

Role of Agricultural Sector in Decreasing Poverty based on Fixed Price Multiplier coefficients Approach

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Abstract: The present paper mentions the importance of agricultural sector in major development and increasing public welfare and discusses an important purpose as eradicating poverty in the society by fast growth in the agricultural sector. With respect to poverty eradication the results achieved from different studies (*including Dat & Ravalvin, 2002*) indicate that the role of agriculture in decreasing poverty is more significant than the industrial and urban development sectors in several cases. The main purpose of this paper is presenting theoretical principles with respect to the place of agricultural sector in decreasing poverty and analyzing direct and indirect effects of FGT (Foster-Greer-Thorbecke) poverty index separately for different economic activities against increase in production or request of a determined part of the economics as a results of application of general economic policies using fixed price multiplier coefficients approach in the scope of social accounting matrix pattern. Using the technique presented in this paper along with analysis of the presented index can be used as a useful instrument for relating the growth pattern with the decrease in poverty. In this paper by using social accounting matrix of the year 2006 in Iran in 14 different economic activities plus the statistics related to the families budget it has been indicated that the development in rural agriculture sector has the most share in decreasing poverty.

[Sanaz Abbasian Nigjeh. **Role of Agricultural Sector in Decreasing Poverty based on Fixed Price Multiplier coefficients Approach**. *N Y Sci J* 2013;6(12):44-53]. (ISSN: 1554-0200). <http://www.sciencepub.net/newyork>. 7

Keywords: Poverty Eradication, FGT (Foster-Greer-Thorbecke) Poverty Index, Fixed Price Multiplier coefficients Approach, Social Accounting Matrix

JEL Classification: E16, P46, Q1

1. Introduction

Despite that it seems that the rural society and agricultural sector in developing countries benefit from a type of low bargaining power in decision making procedures and resources allocation, but the extraordinary significance and sensitivity aspects of facing this sector are so great that any negligence with respect to the related issues will result in significant widespread consequences in national scale so that in some cases the resulted problems and wanted or unwanted consequences won't leave the process of development management for decades.

This issue that the governments in developing countries must pay a special attention to development of rural sector in their economic development plans has always been considered by different economic development analyzers. For example, in 1980 and 1990 a significant sensitivity was observed with respect to multilateral role and significance of agricultural sector in national economic development both by researchers and policy makers. The recent sensitivities originate from the previous researches and studies. As an example valuable researches performed by Johnston and Mellor, 1961 indicate that agricultural sector has a significant share in national economic development. Moreover promoting productivity in food & nutrition and primary goods can have a fundamental role in removing obstacles in national development. The

turning point of paying more attention to agricultural sector appeared in 1980's. In this decade because of foreign exchange limitations, exporting agricultural products was more and more taken into consideration by policy makers of developing countries. Considering these types of policies would mean limiting its assignable production. Also other problems such as unemployment and as a result increase in immigration to urban areas created the necessity of productive employment development in rural regions because the highest applicable identity can play a significant role in comparison with the other economic sectors for creating employment in the mentioned countries (Momeni, 2010).

In this paper the place and significance of agricultural sector in comparison with the other economic sectors in the field of employment, social justice, decreasing poverty and moving toward industrialization of the economy is taken into consideration. The main purpose of this paper is to study and analyze the quantity of decrease in poverty level in rural regions resulted from applying general economic policies (increase in consuming expenses of the government) in the scope of FGT (Foster-Greer-Thorbecke) Poverty Index and on the basis of social accounting matrix in the year 2006 in Iran. For this purpose different parts of this paper are organized as follows:

In the first part we will discuss the importance of agricultural sector in the economy. In the second part the methodology related to the considered poverty index will be discussed in the scope of social accounting matrix and in the following parts we will analyze the results of estimations and evaluations on the basis of statistical fundamentals and in the last part a summary and conclusion of all the mentioned topics will be presented.

1. Place of Agricultural Sector in the Economy

In the literature of economic development there have been several discussions with respect to the significance and place of agricultural sector in the process of economic development. Especially this part is of more significance at the beginning of economic development because agricultural sector is the largest sector in the economy of developing countries and can assist the economic development with different methods including providing labor force and investment, primary materials, cheap food, market for productive goods in the industry and providing foreign exchange (Najafi, 2003: 167).

