

BREAD SUBSIDIES IN EGYPT

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ABSTRACT

The topic of Baladi bread subsidies is of great interest to the poor Egyptian people. About 80% of Egyptian people consume baladi bread. Subsidies protect the welfare of the poor and the economically disadvantaged. Food subsidy programs are facing more criticism in developing countries because of their large contribution to government budget deficits. The cost of food subsidies reached about 1.8 % of the GDP in Egypt in 2008.

Leakages in bread subsidy system are substantial. Baladi bread leakages at the national level were about 41 percent of the total supply in 2004/05. The higher the leakage is, the higher the cost of delivering subsidies. There is a complete lack of targeting in the system. The system allows all customers to enjoy the benefits and there is minimal supervision to ensure that the bread reaches the poor.

This research focuses on targeting subsidy of the Baladi bread to the intended customers and explores the policy options in this regard. It derives the income elasticity of Baladi bread for three income groups: high income, medium income, and low income. The study clearly illustrates that Baladi bread is an inferior good for high-income families. The research also derives the demand function for the group of bread and cereals based on 2008/09 CAPMAS survey.

The study reveals that poverty has almost no weight in deciding on the allocation of bread subsidies to different governorates. Field studies suggest that poor people prefer in-kind subsidies to cash subsidies because they do not trust the government.

INTRODUCTION

This study is on food subsidies and targeting in Egypt. The food subsidy system is intended to provide the poor with basic food stuff and to help overcome poverty. The Baladi bread is sold at subsidized prices and is universally available to any potential buyer. The price of a loaf of bread has been fixed at 5 piasters per loaf while the actual cost is about 25 piasters per loaf (UN Situation Analysis, 2010). The main goal of food subsidies is to increase the caloric intake of the poor. Egypt's food subsidy systems have been an important source of food security for a large proportion of the population. They have been implemented since World War II as a mean of providing basic food to all poor people.

Food subsidy is one of many social safety nets that aim at poverty alleviation. The efficiency of food subsidies system in Egypt is relatively low

and administrative costs are very high. The mix of commodities that are supplied by food subsidies is not tailored to the geographical and socio-economic differences that are found in Egypt. Also, the mix doesn't take nutrition and health considerations into account. Moreover, food subsidy system is characterized by significant leakages and diversion of commodities. Therefore, efficient and well-targeted food subsidies that stop price rise from passing on to poor consumers are a major priority.

Noncontributory transfer programs which are publicly funded and targeted to the poor have a lengthy history. Free food distribution in Egypt at the pharaoh's time and in Ancient Rome, "poor laws" in England and Germany which provided financial assistance for those unable to work, used features of the modern welfare state in the latter half of the nineteenth century. These programs are typically called social protection programs or social safety nets. They are now present in developed countries and they are becoming more widespread in developing countries (Alderman and Hoddinot, 2007).

Research Objective:

The objective of this study is to explore the baladi bread subsidy system and to try to assess the possibilities for improving the food subsidy systems in order to reach the poor more effectively.

Research Questions:

Our study will attempt to provide answers to the following questions:

How much of the subsidized bread has gone to waste at the consumer level, Does the consumer prefer cash subsidies to in kind food subsidies, If the consumer prefers cash subsidies, how much do they need to make up for the current in-kind bread subsidies, What are the potential savings from possible targeting policies, Are food subsidies distributed fairly across geographic regions, Is there a bias against rural consumers?

Hypotheses:

The study's main hypotheses which will be subject to testing include the following:

Food subsidies are not well targeted in Egypt , there are possible ways to improve the access of the poor to subsidized bread in Egypt , The waste of subsidized bread at the consumer level is not substantial, Poor consumers prefer in-kind subsidies to cash subsidies.

Methodology:

The study will primarily rely on data collected from secondary sources such as previous studies and CAPMAS surveys known as Household Income, Expenditure, and Consumption Surveys (HIEC). The last three HIEC surveys cover the periods 1999/2000, 2004/2005 and 2008/2009. The surveys cover a substantial number of households in rural and urban areas. The idea of collecting primary data from a small survey in Cairo was ruled out since the results would not be representative.

