Effects of monetary and fiscal policies on the agricultural growth in Iran
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ABSTRACT
The purpose of this study is to examine the impact of monetary and fiscal policies of the agricultural sector in Iran. Investigated Subject from the role of agriculture in the economy and from the impact of monetary and fiscal policies in the development of the agricultural sector has special importance. To perform this study mainly, non-structural econometric methods is used. In this regard, according to the theoretical basics, the effectiveness of selected variables including liquidity as a tool of monetary policy and government spending as a policy tool of the value added tax. And investment in the agricultural sector in the short and long term is measured. To assess the short- and long-term relationships and mechanisms of collective model of vector error correction (VECM) ARDL model is used. The obtained results show that there is a long-term relationship between fiscal policy and the added value of investment in agriculture and between monetary policy and the value added. But in the long term, there is no relationship between monetary policy and investment.

KEY WORD: Monetary and fiscal policies - the agricultural sector - non-structural approaches - Econometrics - Autoregressive model with massive lag (ARDL)

INTRODUCTION

The main aim of economic policy is the attainment of full employment, price stability, economic growth and equilibrium in the balance of payments. To achieve the above aims monetary and fiscal policies mainly used and these policies through changes in aggregate demand are transmitted its effects to the economy. In relation to the effectiveness of monetary and fiscal policy, there are two extreme views; Classical economists consider that the demand for money compared to interest rate is insensitive, and Investment is sensitive to interest rate.

While Keynesians claim unlike mentioned theories, therefore economists believe the opposition to financial policies. Pulions believe that the private sector economy is inherently stable, so if government policies do not distort the wrong economic stability, fluctuations in income may arise Essen, but tolerable level of unemployment and inflation will be very low. On the other hand, there is no belief to monetary and fiscal policies that seek state intervention in economic affairs. Since Keynesians considered private sector economy widely unstable, (The evolution of technology, involuntary unemployment, etc.), thus monetary policy and financial stability is necessary for economics. Although in real world, both Monetary and fiscal policies may have effects. Government fiscal policy through development programs and annual budgets and construction on the one hand by means of current costs explain and apply the tax revenues, Monetary policy with the goal of influence the economy through monetary and exchange variations may apply. The increasing importance of agriculture in the economy of Iran on the one hand, and the effectiveness of monetary and fiscal policies on the part of the other side, cause the impact of these policies on the agricultural sector to be considered. This study evaluates the effects of changes in government expenditure as an important tool of fiscal policy and the liquidity as an important tool of monetary policy on the agricultural sector's growth.

2. Literature Review:
Lap (1990) review and found the relationship between agricultural prices and monetary policy that there is a relationship between money and prices of agricultural, and concluded that the influence of money on prices of other goods is greater than the impact on agricultural products. Devadas (1990) examined the relationship between agriculture and the public economy. In this paper the effect of monetary policy on agriculture in the United States of America during the period has been investigated 82-1950. The results show that the expansionary monetary policy cause increase export prices and agricultural sector income, and restrictive
monetary policy have a negative effect on the agricultural economy. Tada (1991) in an article by estimating an econometric model, have been measured the effects of agricultural policy and macro-economics, especially monetary policy, interest rates and exchange rates on Japanese agriculture. This study examines the agricultural sector in general and specifically citrus and meat market. The results suggest that restrictive implement policies like increasing interest rate, and increase the value of the national currency reduces the strength and competitiveness in international markets.

Therefore decrease the benefit of the manufacturers of export goods compared to other manufacturers. Fotros (1996) has been studied the effect of monetary and fiscal policies on the main variables of the agricultural sector with OLS 1971-1991. Results show the government’s fiscal policy has a positive effect on agricultural production. Government fiscal and monetary policy had a positive effect on agricultural investment. Moayed (1996) studied the effect of monetary and fiscal policies in private sector during the period 1959-1994 in Iran. Equation under estimation is an optimization model of the periodic consumption, which is based on maximization of the individual utility. Estimates is made for OLS and 3SLS by using time series data, in three ways cumulative, average and difference of the first order. Estimation results show that government spending has a positive effect on private consumption and in other words, goods and services provided by the government and the private sector have been used as complementary goods. Finally, according to the results, the effects of monetary expansion in private consumption is positive, since monetary expansion reduces liquidity constraints, this practice has led to a rise in private consumption. Moghaddasi (2000) is examined the major economic variables, monetary and fiscal policies in agricultural sector by using autoregressive integration vectors for the 1971-1997. He concluded that the short-term effects of monetary policy on the agricultural sector is more than fiscal policy, in the long term effects of monetary policy and fiscal policy acts.

