

## **THE EFFECT OF THE GLOBAL FOOD AND ECONOMIC CRISES ON POVERTY IN EGYPT**

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### **Abstract**

Over the last Three years, the Egyptian economy has been exposed to two world crises: the first was the world food crisis that started in the second half of 2007, and the second was the world economic crisis, whose consequences began to manifest themselves globally in September 2008. This study aims to determine the quantitative impact of the world economic crisis – and before it, the world food crisis – on poverty rates in Egypt, whether at the national level or on the level of the urban and rural sectors, in light of various economic crisis scenarios. And the effect of the revolution, January 25, 2011 on economic policies to reduce poverty in Egypt. The research methodology adopted relies on the application of simulation tools for social indicators and poverty known as SimSIP to reveal the effect of external shocks – the food crisis followed by the economic crisis – on economic growth and inequality in income distribution, and hence, on poverty rates – while making use of the analysis of specific scenarios related to world prices and their impacts on local prices and incomes. In applying the model, 2005 CAPMAS data on Household Income, Expenditure and Consumption Survey (HIECS) , grouped by income categories, are used.

**Key words:** Global food crisis<sup>1</sup>-Economic crisis<sup>2</sup>- Poverty<sup>3</sup>-Egypt<sup>4</sup>

**JEL Classification:** I3

## **1. Introduction**

During the last years, the Egyptian economy, like the rest of world economies, has been hit by two global crises: first, the food crisis in the second half of 2007 has been accompanied by raising food prices to unprecedented levels, then the financial crisis starting from September 2008 which dramatically accelerated within few months from a crisis in U.S. real estate and financial sectors into a full-scale economic crisis that had far-reaching effects on fiscal and real economies. The gravity of the crisis is not only attributed to its magnitude which drives many to draw an analogy between it and the Great Depression in the early 1930s but to the difficulty of pinning down its repercussions and how long they will last. The economic crisis has manifest consequences including but not restricted to the collapse of many international financial and banking institutions and devastating depression. Still, not too many of these consequences have become visible yet.

In Egypt, the fall in world prices and consequently in local prices because of the economic crisis should have ideally reduced poverty rate counteracting the effect of food crisis. But because of the other consequences of the economic crisis, particularly the decline in economic growth, poverty reduction rate might have not improved. (World Bank, 2009 b.)

### ***1.1 Objectives of the Study***

The broad objective of the present study is to determine the net effect of both the world food crisis and the global economic (financial) crisis on poverty in Egypt on both national and sector (rural/urban) levels. Specific objectives are:

- a) To analyze the economic trends prior to the food and economic crises in order to predict post-crises trends.
- b) To determine the direct effect of the global economic crisis on the major economic indicators and the short-term predictions that can be made in relation to them.
- c) To explore the effect of the global food and economic crises on poverty rate under different scenarios of the economic crisis.
- d) To measure to what extent the agricultural growth can alleviate poverty and contain the negative effects of external shocks.

## ***1.2 Material and Methods***

The methodology used to achieve the study objectives is based basically on the application of the Simulator of Social Indicators and Poverty (SimSIP) that is devised by the World Bank to measure the effect of different sectors growth on the poverty. The model outputs include among others poverty rate, poverty gap, poverty gap square, Gini Coefficient as a measure of income inequality, social welfare function and poverty elasticity.

The SimSIP model inputs include: income/ expenditure distribution according to docile or quintile grouping, population shares of groups and appropriate poverty lines. The availability of the data can help conduct the study at the national as well as the sector (urban/ rural, agriculture/ industry/ service) levels. One of the drawbacks of this model is that it does not either include behavioral correlations at the individual or market level. The credibility of the predictions that the model yields derives from modeling the changes in the per capita income/ expenditure average and the population shares of groups. Another shortcoming of SimSIP is the grouped data entry which may obliterate important data regarding the characteristics of different household groups. (Coudoouel, A., Paternostro, S.2006.)

According to the World Bank, poverty can be studied in two ways: either at the sector level (rural / urban) to see how they contribute to the change in national poverty rate between two periods. The latter is sub-divided into: the changes within each sector between two periods, the effect of population mobility between the two sectors, and the common effect of the changes within and between the two sectors. Alternatively, poverty can be studied in terms of the effect of growth and income inequality on urban and rural poverty.

The data fed into the model include: (1) macroeconomic and sector indicators provided by the State Ministry of Economic Development and the Central Agency for Public Mobilization and Statistics (CAPMAS); (2) world economic indicators under the global food and economic crises provided by the World Bank and other international bodies; (3) Household income, Expenditure and Consumption (HIECS) in the form of aggregated data by income groups in 2004/05 provided by the CAPMAS.

