



The Effects of Monetary and Fiscal Policies on Employment and Added Value: A Case Study of Agriculture Sector in Iran

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ABSTRACT

Monetary and fiscal policies as a sub-set of economic policies are adopted and enforced to stabilize the general price level, to create economic growth and employment, maintain the value of national currencies, and create equilibrium in payments balance. The present study aims at investigating the influence of monetary and fiscal policies on key variables in agriculture, namely production and added value. To do so, some variables such as added value, employment in the agricultural sector, the amount of liquidity, government spending, the banking system credits granted to the public sector and non-government sector, investment in agriculture, price index of agricultural products, the degree of economy openness, instability of monetary policies, and instability of tax policies were manipulated in this study. ARDL method was used to estimate relationships between variables.

The results of the study indicate that expansionary fiscal policies, i.e. the rise of government spending and instability of fiscal policies will result in an increase in the employment level and added value in agriculture sector. On the other hand, expansionary monetary policies i.e. a rise in liquidity and instability of monetary policies will lead to a decline in the employment level and added value in agriculture sector. The results obtained from vector error correction model suggest that the equilibrium will take place quickly and in long-term.

KEYWORDS: monetary and fiscal policies, employment, added value, Iran's agriculture sector.

INTRODUCTION

The application and implementation of macroeconomic policies by the statesmen in different ways influence activities done in different economic sectors. It is not simply possible to investigate of the complex process of these effects and to do so it is in the need of different viewpoints. Monetary and fiscal policies, as a part of macroeconomic policies, affect the demand side of the economy. It can perhaps be said that the effect of such policies on different economic sectors is a controversial and challenging issue in the economic literature, to which a significant volume of the empirical research is allocated. Generally, the effects of monetary and fiscal policies are conveyed to productive sectors, the whole economy and agricultural sector through investment and increased productivity of different factors.

The topical issue in the present century is how it is possible to create generating job opportunities and sufficient income for the strongly growing population? Perhaps this is the most difficult problem facing developing countries in recent decades. The significance and seriousness of the issue become apparent when the born population reaches the working age during the population boom. Even countries with a satisfactory rate of economic growth having a good industrial sector came to realization that their development rate is not rapid enough to decrease unemployment in these countries.

The experience of industrial and newly industrialized countries shows that the agriculture will lose gradually its relative importance in creation of new jobs. Even after the transition from some stages of development, the number of those employed in the agricultural sector will be absolutely increasing. Besides, in many countries the agriculture will continue to play an important its role in job creation in middle terms.

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Monetary and fiscal policies as a sub-set of economic policies are adopted and enforced to stabilize the general price level, to create economic growth and employment, maintain the value of national currencies, and create equilibrium in payments balance. Since oil revenues have the highest share in Iran's total revenues and, in addition, other financing instruments such as the government tax revenues are also facing its own problems, the government is not able to implement a successful monetary policy through changing tax rates and consequently tax revenues. As a result, the government applies such policies through making changes in public payments in the form of annual budgets, development programs, or current development tools for current expenses.

The way monetary and fiscal policies affect various variables such as added value and employment in the agricultural sector is among significant issues to which numerous discussions in the macroeconomic literature are devoted to. In this line, the aim of the present study is to examine the way these policies affect key variables in the agricultural sector i.e. production and added value. The followings are among the studies that have explored the issue:

Fats and Mihow (2001) in a study called "The effect of fiscal policies on consumption and employment variables" found that a rise in the government spending will lead to a sustainable increase in production, consumption, investment, increase in wages, and employment in the private sector.

Brogman (2004), using seasonal data collected in Germany and Johansson's method, examined the relationships among unemployment, investment, and production variables and confirmed the existence of a joint hypothesis and interpreted it as an equation for determining economic incomes. Then employing a vector correction model, he considered different types of impulses influential on unemployment and has investigated their short-term and long-term effects. Finally, he concluded that unemployment rate is not affected by a single factor but a set of factors are determinant of unemployment. As a result, to reduce it a combination of policies related supply and demand should be employed.

Tine and Freddy (2005) in a study focusing on "Fiscal policies, employment and growth", examined some variables such as taxes, government spending, GDP, growth and employment through the approach taken by Johansson. The results of this study suggested that an increase in taxes results in a decrease in growth and development and by increasing the government spending, a rise will occur in employment rate.

Model development

To investigate the effect of monetary and fiscal policies on employment and added value in Iran's agriculture sector, the following equation is estimated:

$$Ly_t = f(LM_t, LM_{t-1}, LG_t, LG_{t-1}, LGBL_t, LNGBL_t, \dots)$$

$$LN_t = f(LM_t, LM_{t-1}, LG_t, LG_{t-1}, LGBL_t, LNGBL_t, \dots)$$

Where in this equation, the variables are as follows:

Ly: Added value logarithm in the agriculture sector at a fixed price

LN: Employment logarithm in the agriculture sector

LM: Liquidity volume logarithm

LG: Government spending logarithm

LGBL: Logarithm of debits granted by the banking system to the public sector

LNGBL: Logarithm of debits granted by the banking system to nonpublic sector

LI: Logarithm of agricultural investment

LP: Logarithm of price indices for agricultural products

OP: the degree of economy openness which is equal to the sum of exports and imports to GDP.