Rural population in agricultural sector benefits from three main characteristics: First only half of this population are farmers. (Farmer is a person who obtains more than half of his income from agriculture and spends more than half of his working time in this field.) The remaining of rural population are non farmers and the highest rate of poverty in rural regions and other parts of the country belongs to this group. Second and more important is that employment growth and its effects on the level of poverty non agricultural rural regions appears as a growth in requests for products and the third characteristic is that the produced and offered services and goods in non agricultural rural sector all mainly applicable and non-commercial. These types of goods and services cannot be sold in foreign markets because of low level of quality and high expenses of transportation. Thus it is agriculture and its increasing effect on the income of the farmers that determine the non agricultural rural growth rate and has the most important role in employment growth and poverty eradication rates (Mellor, 2003:6).

On the basis of employment statistics in Iran in the year 1991 it can be observed that in this year agricultural sector had the highest employment coefficient after service sector. Also studies indicate that the necessary costs and expenses for creating a Full-time job in this sector is Rls. 3,891,000. The lowest amount is related to financial services sector with an amount of Rls. 2,700,000 and from this aspect it has an extraordinary attractiveness for owners of small capitals (*Sameti & Naraghi, 121: 2003*).

Creating working opportunities is considered as one of the effective tools for just

distribution of the incomes. Just distribution of the incomes itself has a positive effect on creating job opportunities. This works in a way that increase in the income of the poor means an increase in request for necessary goods in a way that it will simultaneously increase the request for local production, local employment and improvement of local investments. Considering the issue of employment in national scope and the role of agricultural sector, the government can fascinate the way for preparation of agricultural sector for undertaking the heaving responsibilities in this field using its amending economic policies in short-term period. International experiences in this field have shown that the most effective and applicable act for facing the unemployment crisis is prioritizing the agricultural sector and rural society and placing them as the focal point for solving the problem (Momeni, 2003:626).

In Iran before the Islamic Revolution in the third economic and social development plan despite land amendment plans, net export of agricultural products was positive but in the 4th plan because of emphasis on development of industrial sector and negligence of investors to agricultural sector despite the requirements because of land division plans, the agricultural sector could not respond to the increasing growth of the requests and as a result increase in income and population and as a result importing food exceeded exporting agricultural products and net export of the agricultural sector became negative. After the Islamic Revolution despite there we more emphasis on social and economic development plans and the production level increased but because of increase in population growth and other factors providing products were not in balance with the request for food and primary agricultural materials and as a result the process of importing fundamentals goods including wheat, rice, sugar and vegetable oil have always been ascending in a way that in the recent years a significant part of the oil income which had reached an amount of 2 million dollars in some years was specified for importing agricultural products (Najafi, 2003:168).

In developing countries and especially in Iran relative vulnerability in agricultural sector is more than the other economic sectors for different reasons. So it is expected that because of lower level of flexibility in this sector against sudden positive changes or probable negative changes the possibility of taking an appropriate action in time against any change in this sector is very low and thus damages resulted from shock therapy would be extraordinary higher even if the considered shock would not directly aim for this sector. There are several arguments with respect to vulnerability in agricultural sector and one of the most common descriptions in this respect which

is considered in all of the microeconomics educational books is special specifications of the production system of the agricultural products and the process of farmer's responses to changes of products' prices in this sector. This phenomenon is discussed in the scope of Cobb-Web and in the pattern of spider web curve and results in this issue that farmers can respond to price changes in the best status with a 1-year interval. In other words considering that making decision with respect to type and quantity of the product in agricultural sector must start one year sooner an unavoidable flexibility is applied to agricultural sector from this part.

Lower level of human capitals active in this sector along with lack of comparable infrastructures with infrastructures of industrial sector and urban society along with limited accessibility to alternative choices are some of the other elements which describe the less flexibility power of agricultural sector and rural society (*Momeni, 2010:349*).

Today developmental economists doubt the appropriateness of such an excessive emphasis on industry. Maybe the more important issue is that they have recognized that agricultural sector specifically and rural economy generally are studied as dynamic and improving elements in the general strategy before being known as interactive sector in the process of economic development and offering service to the industry. Thus, 1970's observed a significant evolution in the point of view of the economists with respect to development. An evolution on that basis several people considered development of agricultural sector as a necessary prerequisite for national development. Without agricultural and rural development, industrial growth would be either unsuccessful or in case of obtaining any success will create such intensive internal imbalances in the economy that poverty will be more widespread and inequality and unemployment will be more determinate (*Todaro, 1989:414*).

