Conflict of Interest Rates and Economic Growth

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ABSTRACT

Issues of interest rates have been one of the most controversial economic issues. Thus, the role of interest rates in the economy and its impact on economic growth in the economy is the most important. Such that different scholars have different perspectives on it. Thus, Theories studied in the economic literature on interest rates is very important. This article is based on existing theories and using mathematical models, Attempts to analyze the causes and effects of the monetary interest rate. This paper uses LIZREL software and during the period 1972-2011 in Iran's economy performed. The results indicate the monetary interest rate has a negative effect on economic growth.

KEYWORD
Monetary interest rate, Economic Growth, Human capital, Rate of time preference, LIZREL

INTRODUCTION

Issues of interest rates have been one of the most controversial economic issues. The present study aimed to evaluate the comprehensive study of the role of interest rates in the economy. Due to changes in the interest rate it has asignificant impact on the decisions of economic agents. As a variable in macroeconomic policy has been proposed. On the other hand, many factors influence the changes in interest rates.

CONCEPT OF INTEREST

There is considerable disagreement among economists about interest rates. Some have defined benefit cost of money, when it is considered income from capital. And other defined. Therefore, before reviewing the various historical theories of interest, a brief explanation about the concept of the economists is essential. Economic phenomena of interest that existed before the birth of Christ in the lives of human economic and philosophical and religious beliefs is to satirize it. The first philosophers knew that usury interest income from lending money to be made. Wick sell[10] two types of bank interest rates and the natural divide of his natural interest rate is the rate of gain. In The theory of interest Fisher [5]. relatively complete concept of interest is presented.

A REVIEW OF PREVIOUS STUDIES ABOUT THE INTEREST RATE

Much research has directly and indirectly, in relation to interest rates has been conducted The relationship between interest rates and other macro-economic variables such as economic growth, inflation, investment, and etc. In the following we will refer to some of them. kohzadi and noferesti [9]. In a study entitled "Effect of changes in interest rates on inflation", stretching general price level than the long-term interest rates by model Examined. Results indicate that the long-term and short-term interest rates, inflation is significantly affected. But the effect is very small. Hence, in spite of a significant relationship between interest rates and inflation, lower interest rates as a policy instrument to control inflation is not recommended. Bidabad , To assess the effects of interest rates on the macro-economic variables in the econometric model is of help. Using this model, bank loan interest rates in different scenarios and then the simulation model is reduced. The simulation of the policy to reduce interest rates on Iran's economy shows. Shakeri [11] Have said that before taking the appropriate bank interest rate policy, Economic development of the country Placed in the right direction. Oda, Nagahata [6]. Lower bound on nominal interest rate is zero when the effect of monetary policy in Japan is considered to be investigated. Oda & Ueda [3]. in a study of the effects of monetary policy of zero nominal interest rate paid.
**TIME PREFERENCE, MONETARY INTEREST RATES, ECONOMIC GROWTH**

In this section, using the model of endogenous technological development of Romer [12], in pure form Ramsey (Lack of time preference), RAMSEY--KEYNES and A situation in which human capital is a function of the interest rate is negative, Attempt The effect of time preference and interest rate monetary impact on human capital and technology, economic growth is explained. For this purpose, optimal control method used to establish the Hamiltonian function.

**IN PURE FORM RAMSEY**

The time preference rate is assumed to be zero.

Assuming that $\sigma > 0$, $\sigma \neq 1$ and Zero time preference Maximization problems are:

$$Max \quad W = \int_0^t \frac{1-\sigma}{1-\sigma} dt$$

$$St. \quad P = \partial_t p$$

$$K = \alpha + \beta - 1 \beta \alpha + \beta (h - p) \alpha L \beta K^{1 - \alpha - \beta} - C$$

$$P(0) = P^0 \quad K(0) = K^0$$

The Hamiltonian function is:

$$H = \frac{\xi^{1+\sigma}}{1-\sigma} + \theta_1 (\partial_t p) + \theta_2 \left( \frac{\alpha + \beta - 1}{L} \right) (h - p) \alpha L \beta K^{1 - \alpha - \beta} - C$$

The solution to this optimization problem can be concluded:

$$\eta = \frac{dY}{K} = \frac{dC}{C} = \frac{dA}{A} = \frac{\theta (\alpha + \beta)}{\alpha \sigma + \beta}$$

Based on the results obtained, the probability of success and the positive impact of research and human capital and consumption elasticity of substitution between the two points of time (flat rate of consumption) has a negative effect on economic growth.

**IN RAMSEY-KEYNES**

In this case, Time preference rate is assumed to be zero.