The next section reviews some studies that have addressed the two crises. Section three traces the direct effect of the economic crisis on macro and sector economic indicators, i.e., economic growth, and inflation, as well as the relation between world and local prices during the two global crises. In Section four, a number of

scenarios are analyzed to simulate the effect of global and domestic changes on poverty rates in addition to simulating the effect of agricultural growth on poverty reduction. Section five concludes the study and summarizes its findings with emphasis on future policies to combat poverty.

## **2. The Direct Effects of the Economic Crisis on Macro and Sectoral Economic Indicators**

### ***2.1 The Effect of the Economic Crisis on Growth***

The Egyptian economy achieved a high growth rate in 2007/08 with 7.2% gross domestic product rate as part of the fast economic growth rate between July–September 2006/07 and January–March 2007/08 triggered by the increase in investment expenditure. From the beginning of the global economic crisis there was a sharp decline in the economic growth rate. Recent data on Gross Domestic Product reveal that the real growth rate decreased to 4.7% in 2008/09 compared to 7.2 % in 2007/08 which is attributed to the drop in the real growth rate of investments between July-and September 2008/09 to reach 4.8% compared to 21.9% on the corresponding period of the year before. In 2009/10 the real growth rate decreased to 5.1% (Ministry of Economic Development).

### ***2.2 The Effect of the Economic Crisis on Inflation***

The consumer price index annual average was 11.7% in 2007/08, 0.5% higher than the previous year. There was also an increase in the inflation rate from 8.6% in June 2007 to 20.2% in June 2008 then it reached its peak, 23.6%, in August 2008 with an overall rate of 23.1% in the last quarter of 2007/2008 probably as a result of the rise in energy costs and food prices because of the pressure of local demand on them. Then it started to slow down since September 2008 reaching 21.5% then 14.3% in January 2009 and 10% in August 2009 simultaneously with the global recession which led to price reductions. The economic slowdown, combined with import cost reduction decreased inflation by 13% by the end of 2008/2009 (CAPMASa). Concerning the food index monthly increase, it fluctuated between July 2007 and April 2009 from 4% in the first three months of 2007/08 to 1.6% in April and 3.6% in May of the same year. Then it fell to 0.8% in June then rose to 2.9% in July 2008, In June 2009 decreased significantly to reach 0.5%, and turned to negative values in the following two months (November, December 2009) then rebounded to 2.5% in July 2010.

Studying the relation between the monthly changes in food index and consumer price index in 2007/08, a noticeable increase in inflation rate in the last quarter of 2007/08 can be detected, accompanied by high increase in the prices of

commodity and services groups that are considered in calculating the overall price index between April and June 2008. For example, the annual increase in food prices rose from 22% in April to 27.1% in June accelerating the increase in costs of services groups. The inflation rate of some basic groups was on the increase at the beginning of the fiscal year 2008/09 as with food and beverage index which hit 29.9% in July 2008. The measures taken by the government to curb price hikes such as purchasing wheat from local farmers for world prices and banning rice export for some time did not either slash food prices because of the increase in fuel prices following the fuel subsidies cuts by April 2008 and the continual increase in world food prices (Ministry of Finance). Though price increases in the first quarter of 2008/09 averaged about 22.4% compared to 8.4% on the corresponding period of the previous year, the inflation rate went down in September 2008 to 21.5% and continued down to reach 18.3% in December 2008 then 14.2% in January 2009, And notes that a group of food and drink are the main group that affect of the general rate inflation as The percentage contribution of food and drink group in the rate inflation raised to between 77.1% and 73.5% during the fourth quarter of 2009/10, compared to 52.8% and 54% in the fourth quarter of the previous year 2008/09. (CAPMAS a).

The effect of world food price increase on inflation is dependent on the strength of the correlation between world and local prices which could be shown by estimating Pearson correlation coefficient based on incremental changes. Estimates show that there is a correlation that is positive and statistically significant between the world overall index and the both of the local overall index and local food index with a value of 0.33, 0.36 respectively (Table 1).

Table ( 1 ) : Estimates of the Partial Correlation Coefficients Between the World and Local (Overall and Food) Indices in the period 2006/07 - 2008/09.

Item	Egypt overall index	Egypt food index
The World overall index	0.33*	0.36*
The World food index	0.17	0.19

\* Statistically significant at the level 5%

**Source:** Collected and calculated from: Central Agency for Public Mobilization and Statistics (CAPMAS), **Monthly Bulletin of Index Numbers**, Various Issues, Cairo.