The important note that must be mentioned is that industrialization does not mean development of industrial sector. Because the society can become industrialized and developed, but the produced goods would be from agricultural sector. For example we can mention Netherlands that exports more than 2,000,000,000 dollars of flowers. Thus productive goods in a society does not determine its industrial or agricultural status but the method that is used in producing the goods shall represented industrial status of the society. Similarly a society that produces industrial goods using traditional methods cannot be called an industrial society. Thus we cannot conclude insignificance or freedom of agricultural sector from the concept of industrialization (*Sameti & Naraghi, 2003:126*).

2. Why Agricultural Growth will result in decrease of The Poverty?

By supposing that agricultural growth will result in a decrease in poverty and also considering that utilization systems based on large agricultural farms have no effect on decreasing poverty we can conclude the indirect role of agriculture in decreasing the poverty. Decrease of poverty will become realized when farmers expend the extra income resulted from agriculture in non agricultural rural sector. Non agricultural rural sector approximately consists of half of the rural population. This sector is very applicable; the goods that are produced in this sector cannot be presented in international markets because of low level of quality and high transportation costs and expenses. In other words in non agricultural rural sector goods that are produced are not tradable and their production growth requires local request. Some of the products of this sector consist of Houses (one of the major expenses of developing farmers), furniture and household appliances, local customs and different services (including transportation to education).

Request for goods and services from non agricultural rural sector provides high level of income. In other words the more is the income of the farmers the more they will spend in non agricultural rural sector and as a result with growth of agriculture non agricultural rural sector will grow faster than the agricultural sector and its weight in rural economy will be greater. This issue that growth of agriculture will decrease poverty by affecting the non agricultural rural sector is a documented fact. But the effects of agriculture growth on decreasing poverty accompanies with delay because it will take some time for the farmers so that their expenses in non agricultural rural sector grow. But the fact is that a significant part of the effects of increase in expenses is related to the consumption multiplier coefficient. In non agricultural rural economy a part of the extra income that farmers expend is used for trading between non farmers and consumption multiplication will be resulted and the effect of expenses made by the farmers on decreasing poverty will be multiplied.

But rich farmers when their income would rise will tend to purchase investing and imported goods which will not significantly affect the non agricultural rural economy. So they do not play a significant role in employment growth and decrease of poverty. On the other hand the economic status of the farmers is growing. The major part of the poor is not farmers so this is the expenses made by the farmers in non agricultural rural sector that result in decrease of poverty. When we are discussing the differences between major and minor farmers we do not mean insignificant differences in the size of the farm but we aim for large farmers and owner (*Mellor, 2003:9*).

By supposing that the focus of people is on agricultural sector, the greatest amount of decrease in poverty happened in families that were mainly working in this field. By considering the indirect effects on non farmer families the responsibility of 44% decrease in poverty in Ghana and 77% in Uganda in 1990 and a decrease of more than three fourth of the poverty in years 1984 to 1996 in Indonesia was on the account of agricultural sector. In Vietnam 71% of the workers whom were eliminated from the poverty list between years 1993 to 1997, were still working and had just entered the agricultural field (*Besley & Cord, 2010: 38*).

Five types of policy helped increase of agricultural incomes of the poor families in 1990 in the mentioned countries as follows:

- Improvement in market accessibility and decrease of trading costs and expenses.
- Boosting land ownership rights.
- Creating a supportive framework that would benefit all the farmers.
- Development of useable technology from the small scale producers.
- Helping the poorer and smaller producers in risk management.

Examples of successfulness in realizing the fast growth of agriculture is of several varieties. In all cases, fast growth of agriculture will result in fast decrease in poverty and urban distraction. Each of the countries had completely different conditions for fast growth of agriculture with respect to physical environment and the prepared programs but some significant common points were found between them all.

First, all of these countries were focused on most talented fields. At the beginning they started simple problem solving and started their work from the regions with high quality soul and equipped with irrigation networks. Second at first only a few products or activities were selected as priority. Third they focused on providing the needs of minor agricultures. Fourth they developed appropriate infrastructure (including appropriate roads, electricity and communication facilities). Fifth they created an

appropriate agricultural research system by emphasizing on a few prioritized goods. Of course they also used external research resources but utilizing the researches made by other countries required presence of an appropriate national research system for attracting the findings and making them compatible.