The collected data will be analyzed with appropriate statistical and econometrics techniques.

1- Literature Review

1.1 Food Subsidies and Their Goals:

Food subsidies are an effective type of social safety net. They are targeted to the poor or to people who might become poor because of adverse shocks (Adams, 2000).

Food subsidies hope to achieve Social goals, economic goals, political goals, economic growth, to alleviate the suffering of the poor, to promote an equitable distribution, and to enhance household food security and nutrition.

1.2 Reaching the poor through public action:

In an ideal world, government policy would identify with the poor without cost and would channel benefits exclusively to them. In practice policymakers lack information on individual living standards. And the costs of obtaining this information can be high. Means testing and other forms of targeting have social costs or cause distortions because they lead to changes in behavior. In developing countries, the identification on income and assets is even more difficult, especially in rural areas and the administrative problems could be daunting.

One promising avenue is to use incentives as a screening device so that the poor are encouraged to participate and the non-poor are discouraged. In the practice the success of public intervention involves more than cost-effectiveness. The demands made by different sections of the population, and their ability to exert pressure on the authorities, are often more influential than the government's economic calculations. Fine targeting based on a single-minded concern for cost-effectiveness can reduce public interest in the vigorous implementation of government programs to help the poor (Coady, 2004).

1.3 Origins of food subsidies:

Three major forces account for the origins of food subsidies: international factors such as the Second World War, the availability of food aid, and social welfare goals. In the places where food subsidies are most substantial and widespread, they are connected with social welfare goals, often arising from a socialist ideology (IFPRI, 1988). In fact, food subsidies were initiated in Egypt during World War Two and then continued at a larger scale because of welfare and socialist goals.

1.4 Types of food subsidy:

* A food stamp program is one that distributes coupons or stamps which have the same value as cash when used for food or particular foods in a store. The buyer would simply use stamps instead of cash. The seller can trade the stamps from a government office or bank. The greatest advantage to this system is that it takes advantage of the existing food marketing system. The worst disadvantage of this system is that it needs an administrative system for providing stamps to specifically targeted households (IFPRI, 1988).

* Unrestricted food price subsidies are not rationed or even targeted. They are available to anyone who wishes to buy them. They are available at a price that is below market price. The best advantage to this system is that it covers a wider range of the population and nutritional effectiveness is

maximized. Since no stigma is attached to participation (no one wants to be labeled as poor), all disadvantaged people are more likely to participate because of the fact that subsidized food is cheaper than alternatives. They are also easier and cheaper to administer. The main disadvantage is the cost which tends to be high (IFPRI, 1988).

* In the rationed subsidy system, the quantity of food provided is restricted per household limit. Its greatest advantage is cost control. Another is reliability of supply.

* The last type of food subsidy is uncompensated price control. This happens when the government fixes the price below equilibrium price and sellers are forced to use this price. Uncompensated price controls are unenforceable for the most part. However they could be effective in the case of rent control (IFPRI, 1988).

1.5 The current condition of developing nations:

For more than 10 years, the performance of developing countries in alleviating poverty has been mixed. In some places, it has been discouraging. The number of impoverished people in South Asia has increased by around 10 percent. The existence of malnutrition in south Asia is significantly higher than in other developing nations. Over the same time span, the rate of poverty has increased by a slight amount in Sub-Saharan Africa (about 48 percent) and the spread of malnutrition has increased as well. There has been a noticeable lack of targeted education and assistance programs. Clearly, operating as if there is no problem in existence is inadequate. An effective strategy for decreasing the rate of poverty is required urgently (Coady, 2004).