### **3. Simulation of the Effect of External and Local Economic Changes on Poverty in Egypt**

This section discusses the results of the application of the Simulator of Social Indicators and Poverty (SimSIP) used to detect the effect of external and local changes on poverty in Egypt. The results are divided into two sub-sections. The first discusses the results of simulating the effect of the global food and economic crises. The second discusses some basic agricultural and rural structures and characteristics in relation to external shocks and presents the results of simulating the agricultural growth impact on poverty.

#### ***3.1 Results of Simulating the Effect of Crises on Poverty***

##### ***3.1.1 The Effect of Growth on Poverty (2004/05- 2008/09)***

The model has been applied under the actual growth rates realized in the period 2004/05-2009/10. The annual economic growth rate steadily increased to 4.6%, 6.8%, 7.1%, 7.2% in 2004/05, 2005/06, 2006/07 and 2007/08 respectively (Ministry of Economic Development). It went down to 4.7% in 2008/09 and increased slightly to 5.1% in 2009/10. The results of poverty measures (poverty rate, poverty gap, poverty severity and Gini Coefficient) are shown in table 2 showing a downward trend for poverty measures at all levels; national, urban, and rural. The national poverty (of 2 dollar per day) rate, for example, decreased from 26.4% in 2004/05 to 21.8% in 2005/06 then to 19.3% in 2006/07. The rural poverty (of 2 dollar) rate similarly declined from 34.7% in 2004/05 to 29% in 2006/07. The urban poverty rate again went down from 14% in 2004/05 to 13.4% in 2006/07. For the poverty of 1.25 dollar per day rate, it declined as well from 9.9% in 2004/05 to 7.4% in 2006/07 due to the increase in economic growth and the decrease in inflation.

##### ***3.1.2 The Varying Effects of the Global Food and Economic Crises on Poverty***

The economic crisis is expected to have, like the food crisis varying effects on rural and urban poverty, yet in a different manner, noting the fact that the rural poverty rate is usually higher than the urban (70% of the poor population in Egypt are found in rural areas) with a wide income gap between the two sectors and between the highest and lowest income brackets within each. (UNDP. 2005.)

Though the energy and food crises have their devastating effect on the poor and near poor whose almost half of their income is devoured by the large food price increase, those in urban areas were the most affected because they buy their food unlike the poor in rural areas who produce part of their food and benefit from

food sale earnings or the job opportunities created because of the increase in food prices. The effect, then, of the increase in food prices on poverty is reflected in the change in both income and consumption levels particularly in the increase of the cost of a specific food basket and decrease in the consumer welfare. In the rural areas, to cite another example, price increases bring advantages to large farmers who have marketable surplus to sell and wage laborers whose wages would increase as they are much in demand. Small farmers, on the other hand, incur losses because they do not usually have marketable surplus, rather they are net buyers.

Poverty rates have taken an upward turn as food prices soared following the food crisis that hit the world in the middle of 2007 and peaked in July 2008. Two important changes in 2007/08 are worth noting for their clashing effect on poverty, namely the economic growth and inflation rates reaching their highest levels in two decades, 7.2% and 23% respectively. While an increasing economic growth reduces poverty, high inflation raises the number of the poor population. The rise in poverty rate (2 dollar per day) to 27.9% in 2007/08 increasing by 8.6 percentage points reflects the net effect of the two changes.

Unlike the food crisis that basically affected poverty by raising food prices as has been shown, the economic crisis proved to have multivariate effects on poverty in Egypt. One major effect was the decline in the economic growth rate sending poverty up. The second was the decline in food prices which helped reduce poverty with the sum of the two changes determining their net effect on poverty.

The SimSIP results for 2008/09 – the year when the economic crisis erupted – show that poverty rate increased to 46.1% ( at the national level) which is higher than the rate in 2007/08 (the food crisis year) by 18.2 percentage points. In other words, the effect of the economic crisis was cleared as increasing in poverty rate as a result of the decline in economic growth. The poverty (of 1.25 dollar per day) rate followed the same course declining between 2004/05 and 2006/07 then rising in 2007/08, 2008/09. In 2009/10, the second year of the economic crisis, poverty rates decreased slightly to levels that are still significantly higher the ones created by the food crisis (table 2).

With expected moderate rise in global food prices, the steady 4.7% economic growth rate poses the danger of poverty increase as it will not be sufficient to reduce poverty or compensate for the negative consequences of the increase in food prices especially with the fact that food consumption expenditure amounts to 50% of per capita income on average. In addition, the increase in world prices reflects directly and immediately on local prices which do not respond with the

same degree to the decline in world prices which means that local prices remain higher than the world prices when the latter tend to decrease.