Now according to the above descriptions in this study we will indicate that on the basis of FGT poverty index and in the scope of social accounting matrix of the year 2006 in Iran agricultural sector had a greater share in decreasing poverty in comparison with other economic sectors.

3. Experimental Framework

General accounting system of every society consists of production, consumptions (income), accumulation and foreign world accounts. In an accounting system, common data, production account interaction internally and other society accounts such as organizations, production employees services (resulted from the services of human, physical and natural resources capita) and foreign world accounts are considered outside he productive system. So this type of accounting system can only be discussed in analyzing growth and development oriented patterns depending on the requesting party of the entire economy and is not capable of evaluating the effects of economic policies on income distribution, employment and social and environmental issues (*Banouei et al, 2001*).

But in social accounting matrix, from the mentioned five account, three of them including production, production employees and organizations accounts (except government, taxes and subsidies) are considered as internal account and the other two accounting including accumulation (deposit) and foreign world (exporting and importing goods and services) accounts in addition to government, tax and subsidies accounts and external accounts of social accounting matrix (*Banouei & Momeni, 2010:4*). Along with the above mentioned descriptions the structure of a social accounting matrix on the basis of internal and external accounts is organized in Table 1.

Table 1: The overall structure of a social accounting matrix based on endogenous and exogenous accounts

Input → ↓ Output	Endogenous Accounts	Exogenous Accounts	Total input
Endogenous Accounts	N (I)	X (II)	Y^d
Exogenous Accounts	L (III)	R (IV)	Y^x
Total output	$Y^{'d}$	$Y^{'x}$	

Reference: Thorbecke and Hong-sang Juing, (1996)

For the purpose of separation of direct and indirect effects of economic policy on poverty index it is necessary that the mentioned poverty index would benefit from the ability of being separated. It is worth mentioning that FGT poverty index benefits from his characteristics and is defined as follows:

$$P_{\alpha}(y, z) = \frac{1}{n} \sum_{i=1}^q \left(\frac{z - y_i}{z} \right)^{\alpha} \quad (1)$$

P_{α} , poverty index, z , poverty line and $q = q(y, z)$, number of the poor, which is a function of poverty line and income of the related groups for computation of which first the family income vector must be ordered ascending $y = y_1, y_2, y_3, \dots, y_n$ and on the basis of the poverty line and the mentioned poverty index will be obtained from the above mentioned relation.

For computing the changes in poverty index as a result of production changes in each sector it is enough to determine the effect of income changes on FGT poverty index. *Kakwani (1993)* indicates that change in poverty index can be separated in two parts because of change in income or partial production:

- 1) The part related to change in average income per capita.
- 2) The part related to change in income distribution among families in each determined group.

Thus, the FGT poverty index will:

$$dP_{\alpha ij} = \frac{\partial P_{\alpha ij}}{\partial y_i} d\bar{y} + \sum_{k=1}^L \frac{\partial P_{\alpha ij}}{\partial \theta_{ijk}} d\theta_{ijk} \quad (2)$$

$P_{\alpha ij}$, FGT poverty index is related to the j^{th} part of the i^{th} family and \bar{y}_i is the average income per capita in i^{th} family and θ_{ijk} reflects distributive parameters (*Thorbecke & Jung, 1996:290*).

Supposing that by change is the production level of the j^{th} activity income distribution in organizational groups will remain constant:

$$\frac{dP_{\alpha ij}}{P_{\alpha ij}} = \eta_{\alpha i} \left(\frac{d\bar{y}_i}{\bar{y}_i} \right) \quad (3)$$

In which $\eta_{\alpha i}$, capacity of $P_{\alpha ij}$ is determined according to the average income per capita of each i^{th} family group which results from

increase in production in the j^{th} sector. For the purpose of relating the changes in poverty index according to division of different parts of the economy to changes in production or income of different economic activities which are resulted from execution of general economic policies the following relation will be used:

$$d\bar{y}_i = M c_{ij} dx_j \quad (4)$$

In which dx_j represents change in request or production of the j^{th} sector which is determined as per

