazu.ac.ir

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### Abstract

Transport infrastructure is an important factor for the spatial distribution of goods, services and innovations within and between regions, and also an important factor in locating and establishing businesses in the region. This research aims to analyze the effects of transportation infrastructure on industrial concentration in the Iranian provinces. For this aim, we have specified econometrics models and estimated them by using OLS with panel-corrected standard errors for 28 provinces of Iran over the period 2001-2011.

The results of econometrics models have shown that cost of transport has negative effect on industrial concentration in the Iranian provinces.

**JEL Classification:** L91, R12, C33

**Keywords:** Transportation Infrastructure, Industrial Activities Concentration, Panel Data, Panel-Corrected Standard Errors.

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\*. Corresponding Author, 07136134438

## Investigate Role of Housing Price in Inflation Targeting Using Dynamic Stochastic Programming

Keyvan Shahab Lavasani<sup>1</sup>, Vida Varahrami\*<sup>2</sup>

1. PhD student in University of Tehran, keyvanshabab@ut.ac.ir

Assistant Professor of University of Shahid Beheshti, Vida.varahrami@gmail.com

Received: 2016/01/01

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### Abstract

In literature about inflation targeting, main factor is interest rate. In new surveys, price of some assets as housing is important in inflation targeting. Iran inflation targeting is based on money changes and is not based on interest rate and housing price. In this paper, we want to survey problems of wrong policy of Iran policy makers. We reveal that, using rate of deposit profit and growth of housing price in two separate models for inflation targeting have same results.

Results of first model shows that policy makers in Iran for determination of interest rate do not attention to economic conditions, inflation and production gap. Therefore inflation and production gap have small response to interest rate changes.

**JEL Classification:** E52, E58, C32, C68

**Keywords:** Inflation Targeting, Interest Rate, House Price, Dynamic Stochastic Programming

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\*. Corresinding Author, 09126147044

## **Analysis of the Effect of Abundance Natural Resources on Private Sector Investment through the Economic Freedom in Selected Countries of Petroleum Exporting**

**Abolfazl Shahabadi\*<sup>1</sup>, Ali Moradi<sup>2</sup>**

1. Associate Professor, Faculty of Social Sciences and Economics, Alzahra University, Tehran, Iran, shahabadia@gmail.com

2. MA of Economics, Department of Economics, University Arak, Iran, ali.artiman.moradi@gmail.com

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### **Abstract**

In this study, tried to investigate the interaction of abundance natural resources and economic freedom indexes (total index, size of government, security structure, property rights, sound money, freedom to trade internationally and regulations) on private sector investment in the selected countries of petroleum exporting for the period 2000-2012. Statistical society is composed of fifteen groups of oil exporting countries as a sample group and fifteen members of developed countries of OECD as a control group. The research model using panel data and the generalized method of moments (GMM) estimated. The results show that the interaction of abundance natural resources and size of government on private sector investment in both countries has a significant negative effect. Too, interaction of abundance natural resources and regulations index on private sector investment in developing countries has a significant positive impact and in oil-exporting countries was significant and negative. The interaction of abundance natural resources and total index, legal structure, property rights, sound money and freedom to trade internationally on private sector investment in both groups of countries has a significant positive impact.

**JEL Classification:** C23, E22, G31

**Keywords:** Private Sector Investment, Economic Freedom, Abundance of Natural Resources, Panel Data

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\*. Corresoining Author, 09126991691