1.6 Food subsidies in developing nations and the types of food subsidy used:

In Jamaica, for example, poor individuals receive *food stamps* at health clinics (Adams, 2000). Food stamps are also given to the poor in Sri Lanka and Jordan. Mexico has a *Tortivales* (free tortilla program) and Bangladesh uses its *palli* rationing scheme to great effect (World Bank, 2010).

Many developing nations use universal food subsidies. It involves the government fixing the price beneath equilibrium price. During the 60's and 70's, universal food subsidies were a major feature of strategies for the alleviation of poverty in developing countries. Countries such as Bangladesh, Tunisia, Pakistan, India, Egypt, and Sri Lanka began implementing universal food subsidies in the early years of the 1950's (Coady, 2004).

This involved levying explicit and implicit taxes on agricultural outputs. There were two proceedings that shed light on the disadvantages of this approach. The first was that world food prices increased dramatically in the 1970's. The cost of food subsidies became massive. This led governments to alleviate costs through budget deficits and public expenditures. The cost of the program became as high as 4-5% of the GDP in Sri Lanka and Tunisia. Eventually, universal food subsidies were viewed as inefficient because a substantial amount of the benefits were leaked to non-poor people. Another reason why it was seen as inefficient was that the price manipulations became highly distortionary (Coady, 2004).

The present food subsidy system in Bangladesh is a continuation of its old system which originated in the 1941-44 wartime food policies of the government of British India and of the government of Bengal. There are a few modifications which are reflected in circumstantial changes. The goals of the program are focused towards public employees in rural areas such as industrial workers, police and army officials, and urban consumers. However, the rural population that is non agricultural has attracted national attention and has influenced public food subsidy programs in the past few years (IFPRI, 1988). There is an important question which should be asked and it is: Who benefits from the program? And by how much? (IFPRI, 1988).

The modified rationing method provides food grains to rural people as well as to citizens of towns who live outside big cities. Other rationing mechanisms are geared toward urban people for the most part. In particular, they are directed towards police and military persons, government workers and industrial employees (IFPRI, 1988).

1.7 Food Subsidies in Egypt:

The food subsidy system covers baladi bread and flour and goods subsidized for ration card holders such as sugar, rice, cooking oil, and tea. The research will focus on the subsidies of Baladi bread as it receives a substantial part of the governmental subsidy. Commodities are distributed at rationed quantities at low prices and made available at higher but still subsidized prices through cooperatives, flour stores, and bakeries (Alderman and Von Braun, 1984). Costs of food subsidies were 1.8% of GDP in 2008 (World Bank, 2010). The Ministry of Social Solidarity is mandated with food subsidy and cash transfer programs as its major tools for poverty alleviation. There is a lot of pressure on the ministry to come up with effective targeting criteria to make these tools more efficient and less wasteful. The main problem is that expenditure on the poor is not well-targeted. There isn't a database of families that can deliver benefits to those who truly need them. The individuals who can prove that the rules of eligibility are met by them can make a claim for the benefits (United Nations, Situation Analysis, 2010.). There are three major problems with this system:

1. The information for eligibility is old and doesn't reflect present hardships and needs.
2. The amount paid is too small; not enough money is spent in cash transfer programs to really help the needy and ensure their wellbeing.
3. Corruption is rampant in the system due to how easy it is to support fake claims.

It has been known for a long time that the subsidized bread program isn't as efficient as it could be. There is a consensus that food subsidies should be improved to target the poor better in Egypt. The absolute cost of food subsidies remains high; it was about LE 20 billion in the fiscal year 2008-2009. Baladi bread and baladi wheat flour compose more than 70% of the costs of food subsidies. (United Nations, Situation Analysis 2010).

There are some solutions to the problem. Which would include Cracking down arbitrage, solving the problem of bureaucracy and using a well-organized system?

One should ask the question: What can be done to make food subsidies more effective? The answer lies in better targeting to needy people. One promising avenue is to use incentives as a screening device so that the poor are encouraged to participate and the non-poor are discouraged.