$M c_{ij}$ are multiplier coefficients of Social Accounting Matrix with fixed price. By placing relation 4 in 3 the following relation will be obtained:

$$\frac{dP_{\alpha ij}}{P_{\alpha ij}} = \eta_{\alpha i} M c_{ij} \left(\frac{dx_j}{y_i} \right) \quad (5)$$

In this stage we must obtain multiplier coefficients of Social Accounting Matrix with fixed

price. According to relation 5, $M c_{ij} dx_j$ is related to the results achieved from fixed price multiplier coefficients approach in the scope of social accounting matrix which is resulted from application of development policies in each economic sector. Social accounting matrix pattern is one of the patterns that is used in simultaneous short-term analysis of social and economic growth (production increase) and structural organizational income distribution. From the methodological point of view and political, social and economic analysis of income growth and distribution, analysts in the field of social accounting matrix use two general approaches which are as follows: accounting multiplier coefficient approach and fixed price multiplier coefficients approach. The former, is calculated and analyzed based on a matrix with average coefficients (average consumption tendency matrix). One of the fundamental limitations of this approach is application of average coefficients in social and economic chain analysis on the basis of income capacity of different family groups. In other words, it is supposed that average tendency to expend related to the three internal accounts would be equal to the final tendency to expend. The above mentioned assumption is realized in consumption of different groups of families. It means that families expend a fixed proportion of their income on goods and services and as a result their income capacity would be equal to one unit. Under such a situation we cannot use the mentioned analysis in simultaneous analysis of

income growth and distribution and relating them to poverty and poverty eradication. For the purpose of solving this problem, social accounting matrix analysts calculated final tendency to consumption in families and as a result they established fixed price multiplier coefficients approach (Parvin & Banouei, 2009:121). In this approach income capacity of the families would not be equal to the unit and according to relation 7, M_c is fixed price multiplier coefficients matrix.

$$dy^d = C_n dy^d + dx \quad (6)$$

In which $C_n = C_{ij}$ and

$$dy^d = (I - C_n)^{-1} dx = M_c dx \quad (7)$$

Relation 6 in matrix form is as follows:

$$\begin{bmatrix} dy_1^d \\ dy_2^d \\ dy_3^d \end{bmatrix} = \begin{bmatrix} c_{11} & 0 & c_{13} \\ c_{21} & 0 & 0 \\ 0 & c_{32} & c_{33} \end{bmatrix} \begin{bmatrix} dy_1^d \\ dy_2^d \\ dy_3^d \end{bmatrix} + \begin{bmatrix} dx_1 \\ dx_2 \\ dx_3 \end{bmatrix} \quad (8)$$

The computation methodology of final

tendency to consumption, c_{13} for the i^{th} good is performed as follows. Generally income capacity (expenditures) of different family groups for the i^{th} good is equal to the proportion of final tendency of expending the i^{th} good (MEP_{hi}) to final tendency of average expend of the same good (AEP_{hi}).

$$ey_{hi} = \frac{MEP_{hi}}{AEP_{hi}} \quad (9)$$

ey_{hi} in relation 9 indicates the income capacity of social and economic groups of h^{th} families in the i^{th} goods. In this relation income is the entire earnings of the group of h^{th} families and is not their obtainable

income. By knowing ey_{hi} and also AEP_{hi} which is calculated based on B_{13} , MEP_{hi} can be calculated as follows:

$$MEP_{hi} = ey_{hi} AEP_{hi} \quad (10)$$

$$\sum_i MEP_{hi} = 1 \quad (11)$$

Using relation (8) three independent balanced productive relations for each of SAM internal accounts would be achieved as follows:

$$dy_1^d = c_{11} dy_1^d + 0 + c_{13} dy_3^d + dx_1 \quad (12)$$

$$dy_2^d = c_{21} dy_1^d + 0 + 0 + dx_2 \quad (13)$$

$$dy_3^d = 0 + c_{32} dy_2^d + c_{33} dy_3^d + dx_3 \quad (14)$$

Which results in:

$$dy_1^d = (I - c_{11})^{-1} c_{13} dy_3^d + (I - c_{11})^{-1} dx_1 \quad (15)$$

$$dy_2^d = c_{21} dy_1^d + dx_2 \quad (16)$$

$$dy_3^d = (I - c_{33})^{-1} c_{32} dy_2^d + (I - c_{33})^{-1} dx_3 \quad (17)$$

The above relations reveal three levels of policy making according to the changes of political variables and its constituting elements. This level of

policy making is as follows: dx_1 , dx_2 and dx_3 . The direct and indirect effects and consequences of any of these policy makings can be evaluated in different scenarios on sectors production increase