3_Method:
Considering that in this research, time series data for 1971-2000, have been used, for the correct operation and performance statistics of t and f, this series must be resident, otherwise cause false regression coefficients. Recent advances in time series analysis has shown that if the variables in the model be Non static, to estimate these patterns the cointegration techniques and error correction mechanism can be used. The existence of cointegration between variables means long-term relationship between the variable but short-term imbalances may be exist. For short-term fluctuations associated with the long-run equilibrium values of the variables, the error correction model (Ecm) is used. For cointegration regression testing, ARDL technique is used.

\[ A(L)Y_t = B(L)X_t + U_t \]

In this equation \( A(L) \), \( B(L) \) lag functions are as follows:

\[ A(L) = 1 - a_1 L - a_2 L^2 \cdots \cdots - a_p L^p \]

\[ B(L) = Y_0 + Y_1 L + \cdots \cdots + Y_q L^q \]

We use the following equation to estimate the long-term pattern.

\[ \hat{B} = \frac{\sum_{i=0}^{q} \hat{Y}_i}{1 - \sum_{i=1}^{p} a_i} \]

Requirement for tendency dynamic pattern ARDL towards a long-term equilibrium is that the sum of the coefficients of the dependent variable is less than one in the dynamic pattern ARDL. Therefore for test cointegration, it is necessary to hypothesis testing is carried out:

\[ H_0: \sum_{i=2}^{P} a_i - 1 \geq 0 \]

\[ H_1: \sum_{i=1}^{P} a_i - 1 \leq 0 \]

Above quantity with critical value given by Dole Banerjee (1992) are compared, if it is greater than the critical value, there is a long term relationship.

4_Results
In this study we used variable liquidity as a tool of monetary policy and fiscal policy as a means of changing the amount government spending, for analyzing the impact of monetary and fiscal policies on the added value and investment of the agricultural sector. Dickey Fuller generalized method is used to evaluate the static variables. The above results show that the co-integration variables are from degree one (1) I. for determining ECM model and estimating long-term relationships, ARDL method is applied. The above results show that there is a relationship between fiscal policy variables and the value of investments However, there is not a long-term relationship between monetary policy and investment. The following equations explain these results.

1. Model of the impact of government on the spending VAT

\[
LVA = 0.042LGV + 0.04t + 6.6
\]

(2.2) (37) (44)

According to equation (1) in the long term, there is a positive relationship between value and cost of government. In this regard, LVA, LGV are respectively logarithm of value added agriculture, and the log of government spending.

\[
DLVA = 0.54[LVA(-1) - 0.04LGV(-1) - 0.04t - 6.6] + 0.02DLGV + 0.025t + 3.6
\]

(-3/2) (1/8) (3/1) (3/2)

Respectively difference between the logarithm of government spending DLVA and DLGV, So that in the equation (2) and subtracting the logarithm is value added. This equation shows the error correction factor equal to 54/0. And in each year the - 54 / 0 from error correction is to achieve long-term equilibrium. And also in the short term there is a positive relationship between fiscal policy and added value.

2. Impact of the amount government spending model on investment

\[
LI = 0.49 LGV + 8.4
\]

(4/2) (-1/9)

In relation (3) LI is log Investment, and LVG is the Government spending. This relationship shows that there is a negative relationship between the variables fiscal policy and investment.

\[
DLI = -0.64[LI(1)+0.49LGV(-1)+8.4]-0.6DLGV+5.3
\]

(-3/9) (-2/9) (3/5)

In equation (4), respectively, DLGA, and DLI variables are the difference between the investment log and the difference of the government spending. According to equation (4) the error correction factor is 64.0- that show in each of the error, the adjustment will be relatively fast.

3- The model of estimates impact of liquidity on value added agriculture

Equation (5) indicates a positive relationship between value and monetary policy.

\[
LVA = 0.07LMA + 0.04t + 6.3
\]

(3.7) (33) (44)

\[
DLVA = 0.68[LVA(-1) - 0.07 LMA0/04 + (-1) t- 6.3] + 0/06LMA + 0/03t + 4/3
\]

(-4) (2/8) (3/9) (4/3)

Variables in equations 5 and 6 are respectively LMA and LVA, the log of value and added liquidity. And DLVA is minus logarithm value. According to equation (6) in the short term there is a positive relationship between value and monetary policy. Also mentioned relationship shows In each period of long-term imbalances will adjust quickly.

4. Estimation model of impact of liquidity on investment in agriculture

According to the relationship the t-value equal to 9/1, which is less than the critical value. Therefore, there is not a long-term relationship between the variables. And short-term relationship is as follows.

\[
LI = 0.53LI(-1) - 0.004LMA (-1) + 2.2
\]

(3/2) (0/05) (2/5)

In this variables relationship LMA and LI respectively logarithm of the liquidity and investment.

Suggestion

1. Because long-term policy has impact more than short-term policy, so long term should be taken, and they should be relatively stable.

2. Expansionary monetary and fiscal policies to stimulate economic expansion and increase in value should be adopted simultaneously.
3. By reducing government expenditure, the share of private investment in the agricultural sector should be
developed.
4. The supply side economic policies in the agricultural sector will be studied and developed in these
researches.

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