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A New Keynesian Framework for Monetary Policy Analysis in Iran's Economy. A Dynamic Stochastic General Equilibrium Approach

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Abstract:

This paper focuses on New Keynesian framework for monetary policy analysis of Iran. It considers a dynamic stochastic general equilibrium (DSGE) models. This article expands a sensitivity analysis of the optimal rules to deep structural parameters and investigating properties of an optimal simple rule with respect to prevailing type of shocks which is the main purpose of the article. Finally, the study highlights how an optimal policy rule depends on model structure, on the model calibration and nominal rigidities.

According to the research findings, based on the theoretical expectations, the effect of a positive shock inflicted on the government investment leads to an increase and gradual accumulation of fixed capital formation in the public sector. Among estimated parameters, consumption is the first affected and reduces, then employment increases consequently, finally production will also be affected. Also with the shock of oil revenues, increased oil revenues which results in public investment at first, because of the increase in oil revenues, the government enhances development expenditure. Though, increase in development expenditure is more than increase in current

expenditure. Enhancing development expenditure and construction spending causes total spending increase. As a result of increased production of oil income, consumption and total investment will rise. This leads to inflation too.

Keywords: monetary policy analysis, New Keynesian Approach, Bayesian estimation.

JEL Classification: E12, E52, E58, E61, O53.

1. Introduction

Accordingly, and with the development of the theoretical implications of this discussion, a large number of researchers' attempts to understand the connection between monetary policy, inflation and business cycles have led to the development of a framework which is called New Keynesian (NK) model which is widely used for the analysis of monetary policy. These new models, combine Keynesian principles (imperfect competition and lack of nominal flexibility) with a dynamic general equilibrium framework that was already largely dependent on real business cycle (RBC) model. These models can be used to analyze the relationship between money, inflation and business cycles and assessing the utility of alternative monetary policy (Benchimol 2011).

In this article I use the simple monetary rule. The main objective is to discover a set of regularities that describe the optimal properties or characteristics of a simple optimal rule in which the central bank faces data information uncertainty. For this purpose I use Calvo pricing with indexation to induce sticky domestic prices. With a domestic economy of this type and facing a number of domestic and external shocks and also the economy is assumed to have a welfare maximizing central bank.

Conclusion

According to above mentioned in accordance with the theoretical expectations, following the effect of a positive shock inflicted on the government investment which leads to increase and gradual accumulation of fixed capital formation in the public sector, consumption is first affected and reduces, then employment increases. Consequently, production will also be affected. This result is a little different with theoretical approach of Fukava (2012) research because with a neo-classical approach, the increase of public sector formation often funded through taxes and this tax increase from a welfare analysis approach has a negative effect on household wealth and general family well-being which results in consumption reduction and increase the supply of labor.

But what happens here is financing projects through oil revenues though the effective channel is different specifically this effect has different fluctuation for various times. So when development projects are carried out without interruption in terms of time, employment happens more. On the other hand due to the increased role of states in financing projects, reduction of the capital rent cost and inflation will also happen. Also it is notable that government expenditure Increase causes state capital increase which leads to the long-term effect of shock effect inflicted on government investment

Also with the shock of oil revenues, increased oil revenues results in public investment at first, because the increase in oil revenues, the government increases development expenditure. Though increase in development expenditure is more than Increase in current expenditure. Enhancing development expenditure and construction spending causes total spending increase and as a result of increased production of oil income, consumption and total investment will rise. This increase leads to inflation too. Though by increasing the inflation resulted from oil revenues, the monetary authority will react through reducing the growth rate of the monetary base. However, the continuation of oil injection to the monetary base action to reduce inflation will be eroded and the government will be able to control inflation for a short time then the consumer welfare will reduces.

However, with entering a monetary shock to the economy, according to the figures, inflation increases, both real wages and real rent of capital decrease then consumer welfare reduces. With the emerged inflation emerged of a monetary shock, the government and the central bank react their anti-inflationary response in the form of monetary policy and reduction of money growth rate which result in production reduction, investment decrease and government spending cuts.

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