(dx_1), increasing income of production employees

(dx_2) and increasing the income of social economic

family groups (dx_3). As an example considering the purpose of this paper for studying the effects of increasing production on poverty indexes separately in different economic activities it is necessary that first we study the changes in organizational incomes as a result of changes in production which itself is resulted from changes in external variables. For this purpose in

this state, only dx_1 which represents production is allowed to change and other external accounts would

be subjected to no change ($dx_2 = dx_3 = 0$). As a result relations (15), (16) and (17) will become as follows:

$$dy_1^d = (I - c_{11})^{-1} c_{13} dy_3^d + (I - c_{11})^{-1} dx_1 \quad (18)$$

$$dy_2^d = c_{21} dy_1^d \quad (19)$$

$$dy_3^d = (I - c_{33})^{-1} c_{32} dy_2^d \quad (20)$$

By ordering the above mentioned relations we will achieve the following relation:

$$dy_3^d = [I - (I - c_{33})^{-1} c_{32} c_{21} (I - c_{11})^{-1} c_{13}]^{-1} (I - c_{33})^{-1} c_{32} c_{21} (I - c_{11})^{-1} dx_1 \quad (21)$$

Relation 21 reveals the direct and indirect effects of external changes in production account

(dx_1) on income changes in different social and

economic family groups (dy_3^d). In other words its main attention is regarded to a part of consumption multiplier coefficient with fixed price that provides

the relation between (dy_1^d) and different social and economic family groups.

In the following parts for obtaining the effects of total poverty discount in the i^{th} group, the effects in different families groups will be added together.

So that $P_{\alpha j} = \sum_{i=1}^m P_{\alpha ij} \left(\frac{n_i}{n} \right)$ where $(n = \sum_{i=1}^m n_i)$ and

$(P_{\alpha j})$ is poverty indicators for group activities j .

By using general differential equation with respect to the above relation we will have:

$$\frac{dP_{\alpha j}}{P_{\alpha j}} = \sum_{i=1}^m \left(\frac{dP_{\alpha ij}}{P_{\alpha ij}} \right) \left(\frac{n_i}{n} \right) = \sum_{i=1}^m \left(\frac{dP_{\alpha ij}}{P_{\alpha ij}} \right) \left(\frac{P_{\alpha ij} n_i}{P_{\alpha j} n} \right) \quad (22)$$

And considering the definition of FGT poverty index in relation (1) the following relation will be obtained:

$$\frac{dP_{\alpha j}}{P_{\alpha j}} = \sum_{i=1}^m \left(\frac{dP_{\alpha ij}}{P_{\alpha ij}} \right) \left(\frac{\sum_{k=1}^{q_i} ((z - y_k)/z)^\alpha}{\sum_{l=1}^q ((z - y_l)/z)^\alpha} \right) \quad (23)$$

In which q_i is the number of poor people in the i^{th} family group and q is equal to the entire poor. If we call the share of the poor in the i^{th} family group as

$S_{\alpha i}$, then:

$$S_{\alpha i} = \frac{\sum_{k=1}^{q_i} \left(\frac{z - y_k}{z} \right)^\alpha}{\sum_{l=1}^q \left(\frac{z - y_l}{z} \right)^\alpha} \quad (24)$$

As a result by placing relation (24) in relation (23) then we will have:

$$\frac{dP_{\alpha j}}{P_{\alpha j}} = \sum_{i=1}^m \left(\frac{dP_{\alpha ij}}{P_{\alpha ij}} \right) S_{\alpha i} \quad (25)$$

And finally by placing relation (5) in relation (25) the percentage of changes in poverty index is obtained separately in different economic activities as a result of an increase in production or request as a result of general economic policies of the government as follows:

$$\frac{dP_{\alpha j}}{P_{\alpha j}} = \sum_{i=1}^m S_{\alpha i} \eta_{\alpha i} Mc_{ij} \left(\frac{dx_j}{y_i} \right) \quad (26)$$

In which $\eta_{\alpha i}$ indicates the sensitivity of P_{α} index

to changes in the average value $\left(\frac{dx_j}{y_i} \right)$ and

$S_{\alpha i} Mc_{ij}$ is a part of distributive effects received by the poor in i^{th} family group. Thus the entire discount

in poverty (poverty eradication) index which is the result of increase in product of the j^{th} part as a result of application of general economic policies of the government is compatible with the following two elements:

- Change in average income for all family groups.
- Sensitivity of the selected poverty index with respect to growth which means change in income of the family groups.

