

## The Impact of Monetary Policy on Economic Growth in Iran

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**Abstract:** Evolution of money supply and gross domestic product are in a close relationship. This study examine the relationship between money supply and economic growth in Iran adopting ordinary least squares (OLS) technique and also uses data obtained from the central bank of Iran during 1974 to 2008. To do so, using Levine and Renelt growth model we found that there is a positive and significance relationship between money supply and economic growth in Iran.

**Key words:** Money Supply • Economic Growth

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### INTRODUCTION

The relationship between monetary policy and economic growth has been more important in the field of monetary economics [1]. Because of the importance of economic growth among the macroeconomic objectives of developed and developing countries, persistent concern has always been given among monetary economist including Mckinnon [2], Shaw [3], Fry [4], Mathieson [5], Asogu [6], Odedokun [7] and Levine [8] to the relationship between money supply and output.

Economists have dissension on the effect of money supply on economic growth [9]. While some believe that the most important determinant of economic growth is variation in the quantity of money and that countries that devote more time to studying the behavior of aggregate money supply rarely experience much variation in their economic activities. Others are suspicious about the role of money or gross national income Robinson [10].

The implication of the stability of the relationship between money and economic growth will show the effectiveness of monetary policy following the conventional Hicksian IS-LM analysis [11]. The purpose of this article is to investigate the impact of money supply on economic growth. The paper organized as follows. In continue and in second section, theoretical foundation and experimental evidences as review of literature are described. Third section of study attributed to introducing methodology. In fourth section, Research findings are presented and the final section is devoted to conclusions.

**Review of Related Literatures:** As mentioned above, money supply exerts considerable influence on economic activity in both developed and developing economies. Monetary economists have long been concerned with the nature of the causation between money stock and real economic variables. If money stock was solely determined by real economic activities, then monetary policy makers would be Ineffective. If changes in the money stock had a significant effect on changes in real economic variable, then monetary policy role would be very effective. If a bilinear causal relationship between money and real economic activity, this would lead to ambiguous results. Given these circumstances, monetary policy should be accompanied with great care.

Totally, the relationship of money with real variables in economic is one of the long-standing theories in monetary economics literature that is called the Quantity Theory of Money:  $M.V = P.Y$ , In This function M (quantity of money) in circulation may be represented by any monetary aggregate such as M0, M1 or M2; V, velocity of money; P, price level that usually measured by GDP deflator or CPI (consumer price index); Y, real value of aggregate output (GDP). This identity usually known as the equation of exchange has generated several debates among economists. First, it has been debated that MV causes PY or PY causes MV. Second, whether velocity (V) and output (Y) are fixed (constant) or not. Third, whether money supply (M) is fixed by the central bank or not? In the classical model of economic output is determined by level of capital and labor. Velocity is assumed fixed therefore any exogenous

change in money supply leads to change in price level. Money in this case does not have any impact on the real variables. In contrast, According to early post-Keynesian economist such as Joan Robinson [12], Kaldor [13] and Moore [14-17], money appears in the economy along with production when banks agree to honor debt contracts with firms. As the economy grows, banks increase their loans to meet the growing needs of the system, either to pay wages or to remunerate other factors of production (indigenous money). The creation of money is thus parallel to, but must not be confused with, the creation of income. As is argued by Joan Robinson [12] and by post-Keynesians in general, the supply of money expands and contracts with the needs of production, in response to expectations of aggregate demand, through the banking system. There are three distinct theories of money supply endogeneity: those presented by Accommodationists', Structuralists' and the Liquidity Preference School. Kaldor [13], Weintraub and Moore among others present money endogeneity as accommodative. Kaldor's critiques of monetarism have two parts: the non existence of exogenous money supply and the absence of stable demand for money. Kaldor describes the money supply function as endogenous determined by the requirements of firms. The causal relationship runs from the money stock to the monetary base. Friedman reacted to Kaldor's critique and admitted the possibility of reverse causality. Basil Moore [17] presented this approach as the money supply (central bank money) function drawn as a horizontal line with the interest rate on the vertical axis. Given the rate of interest, the money supply is determined by the demand for loans and central banks cannot control the demand for loans. Structuralists claim that there is no requirement for full accommodation and that interest rates may increase endogenously.

In an attempt to link money supply to economic growth recent contributors in the new economic growth literature have considered the role of financial structure, this presupposes that the level of money stock drives economic growth.

Some researchers provide short statements of the historical perspective of issues involved and discuss the various implications of received interest in monetary aggregates in the determination of the level of economic growth in developing countries. Some researchers have found evidence of the predictive ability of monetary aggregates [18, 19]. Though, some of these studies argued that such relationship seems to have changed over time [18].