**Table (2): SimSIP Results: Changes in Poverty Rate (under Different Growth Rates) for the years from 2004/05 to 2009/10**

	Upper Poverty Line				Lower Poverty Line			
	Growth rate (%)	Poverty rate (P <sub>0</sub> )	Poverty Gap (P <sub>1</sub> )	Poverty severity (P <sub>2</sub> )	Poverty rate (P <sub>0</sub> )	Poverty Gap (P <sub>1</sub> )	Poverty severity (P <sub>2</sub> )	Gini coefficient (%)
	<b>2004/05</b>							
<b>National</b>	4.6	26.4	9	5	9.9	4.2	2.7	34.4
<b>Urban</b>	6.4	13.9	8	137	6	7.3	23.4	35.6
<b>Rural</b>	2.9	34.7	9.3	4.8	10.4	3.8	2.1	22.9
	<b>2005/06</b>							
<b>National</b>	6.8	21.8	8.7	6.6	8.5	5.5	6.5	33.7
<b>Urban</b>	8.1	14.5	4.5	2.5	5.9	1.9	0.9	34.1
<b>Rural</b>	3.5	30.9	10.7	5.8	12.1	4.8	2.9	23.3
	<b>2006/07</b>							
<b>National</b>	7.1	19.3	5.1	2.2	7.4	1.5	0.6	20.5
<b>Urban</b>	8.7	13.4	6	3.6	6.6	3.4	2.2	24.7
<b>Rural</b>	3.3	28.9	11.6	23.6	8.6	8.7	45.1	22.7
	<b>2007/08 (Food Crisis)</b>							
<b>National</b>	7.2	27.9	9.9	6.5	10.2	5.5	4.9	21.1
<b>Urban</b>	8.7	17.2	6.6	4.8	6.6	4.1	4.2	22.9
<b>Rural</b>	3.3	38.1	12.7	6.9	14	5.7	3.5	22.7
	<b>2008/09 (Beginning of the Economic Crisis)</b>							
<b>National</b>	4.7	46.1	6.9	5.9	25.0	10.4	7.0	36.3
<b>Urban</b>	5.2	41.3	7.3	5.2	22.4	11.4	3.2	40.4
<b>Rural</b>	3.1	56.9	9.2	6.8	33.6	13.3	9.2	33.8
	<b>2009/10</b>							
<b>National</b>	5.1	42.4	7.3	5.5	21.4	9.8	7.9	33.9
<b>Urban</b>	6.2	39.0	6.9	4.9	18.7	8.4	3.5	34.0
<b>Rural</b>	3.3	54.6	9.2	7.1	29.5	11.7	9.8	31.3

**Source:** The results of SimSIP as applied in the study.

For rural and urban poverty rates, the net effect of the crisis on each is contingent on a number of factors, most importantly is the sectoral (urban/rural) growth rate



which is indicative of the change in income/expenditure. The initial effects of the crisis point to a greater damage to the urban growth rate.

### ***3.2. The Role of Agricultural Growth in Poverty Reduction under External Shocks***

#### ***3.2.1. Agricultural and Rural Structures in Relation to Crises***

Usually external shocks such as the global food and economic crises have varying effect on the agricultural and rural sectors because of the heterogeneity of its population, differences in their income sources and structures. The global food crisis and the consequent rise in food prices have significantly raised agriculture-based incomes especially for net sellers who have marketable surplus. On the other hand, rural families with limited farm assets who have no marketable surplus and buy most of their food were badly affected by the global crisis. Poorer agricultural families with too small assets who depend on wage labor to make a living may benefit from the crisis as their wages increase because of the rise in agricultural prices and the increasing demand on labor. Their wage increase, however, cannot be enough to compensate the rise in living costs due to food price increase especially for those families which usually spend about 33.6%, 50.3% of income on average in urban and rural sectors respectively, (CAPMAS). The rural families worst affected are these who have no assets at all and do not work in agriculture.

The effect of the food crisis- which may recur in the future on the various income brackets within the agricultural sector is not just limited to the varying degrees of vulnerability they are liable to according to the changes in income structures but it also shows in the inequality of income distribution. In this respect, one would simply compare the huge profits made by large farmers who have enough marketable surplus and farm assets to the minor profits of small farmers which may even turn to net loss, which is the outcome of net buying and meager wage increases. The net effect of these changes is inequality in income distribution and a widening gap between the different income brackets within the agricultural sector. The change in rural poverty rate, consequent to the food crisis, largely depends on the outcome of the change in growth rate and income distribution inequality; while the rise in the price of agricultural products pushes agricultural production forward and therefore the growth rate which have a positive effect to reduce the poverty, but on the other hand the income inequality raises poverty.