1.8 Baladi bread subsidy:

Baladi bread is considered to be the major element in the diet of Egyptian people and is still one of its most important components, especially for low income people. It is considered a filling substance and is viewed to be the major source of energy.

Baladi bread represents about 80% of the total of all kinds of bread produced by commercial bakeries on the national level, and it is preferred by the vast majority of citizens. It is certain that making it available is considered to be vital for food security. Therefore, the government has been careful to make it readily available, and has shouldered the burden because it spends an enormous amount of money to be paid annually for bread subsidies, as the subsidy of wheat and its products has increased to about L.E 5.7 billion at a ratio that approaches 80% of total food subsidies which has reached around L.E 7.3 billion in the year 2003/2004. Baladi bread subsidy has become an increasingly heavy burden on the government's budget.

The main problem with baladi bread is that the customer suffers from a waste of time and effort and standing in long lines for hours in front of bakeries even with the bread being of low quality. In addition, not all the bread reaches the intended customers because a large portion of the baladi bread wheat flour and bread is leaked out and is used for things other than its purpose, a big portion is used as animal feed for livestock and poultry because of its bad quality and low prices.

Another substantial portion of the wheat flour that is reserved for baladi bread bakeries is leaked out and used by commercial bakeries in the private sector and warehouses that sell wheat at market prices. There is an increase in the leaked portion because of bad quality. Productive capacities are not fully utilized in baladi bread bakeries; about 75% of total available productive capacities are not utilized (Halim, 2004). This is due to the insufficient quota of the subsidized wheat flour, which hovers between 5 and 30 sacks¹ of wheat flour in one day.

1.9 Literature Conclusion:

Food subsidies can be a double-edged sword in Egypt. They are effective, but only to a certain extent. They can be constructed and organized in much better ways. If accomplished successfully, they can be an effective means of alleviating poverty and increasing caloric intake by the poor. On the other hand, they could become a waste of public resources by draining time, effort and money. One of the best ways of ensuring good results and an effective food subsidy system is through targeting to specific people (The best recipients for targeting are people who live below the poverty line). Effective targeting to the poor can better direct resources to the poor and avoid the wasting of money paid by the government.

¹ The weight of one sack is 100 kilograms.

2 Analysis of Baladi Bread Consumption

Table (2.1) reveals that per capita annual expenditure on subsidized baladi bread varied from 51.39 L.E in urban Lower Egypt to 34.91 L.E in rural Upper Egypt in year 2008-09. On average, total per capita annual expenditure on all types of bread reached 47.95 L.E, which is mostly dominated by expenditure on subsidized baladi bread. The daily per capita consumption of baladi bread was about 2.78 loaves in the metropolitan areas and 1.78 loaves in rural Upper Egypt. On average, daily per capita consumption of baladi bread was about 2.14 loaves in 2008/09.

Table (2.1): Per Capita Consumption of Bread and Flour, 2008-09.

	Expenditure LE/Person/Year				Quantity Kg/Person/Year			Number of loaves
	Subsidized baladi bread	Refined baladi bread	Whole wheat bread	Shamy bread	Subsidized baladi wheat flour	Free market flour	Maize	
Metropolitan	46.82	18.73	0.25	0.84	0.10	4.92	0.06	2.78
Lower Urban	51.39	10.09	0.06	0.52	0.11	4.62	0.70	2.56
Lower Rural	33.71	2.33	0.03	0.13	0.31	9.68	4.90	1.80
Upper Urban	48.44	14.32	0.03	0.10	15.38	6.96	0.43	2.47
Upper Rural	34.91	2.76	0.02	0.02	28.24	12.93	6.99	1.78
All Egypt	40.10	7.51	0.07	0.27	9.87	8.88	3.56	2.14

Source: World Bank, 2010.