4. Statistical Basis

The required data for this research for the purpose of calculating FGT poverty index on the basis of social accounting matrix of Iran economy is extracted from Iran Statistics Center. Updated social accounting matrix of the year 2006 which is prepared in Master's Degree Thesis of *Mohammad Mehdi Kiyaeiha* using RAS method, expenses and income of the families in the year 2006 according to Iran Statistics Center, nationwide census of the year 2006 and statistics related to consumption capacity of family groups which are developed according to linear expenses system method are calculated in the mentioned thesis. The data that are obtained directly from the present information and statistics and information related to poverty index in the year 2006 are in proportion to economic sectors which are calculated in this research according to family budget data.

Production account aspects in social accounting matrix are accumulated in the economic sector as 14×14 . The most important reason for selecting a 14-part table is compatibility of different parts of this table with categorization of consuming goods in families in the year 2006 and conforming it to the information related to families consuming capacity for the purpose of calculating the final tendency of families to consumption.

The studied families are categorized in two parts of urban and rural families in the year 2006. The total number of studied families in the sample related to statistics and information of Iran Statistics Center in the year 2006 is equal to 30910 families of which 14175 were urban families and 16735 were rural families.

5. Estimations Results

Table 2 indicates the results achieved from applying a billion Rials injection of governments expenses in each of the 14 economic sections on income increase in social and economic family groups on the basis of fixed price multiplier coefficient approach.

Table 2. The Effect of a unit increase in Government spending to Institutions of higher revenues in 2006 (Billion Rials)

Economic Activity	Urban Family	Rural Family	Companies	All Organizations Except Government
Agriculture, Hunting, Forestry, Fisheries	0.717	0.287	0.116	1.120
Mine Extraction	0.525	0.107	0.473	1.105
Industry & Manufacture	0.382	0.121	0.156	0.659
Water, Electricity & Gas Provision	0.625	0.151	0.353	1.129
Building	0.615	0.177	0.225	1.017
Whole & Retail Sale, Repairing Motor Vehicles & Private & Household Appliances	0.848	0.345	0.145	1.339
Hotel & Restaurant	0.642	0.240	0.167	1.048
Transportation, Warehousing & Communication	0.650	0.232	0.191	1.073
Financial Mediating	0.824	0.219	0.157	1.200
Immovable Properties, Renting & Business	0.707	0.242	0.261	1.211
General Affairs, Defense & Obligatory Social Welfare	0.802	0.239	0.151	1.192
Education	0.847	0.235	0.098	1.181
Social Health & Welfare	0.831	0.239	0.128	1.198
Other General, Social & Private Activities	0.730	0.231	0.198	1.159

Resource: Research Calculations

General results of governments consuming costs and expenses increasing policy in the scope of fixed price multiplier coefficients on income of organizations except the government (urban & rural families and companies) can be summarized as follows:

- Class conflicts resulted from development policies in all sectors is more significant among urban families in comparison with rural families.
- Companies share in more beneficial sectors is higher. So the first three sectors that the greater part of profitability of the companies is related to them are respectively: Sector 2 (Mine Extraction), Sector 4 (Water, Electricity & Gas Provision) and Section 10 (Properties, Rent & Business).
- Among urban families, the greatest increase in income is related to service sectors in a way that sector 6 indicated (including wholesale, retail sale, etc.) 8.71%, sector 12 (Education) 8.69% and sector 13 (health & social welfare) 8.53 % increase in their income and in rural sector similarly the greatest amount of increase in income was related to sector 6 (whole sale, retail sale, etc.) 11.24% and sector 1 (Agriculture, hunting, forestry and fisheries) 9.36.
- Sector 6 (whole sale, retail sale, etc.) among the studied families indicated 3% more increase in income in comparison with sector 1 (Agriculture, hunting, forestry and fisheries).
- From the total increase in families' income, urban families' income was 76% of the entire income. Whereas rural families income was only 24% of the total income.

Table No. 3 indicates the results and consequences of applying economic policies (increasing one unit of consuming budget of the government) in different sectors on changes in poverty index and poverty eradication level.