The optimization problem is:

$$Max \int_0^\infty \frac{1-\sigma}{1-\sigma} e^{-\rho t} dt$$

In this case, the constraints are adverbs ago. The Hamiltonian function is:

$$H = \frac{\xi^{1+\sigma}}{1-\sigma} e^{-\rho t} + \theta_1 (\partial_t p) + \theta_2 \left( \frac{\alpha + \beta - 1}{L} \right) (h - p) \alpha L \beta K^{1 - \alpha - \beta} - C$$

The result is the following g optimization problem:

$$\eta = \frac{dY}{K} = \frac{dC}{C} = \frac{dA}{A} = \frac{\theta (\alpha + \beta)}{\alpha \sigma + \beta}$$

These results indicate the existence of a negative effect on economic growth in the long run is the time preference.

As mentioned earlier, one of the roots of subjective time preference rate of interest. There was a time preference in the allocation of resources between consumption and investment, investment means more value to the consumer is the result of the continuing decline in investment and growth in the less stable.

**HUMAN CAPITAL SUBJECT TO INTEREST RATE**

This is despite the fact that in terest paid in and come without work, motivation an experience, investment in education, research and technology and entraps reneur ship in centvest reduce; Human capital(h) is a function of the interest rate.

$$h = h(r) \quad h' < 0$$

The optimization problem is:

$$Max \quad W = \int_0^t \frac{1-\sigma}{1-\sigma} e^{-\rho t} dt$$

$$St. \quad P = \partial_t p$$

$$K = \alpha + \beta - 1 \beta \alpha + \beta (h - p) \alpha L \beta K^{1 - \alpha - \beta} - C$$

$$P(0) = P^0 \quad K(0) = K^0$$

The Hamiltonian function is:

$$H = \frac{\xi^{1+\sigma}}{1-\sigma} e^{-\rho t} + \theta_1 (\partial_t p) + \theta_2 \left( \frac{\alpha + \beta - 1}{L} \right) (h - p) \alpha L \beta K^{1 - \alpha - \beta} - C$$

The resulting optimization problem is:

$$\eta = \frac{dY}{K} = \frac{dC}{C} = \frac{dA}{A} = \frac{\theta (\alpha + \beta)}{\alpha \sigma + \beta}$$

The results show that the rate of negative impact on human capital, the negative effect on economic growth. According to the results obtained from the mathematical model, it is clear that interest rates will have a negative effect on economic growth. The next section of the paper, the interest rate and economic growth of Iran will be tested.
for the effect of interest rate son economic growth see nin Iran. The interest rate is the rate of time preference, which is one of the majors our ces of Iran's economy and its relationship with economic growth, then will review.

ESTIMATED MODEL
The equations of the model will be as follows:

\[ Y_1 = \lambda_1 \rho + \varepsilon_1 \]
\[ Y_2 = \lambda_2 \rho + \varepsilon_2 \]
\[ Y_3 = \lambda_3 \rho + \varepsilon_3 \]
\[ Y_4 = \lambda_4 \rho + \varepsilon_4 \]
\[ \rho = \sigma_1 X_1 + \sigma_2 X_2 + \sigma_3 X_3 + \sigma_4 X_4 + \sigma_5 X_5 + \sigma_6 X_6 + \zeta \]

Variable x variable sin flounce the rate of time preference and Variables y are Influential variable.

EVALUATION OF THE RESULTS
Before examining the results Note that in this model the multi-factor model based on multiple variables MIMIC,is designed to fully LISREL model is a special case of LISREL software such models to estimate the association between the variables in the variable vector Y with latent variables are held constant. The final selected model, the variable of interest is GDP.

SPECIFIC INFORMATION MODELS
Results of the structural equation for determining the rate of time preference variables and the influence of the Iranian economy.

\[ Y_1 = 1/49 \rho + \varepsilon_1 \]
\[ Y_2 = -0.30 \rho + \varepsilon_2 \]
\[ Y_3 = -0.59 \rho + \varepsilon_3 \]
\[ Y_4 = -0.84 \rho + \varepsilon_4 \]
\[ \rho = -0/94 X_1 + 0/27X_2 +0/07X_3 +0/53X_4 +0/03X_5 - 0/29X_6 + \zeta \]

Signs of the coefficient s obtained are consistent with the oretical background.

CONCLUSION
In this paper, we introduce structural equation modeling as an important method for analyzing complex data structure and interaction effects of the variables analyzed simultaneously. The model of the factors affecting the rate of time preference, life expectancy, income per capita, unemployment levels in the population, inflation, the proportion of university graduates in the private sector costs to income ratio was obtained. And factors that influence the rate of time preference, GDP, economic growth and private sector investment was introduced As was observed inverse relationship between them, the result obtained in the previous section, it was confirmed.

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