The questions whether money causes output appear to be important for many economists working in the area of macroeconomics. The direction of causation between money and output is an important issue for many policymakers and economists since it reveals appropriate monetary policy. The linkages have been focused extensive debate and analysis macroeconomics literature has been the precise relationship between money and output [20, 21]. Theoretically, models are constructed to show that money can affect output via different channels, including unanticipated monetary shocks, real and nominal rigidities and menu costs. Most economists accept that the causal ordering runs from nominal monetary aggregates to nominal income. However, the issue of how variation in nominal income is manifested between real output and prices remains unresolved.

Similar studies that have found a strong support for a positive relationship between money supply and growth include [22-25] others include [26-28]. Others include Acemoglu and Ziliboti [29], Mansor [30] and Owoye and Onafowora [31]. Modern macroeconomic theories of money and economic development seem to agree that there exist a systematic relationship between money and economic development.

**Methodology:** Economic growth is one of the substantial problems in the developing countries. There are many models to analyze the impact or factors determining economic growth. As demonstrated by Levine& Renelt [32] and Barro [33], there is no public model to economic growth. Levine& Renelt proposed the following model which has been used later in many studies. [34, 135].

$$Y = \beta_1 I + \beta_m M + \beta_z Z + U$$

Where Y stand for the rate of growth of gross domestic product and I is the set of variables always included in the regression, M is the variable of interest, and Z is a subset of important independent variables that used in past studies. Based on above discussion in this study we use the following model:

$$\dot{GDP} = \beta_0 + \beta_1 \dot{L} + \beta_2 EXPO + \beta_3 GY + \beta_4 IY + \beta_5 \dot{M2}$$

Where GDP is the rate of growth of gross domestic product,  $\dot{L}$  is the rate of growth of labor (In two equation in Table 1,  $\dot{L}$  substituted with  $\dot{L}$  that this variable is active population), EXPO is the rate of the export, GY is the ratio of government expenditures to gross domestic product, IY is the ratio of the aggregate investment to GDP and  $\dot{M2}$  is growth rate of our interest variable namely, money supply.

Table 1: Coefficient and t-statistic of Equation

Independent Variable	Eq. 1	Eq.2	Eq.3	Eq.4	Eq.5	Eq.6	Eq.7	Eq.8
$\dot{L}$ Growth Rate of Labor	-3.8 (-0.69)	-0.51 (-1.1)	-1.8 (-2.3)	-2.5 (-2.6)	-2.2 (-2.8)	-7.2 (-2.9)		
$\dot{L}\dot{L}$ Growth Rate of Labor (wide definition)							0.27 (0.3)	-9.2 (-4.3)
$\dot{E}\dot{X}P O$ Growth Rate of Export	0.17 (5.9)	0.17 (6.4)	0.18 (6.5)	0.18 (6.7)	0.18 (6.8)	0.2 (7.4)	0.17 (5.7)	0.2 (8.4)
$\dot{G}Y$ G/GDP Ratio	-21.3 (-2.5)	-21.1 (-2.7)	-14.6 (-1.7)	-27.2 (-2.6)	-25.1 (-2.6)	-10.3 (-1.3)	-27.3 (-2.9)	-9.9 (-2.4)
$\dot{I}Y$ I/GDP Ratio	36.3 (3.3)	29 (2.7)	35.3 (3.4)	41.6 (4)	40.1 (4)	96.3 (3.4)	32.4 (2.4)	103.9 (4.5)
$\dot{M}2$ Growth Rate of Money	0.25 (3.7)	0.2 (2.9)	0.16 (2.2)	0.18 (2.6)	0.17 (2.4)	0.18 (2.7)	0.24 (3.6)	0.17 (3)
$\dot{L}*\dot{D}U M J$			1.5 (2.4)	1.7 (2.8)	1.9 (2.9)	7.1 (2.8)		9.3 (4.1)
$\dot{D}U M J$ Dummy Variable for War Period		3.5 (2.4)						
$\dot{L}*\dot{D}U M E$					1.19 (2.1)			
$\dot{D}U M E$ Dummy Variable for presidential election				3.2 (2.1)				
$\dot{I}Y * \dot{D}U M J$					-68.8		-80.2	
$C$ Constant								16.3 (2.3)
$R^2$	0.66	0.72	0.72	0.75	0.75	0.76	0.66	0.82
$\bar{R}^2$	0.62	0.67	0.67	0.69	0.7	0.71	0.71	0.77
D.W	1.4	1.5	1.5	1.7	1.7	1.7	1.7	2.2

\* Resource: authors calculations

\*\*The term in parentheses is t-statistic

The data employed are annual period from 1974 to 2008. The data source is from the Central Bank of Islamic Republic of Iran.

**Empirical Results:** In this section, the O.L.S results of model that mentioned in previous section presented in table 1. Our results in all equation show a positive and significant relation between M2 and gross of GDP.

### CONCLUSION

This study evaluates the effect of money supply within the institutional framework and basic theoretical model on economic growth. The findings albeit support that aggregate money supply is positively related to economic growth.

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