LSM: Logarithm of instability of monetary policies: In order to calculate the instability for Year t, the liquidity for Year t will be deducted from the mean of the liquidity of three last years (i.e. for years t-1, t-2, and t-3) and then the absolute value of instability is calculated.

LSGE: Logarithm of instability of fiscal policies: In order to calculate the instability for Year t, the government spending for Year t will be deducted from the mean of the liquidity of three last years (i.e. for years t-1, t-2, and t-3) and then the absolute value of instability is calculated.

In the present study, LG and LSGE stand for fiscal policies, while LM and LSM stand for monetary policies. The study has been conducted annually in the time period from 1976 to 2008.

RESULTS AND DISCUSSION

Before estimating the model proposed in this study, the variability test was performed by employing the generalized Dickey-Fuller Test. In the case of the existence of a collective long-term relationship

between a set of variables, it is possible to use vector error correction model (ECM) which relates variables short-term fluctuations to their long run equilibrium values . The results of the ECM tests have been presented in Table 1, below:

Based on the findings of the study the following conclusions can be drawn:

Based on Table 1 and the results of short term vector for added value in the agricultural sector, it is indicated that government spending, credits granted by the banking system to the public and nonpublic sectors, investment in agriculture, the degree of openness of economy, and instability of financial policies have a positive and significant effect on the added value in the agricultural sector, meaning that a short term increase in the added value of agricultural sector will lead to an increase in government spending, credits granted by the banking system to the public and nonpublic sectors, investment in agriculture, the degree of openness of economy, and instability of financial policies. However, an increase in short-term liquidity will result in a decline in price indices of agricultural products, instability of monetary policies, and the added value in the agriculture sector.

Table (1): Results of the model estimation

Dependent variables		Added value in agriculture sector		Employment	
Variable abbreviation	Variable name	Coefficients	T statistics	Coefficient	T statistics
C	Intercept	0.3	0.17	2.6	2.76
DLM	liquidity	-9.3	-2.5	-0.27	-2.14
DLg	Government spending	6.6	2.1	0.44	3.85
DLGBL	Credits granted by banking system to the public sector	0.03	2.1	0.83	3.28
DLngbL	Credits granted by banking system to the nonpublic sector	0.08	2.2	0.23	2.25
DLI	Investment in agriculture sector	0.03	3.6	0.14	4.42
DLP	Price indices of agricultural products	-0.11	-2.4	-0.03	-2.68
OP	Degree of openness of economy	0.32	3.84	6.26	2.8
DLSM	Instability of monetary policies	0.32	-3.1	-1.14	0.3
DLSGE	Instability of fiscal policies	0.19	5.4	2	3.33
ECM (-1)	Vector error correction coefficient	-0.62	-3.7	-0.81	
\bar{R}^2		0.96		0.98	
DW		1.94		1.97	
F		5.27		5.19	

Source: research findings

The results related to long-term collective employment vector indicate that liquidity, price indices of agriculture products, and instability of monetary policies have significant and negative impact on employment in agriculture sector. In contrast, government spending, credits granted by the banking system to the public and nonpublic sectors, investment in agriculture, the degree of openness of economy, and instability of financial policies exert a positive and significant impact on employment in agriculture sector.

As it is evident in the above table, the ECM (-1) coefficient of added value which amounts to 0.62 is significant, indicating that every year 62% of the inserted balance is adjusted. In other words, if a shock is exerted to the model it requires a time period more than one year to reach equilibrium.

In the equation related employment, error correction coefficient is -0.81 which indicates that each year 0.81 imbalance in inflation is adjusted. Therefore, the adjustment happens rapidly in long-term and requires a time period of more than one year.

The results of the study are as follows.

- Expansionary fiscal policies i.e. an increase in government spending and instability of fiscal policies will lead to a rise in employment rate in the agricultural sector.

- Expansionary fiscal policies i.e. an increase in government spending and instability of fiscal policies will lead to a rise in the added value in the agricultural sector.
- Expansionary monetary policies i.e. an increase in liquidity and instability of monetary policies will lead to a decline in employment rate in the agricultural sector.
- Expansionary monetary policies i.e. an increase in liquidity and instability of monetary policies will lead to a decline in the added value in the agricultural sector.
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Suggestions

Based on the results of the study suggesting that increased government spending will lead to an increase in employment rate and added value in the agriculture sector, it is recommended in order to increase the added value in the agriculture sector, much attention be paid financial policies and to increasing government spending. In addition, given the high employment rate in the country it is suggested that a part of work force be guided toward employment in the agriculture sector so that to support this sector.

It is also recommended for future research to investigate the effects of private sector spending on added value of agriculture sector in rural areas.

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