## Does Controlling for Unobservables Solve the Productivity Puzzles? Evidence from Iran

Asal Pilehvari<sup>1</sup>, Mohammadhossein Rahmati<sup>2</sup>

1. Graduated Student from Sharif University of Technology. Asal.Pilehvari91@gmail.com

2. Assistant Professor at Sharif University of Technology. Rahmati@sharif.ir

Received: 2015/09/14

Accepted: 2016/10/25

### Abstract

Empirical studies commonly use the Solo Residuals to estimate the Total Factor Productivity. In these models, production function parameters are estimated using the OLS method, but because the method does not consider the simultaneity problem in productivity shocks and input decisions, its estimates are biased and the resulted productivities are unreliable. The findings based on the OLS estimates support that small firms are more productive, and the average productivity of public firms are higher than private ones. Moreover, they contend that the share of labor in production is as low as 40%. In this paper, we show that productivity based on the Solo Residuals misleads policy makers, and we compare various methods in estimating productivity for six industries in Iran during 2005-11. In particular, we compare OLS, GMM, and semi-parametric approaches and find that the method proposed in Levisohn, Petrin (2003) is the most suitable method to estimate the production function. We find that the share of labor in production using micro datasets for these six industries is between 0.6 and 0.8, while the share of capital is less than 0.2. In contrast to prior studies, the larger is the firm, the higher is its productivity, and among large public and private companies there are no significant differences in productivity.

**JEL Classification:** C52, C33, C18, C15, D24, L60

**Keywords:** total factor productivity, production function, parametric methods, plant level, Industry

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1. Corresponding Author, 66165862



## The Price and Income Elasticity's of Import Demand of Drugs in Iran

Hossein Panahi<sup>1</sup>, Sakineh Sojoodi<sup>\*2</sup>, Mahnesa Marandian<sup>3</sup>

1. Associate Professor of Economics, University of Tabriz, panahi@tabrizu.ac.ir

2. Ph D in Economics, University of Tabriz, sakinehsojoodi@gmail.com

3. MA in Business Management, University of Tabriz, marandian\_m@hotmail.com

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### Abstracts

One of the main principles of resistance economy, is to support domestic production and limiting imports, especially in sectors where there is the possibility of import-substituting production. This requires adjustment of exact trade policies, and to achieve this, identifying the structure of imports demand function and also price and income elasticity of import demand is necessary. This necessity is much more in the case of critical goods such as pharmaceutical. Therefore, Policy making in the field of drug imports, including quantitative ceilings or tariff on imported goods requires precise information about the sensitivity of import demand to price and income, as well as being essential or luxury of imported drugs for domestic consumers. The aim of this study is to estimate the price and income elasticity of imports by origin of imports to Iran (Switzerland, Germany, France and other countries) over the period of 1992 to 2014 and using Auto Regressive Distributed Lag (ARDL) and Source Differenced Quadratic Almost Ideal Demand System (SDQUAIDS) method. The results show that the income and price elasticity of import of drugs, both are smaller than one and the income elasticity is greater than the price elasticity. Estimating the elasticity by the origins of imports showed that the income elasticity of import of drugs from France and Germany is greater than one. Also the price elasticity of imports from all origins under study is less than one.

**JEL Classification:** Q21, D31, F17

**Keywords:** Imports of drugs, Price elasticity, Income elasticity, Source Differenced Quadratic Almost Ideal Demand System.

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1. Corresponding Author, 04133392360

# Estimation of Modified Cagan Money Demand Function with Exogenous Shocks in Iran Economy

Iman Bastanifar\*

Assistant Professor, University of Isfahan, Department of Administrative Science and Economics,  
Faculty of Economics

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## Abstract

Iran's economy is recognized as a high inflationary country (for nearly all years after Islamic revelation) which is suffered to external shocks such as external conflict interactions (for example war and sanctions) and oil price shocks. Therefore, analysis and estimation of money demand in Iran should consider above issues in order to have efficient money supply policy.

This paper, apply HSE<sup>1</sup> index to estimate the effects of external conflict interactions. Hodrick-Prescott filter has been used to estimate expected inflation. The money demand function of modified Cagan's is estimated during 1979 to 2013 by ARIMAX and VAR methods. The results show that, expected inflation by 3 lags, has negative effect on money demand but external conflict interactions by two lags and oil price has positive effects on the money demand.

**JEL Classification:** E41, E52, C50

**Keywords:** Money demand, Cagan, Exogenous shocks, Expected inflation.

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\*. 03137935216

1. Hufbauer, Schott and Elliott (HSE)