- The highest rate of poverty decrease resulted from applying the economic policies on the studied families was respectively related to sector 1 (Agriculture, hunting, forestry and fisheries), sector 5 (Building) and sector 14 (Other general, social and private activities). The lowest share was related to sector 9 (Financial mediating) and sector 12 (Education).
- Sector 5 (Building) and sector 1 (Agriculture, hunting, forestry and fisheries) consist of a large part of the poor because of entrance of low skill work force and freedom in entrance and exit of the work force in these types of activities. Thus the results indicate that growth in these sectors has a more significant poverty eradication effect in comparison with the other sectors and sector 9 (Financial mediating) and sector 12 (Education), because of having a specialized activity and presence of skillful workforce has a less share in poverty and poverty eradication affairs in comparison with the other sectors.

- Findings of the economy, Indonesia, India, Vietnam and Uganda, have had similar results with the Iranian Economy. And the high share of agriculture in the Countries mentioned have poverty than any other economic activity.
- On the basis of FGT poverty index, rural families had a higher share in poverty eradication of 7% in Agricultural sector and 3% in Building sector in comparison with urban families in the same activities. Thus rural families in comparison with urban families are more significant and important in poverty and poverty eradication studies.

Table 3: Impressionability of FGT Poverty Index from Governments Consumption increasing policy separately from different Economic Activities in the year 2006 (Percentage)

Economic Activity	Poverty Level Decrease in FGT Index	
	Urban	Rural
Agriculture, Hunting, Forestry, Fisheries	12.4%	18.7%
Mine Extraction	3.6%	3.3%
Industry & Manufacture	5.3%	4.7%
Water, Electricity & Gas Provision	3.7%	1%
Building	14.4%	16.6%
Whole & Retail Sale, Motor Vehicles Repairing & Private & Household Appliances	12.2%	12.4%
Hotel & Restaurant	7%	11.6%
Transportation, Warehousing & Communication	8.8%	9.9%
Financial Mediating	0.1%	0.7%
Immovable Properties, Renting & Business	4.9%	1.5%
General Affairs, Defense & Obligatory Social Welfare	6.5%	1%
Education	5.2%	0.6%
Social Health & Welfare	5.5%	2.1%
Other General, Social & Private Activities	10.3%	15.8%

Resource: Research Calculations

6. Conclusion & Results

In countries with average income like Iran, relative share in agricultural sector decreases in high speed. But agriculture preserves its significance and importance in economic growth rate and pattern. Agriculture by having 10% to 20% of the entire economy is considered as the greatest sector and has a major and significant role in general growth rate of economy. Agriculture in addition to speeding the economic path will result in health and spreading of urbanization. (Mellor, 2003:28)

Agriculture is significant in employment and poverty eradication as growth in Gross Domestic Production and amendment of urbanization pattern. A major part of the poor population belongs to non Agricultural rural sector. Families that do not have enough income because of the fact that their lands are too small will also be included in this category. In non Agricultural rural sector goods and services are produced that are mainly applicable and require small amount of investment and are non-Tradable. Income growth among farmers is the resource of request increase and will result in consumption multiplication effect. Also employment growth rate and poverty decrease are also dependant to Agricultural income.

Thus Agriculture has the most significant role in decreasing poverty and is considered as the most important sources for Gross Domestic Production. For continuing fulfilling these roles by agriculture, it is necessary to increase general and government expenses and costs in this sector significantly.

Considering the high share of poor families in agricultural sector (villages) and building, splendor of these sectors has a significant role in decreasing poverty. Thus economic policies that decrease production increase obstacles in these sectors (such as infrastructural investments, importing limitations of goods in Agricultural sector, work force productivity improvement, etc.) in comparison with the other sectors, will offer a greater help to poverty eradication. In contrast growth in sector 9 (Financial mediating) and sector 12 (Education) has the lowest share in poverty eradication. Presence of sector 12 in the results indicates that Educational sectors are of a great significance in the economy of the country. Thus in case the growth pattern would affect decrease in poverty level, it is necessary that the policy maker would prioritize growth and development in poverty eradicator sectors. The benefit of using this technique in assessment of the effect of development patterns on

poverty eradication is the possibility of expansion of the tables in wider and broader aspects and its more precise categorization and division.

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12/1/2013