The Effect of Developing Cooperative Firms on Decreasing Poverty (A Case Study: Fars Province, Iran)

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ABSTRACT

This study aims to estimate the effect of developing cooperatives on poverty level. The data were related to the period 1983-2009. A regression model was used in a way that the number of people living below the poverty line was considered as the dependent variable. Independent variables included inflation rate, unemployment rate, income unequal distribution, literacy, economic development, urban population percent, family dimension, bank facilities, population growth, and variables related to developing cooperatives such as the initial capital, the number of people, the number of employed people in the cooperative, and the current capital. To calculate the percent of people living below the poverty line, FGT index was used. The results revealed that cooperative developments decrease poverty in the society.

KEYWORDS: development of cooperatives, capital, the poverty line, FGT index.

1. INTRODUCTION

To reach development and to improve life quality are among the most important aims most of the countries pursue. Although these developments have had a profound positive effect on life, the difference and the distance among countries have negatively increased. Using cooperative methods and promoting cooperation and participation among people can be considered as a solution alleviating this problem. Those countries facing lack of domestic and foreign capitals, low production, high levels of poverty and unemployment can work on cooperatives.

Through collection of savings, cooperatives can evoke investment and can enter stagnant liquidity into investment cycle. In this way, production increases and finally economic growth and development are achieved. Despite the significant impacts of cooperatives, no specific study has been carried out and, to the best of our knowledge, the present study is the first one delving in to the effects of cooperatives on poverty level. The purposes of this study include:

1)determining the relationship between development of cooperatives and decrease in poverty.

2) determining the factors influencing poverty and the role of cooperatives on decreasing poverty.

2. MATERIALS AND METHODS

In the model used in this study:

$$Y_t = f(x_{1t}, x_{2t}, x_{3t}, \dots x_{14t})$$

(1)

Y is the number of people living below the poverty line, X_1 is the inflation rate, X_2 is the unemployment rate, X_3 is income unequal distribution, X_4 is the literacy level, X_5 is the economic growth rate, X_6 is the urban population percent, X_7 is the family dimension, X_8 is the bank facility level, X_9 is the population growth, X_{10} is the initial capital of the cooperative, X_{11} is the initial number of the people forming a cooperative, X_{12} is the number of employed people in the cooperative, X_{13} is the current capital of the cooperative, X_{14} is the current number of the people in the cooperative. Variables X_{10} to X_{14} are related to the cooperative developments.

The sample of the study includes all the active cooperatives in Fars Province. These 4516 cooperatives work in 12 fields (such as agriculture, services, industry, transportation, credit, hand-woven carpets, housing, mining, civil, meeting needs of customers and manufacturers, and multi-purpose).

The data required for poverty- line studies were provided through the information gathered by Iran Statistics Center. At first, the urban and rural poverty line of the years 1997 was selected as the base. The poverty line of this year was calculated by Samadi (1998) who used linear expenditure system and demand function of Aseton-Gray. Then, the poverty line related to other years was also calculated and the number of people living below the poverty line was achieved by FGT index.

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$$FGT = P(a) = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z - x_i}{z}\right)^2$$

(2)

3. RESULTS AND DISCUSSION

Data related to dependent variables was collected directly from the above results. For the independent variable, a given poverty line was selected and the data were categorized according to it. For this purpose. Urban and rural poverty line of the year 1998 was used. Then, the poverty line for the period 1361 to 1388 was estimated by inflation equations and CPI index. CPI's for different years were multiplied by the poverty line estimated by Samadi(1998) and poverty level for each year was calculated. The general approach to calculate FGT index is as follows:

To calculate FGT index, the number of poor families is determined annually and is included in the model. For example,35 rural families and 43 urban families out of 100 families in the year 1385 had income lower than the poverty line. Thus in FGT index, Q for rural household is 35 and for urban household is 43 and q is different for each year. So, the number of families living below the poverty line is signified as Q,Z is considered as current poverty, N is the number of participants in the sample and x_i is the income of ith poor family.

Since this study was conducted for both rural and urban areas, the mean of FGT indices for urban and rural areas was estimated to determine the percent of people living below the poverty line.

The results show that inflation, unemployment, unequal distribution of income, family size, banking facilities, and urban population affect poverty growth. In addition, the coefficients of variables representing cooperative development (i.e., initial capital, the number of employed people in the cooperative, the current capital, the number of people at the beginning and the number of people participating in the cooperative currently) have a negative influence in poverty growth. This means that developing cooperatives through increasing the number of partners or the amount of capital can decrease poverty in the society. Also , $\bar{R}^2$ was 98%, showing that 98 percent of changes in the number of people living below the poverty line each year was explained by the independent variables. Taking into consideration Durbin–Watson statistic (1.99), one can realize that estimated LM is less than the item presented in the table and this condition rejects self–correlation. Table1 represents the results of White Test based on which residual variance problem was also rejected.

Table 1 – The Model Estimate

Variable Name	Coefficient	(prob)
θ_0 or μ_0	6.96	0.0168
X_1	0.8	0.0000
X_2	0.13	0.0011
X_3	1.09	0.0001
X_4	-0.03	0.1782
X_5	0.11	0.7106
X_6	1.69	0.0383
X_7	0.27	0.0001
X_8	-0.1	0.0023
X_9	0.18	0.2221
X_{10}	0.22	0.0018
X_{11}	-3	0.0019
X_{12}	-0.13	0.0109
X_{13}	0.28	0.0133
X_{14}	-0.2	0.0058

0.77	2.05	F Statistics	LM TEST
058	0.122	Prob	
1.12.	1.23	F Statistics	White TEST
0456.	0347	Prob	
-5.23	-5.55	Granger causality arithmetic	Granger causality Test
-4.18	-4.18	Granger causality table	

Finally over-generalized Granger causality Test was carried out on regression residuals to test their constancy. Regression can be trusted if constancy of residuals is approved (Nofresty,1998). Based on over–generalized Granger causality Test, residuals are also constant.

4. Suggestions

Since cooperatives have a significant role in decreasing poverty, they can be developed to decrease poverty in Fars Province.

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