With the majority of the poor in Egypt found in the rural areas, adopting economic policies that would inject more money into agricultural investment and

infrastructure projects as well as adequate social expenditure policies can be highly effective in reducing poverty, an attitude that proved a success in many countries.

### 3.2.2. *Simulating Agricultural Growth Impact on Poverty*

To analyze the effect of the change in growth in the agricultural sector on poverty, the model was run at various levels of agricultural growth rate for 2009/10. As shown in table (4), at the 3.5% agricultural growth rate the poverty (of 2 dollar per day) rate reaches an overall 51.9% in the rural sector, the poverty gap in the two sectors 6.5% and the poverty severity 4.3% .In other words.

To explore the relationship between the national poverty measures and growth in the agricultural sector the model was applied at 4.5% and 2% growth rates. Results point to the possibility of significant poverty reduction at 4% rate. That is to say, an annual increase in rural growth rate to 4.5% may lower the poverty (of 2 dollar per day) rate to 38.5% among rural dwellers. The poverty (of 1.25 dollar per day) rate may also decrease to 15.3%.

On the other hand, as the results of SimSIP reveal, poverty alarmingly increases at 2% annual rural growth rate. At this rate the rural poverty (of 2 dollar per day) rates rise to 92.01%. The rural poverty (of 1.25 dollar per day) rates also go up to 44.4%.

**Table (4): SimSIP Results: The Effect of Rural and Agricultural Growth Rates on Poverty Measures.**

Growth rate (%)	Upper Poverty Line			Lower Poverty Line		
	Poverty rate (P <sub>0</sub> )	Poverty Gap (P <sub>1</sub> )	Poverty severity (P <sub>2</sub> )	Poverty rate (P <sub>0</sub> )	Poverty Gap (P <sub>1</sub> )	Poverty severity (P <sub>2</sub> )
3.5	51.9	6.5	4.3	18.6	8.8	7.3
4.5	38.5	5	3.4	15.3	7.3	5.02
2	92.01	17.9	15.3	44.4	17.3	9.01

Source : SimSIP results as applied in the study.

The above results, then, stress the paramount importance the agricultural sector has in reducing poverty which can be realized by injecting more investments in the agricultural sector. This would prevent the agricultural growth rate deteriorate which simply means higher rural and national poverty rates. The current modest share of agricultural investment (2.9% of the implemented national investments in 2009/10) is by no means proportionate to the vital role that agriculture can

play, or to the social and political importance of this sector in Egypt's economy.(Table 4).

#### **4. Conclusion**

Though it lasted for a short while, the global food crisis had deeply negative effects on poverty in Egypt which counteracted the considerable improvement in poverty combat in the last three years prior to the crisis in which economic growth rates were the highest in two decades. On the contrary advantageous for the poor was the economic crisis which had direct effect on the Egyptian economy whether at the national level or the sectoral level. There is significant correlation between world and local inflation with respect to food prices; when world food prices increase; local prices automatically increase, yet when the former decline, the latter take longer time to go down. This holds true for the period between the beginning of the food crisis when food prices soared to unprecedented levels with the implication this had for local prices and the beginning of the economic crisis that caused a decline in world prices to reach a level slightly higher than that before the food crisis. Local prices remained relatively high though which had grave consequences for poverty in Egypt. Results in terms of the effect of the global food crisis on poverty point to a 8.6% increase in the poverty (of 2 dollar per day) rate from 19.3% in 2006/07 to 27.9% in 2007/08 noting that the economic growth rate in the latter year reached 7.2%, the highest in two decades which was still insufficient to compensate the negative consequences of the jump in consumer price index. The economic crisis led to a decline in the annual economic growth rate from 7.2% to 4.7% and 5.2% for 2008/09 and 2009/10 at the time of the economic crisis. Results reveal that as far as the effect of this change on poverty is concerned, the poverty (of 2 dollar per day) rate is expected to increase to 46.1%, 42.4% higher than that at the time of the food crisis.

Poverty rates show high sensitivity to inflation particularly if combined with slower economic growth. Under these "stagflation" circumstances, a 20% increase in inflation rate would raise the poverty (of 2 dollar per day) rate substantially from 42.4% to 59.3% at the national level.

The results of the study stress the need for effective poverty combat strategies to help the Egyptian economy better survive the effects of external shocks on the economic and social climates in Egypt. The proposed strategies should aim at maintaining a high economic growth rate giving the highest priority to the agricultural sector for the exceptionally vital role it can play in reducing poverty compared to the other economic sectors .

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