The consumption figures differ from one source to another. For example in a field study conducted in 2009(Korayem), the average daily consumption of baladi bread was 17 loaves per household in rural areas and 22 loaves in urban areas. According to CAPMAS, HIECS 2008/09, the average household size is 4.2 in urban areas and 5.0 in rural areas. Therefore, the average per capita daily baladi bread consumption was 3.4 loaves in rural areas and 5.2 loaves in urban areas. These figures are obviously much larger than the figures reported by the World Bank.

There are wide disparities between governorates in availability of baladi bread bakeries and hence in availability of baladi bread. As table (2.2) indicates per capita daily consumption of bread loaves in 2008 were 3.7 in the front governorates, 3.7 in the metropolitan governorates, 2.98 in Upper Egypt governorates and 2.33 in Lower Egypt governorates. Clearly metropolitan and border governorates are favored at the expense of Lower and Upper Egypt. The metropolitan governorates include Cairo, Alexandria, Port Said, and Suez. The border governorates include Red sea, new valley, Marsa Matrouh, North Sinai and South Sinai.

Overall, the data show an increasing trend of per capita consumption of baladi bread. For example, per capita consumption in metropolitan governorates increased from 2.9 to 3.3 loaves between 2003 and 2008. At the national level per capita consumption increased from 2.1 loaves in 2003 to 2.7 loaves in 2008. The increase in baladi bread consumption could be due to the rapid increase in prices of substitute commodities like rice, macaroni and other types of unsubsidized bread. This was particularly evident in year 2008 where there were worldwide food crises and upsurge of prices.

Table (2.2): Daily per Capita Consumption of Subsidized Baladi Bread (Loaves of Bread)

Year	Metropolitan Governorates	Lower Egypt Governorates	Upper Egypt Governorates	Border Governorates	All Egypt
2003	2.906849	1.49589	2.408219	3.432877	2.120548
2004	3.112329	1.70137	2.482192	3.484932	2.273973
2005	3.2	1.980822	2.693151	3.646575	2.493151
2006	3.320548	2.046575	2.745205	3.528767	2.561644
2007	3.265753	2.065753	2.706849	3.421918	2.545205
2008	3.309589	2.336986	2.986301	3.717808	2.780822

Source: CAPMAS, Bread Study, 2010.

According to table (2.3), about 78% of households in the poorest expenditure quintile consumed subsidized baladi bread in 2008-09. Interestingly, about 77.7% of households in the richest expenditure quintile consumed baladi bread in the same year. That means that subsidized baladi bread is consumed by all income groups in Egypt, in spite of the fact that high income families can afford to pay higher market prices for baladi bread. Households in rural Upper Egypt seem to have the least demand for subsidized baladi bread among all regions. This is probably due to the preference of rural consumers in Upper Egypt where they prefer to bake their own bread. Overall, 81 per cent of all Egyptian citizens consumed subsidized baladi bread in 2008/09. This is up from 75.9 per cent in 2004/05.

More or less similar results are reported by Korayem, 2010. According to her field study about 80 percent of households consume baladi bread in urban areas and about 65 percent of rural households consume baladi bread. More than 90 percent of households consume baladi bread because of its low price.

Table (2.3): Share of Households consuming subsidized baladi bread by region and expenditure quintile. (% of all households).

	2008 / 09					Average	2004 / 05					Average
	poorest Q	2nd Q	3rd Q	4th Q	Richest Q		poorest Q	2nd Q	3rd Q	4th Q	Richest Q	
Metropolitan	93.9	96.2	96.4	93.0	78.3	85.3	88.3	93.5	92.6	88.1	71.3	79.7
Lower Urban	91.0	94.1	94.4	94.0	83.0	89.5	93.0	93.3	92.0	92.6	85.7	90.3
Lower Rural	78.1	78.4	80.1	80.2	78.9	79.4	72.8	74.5	75.0	73.7	76.2	74.5
Upper Urban	89.2	87.4	91.6	87.4	71.9	83.4	81.9	81.8	84.0	84.5	69.1	78.4
Upper Rural	73.3	75.7	75.6	73.6	69.4	74.0	65.5	65.3	64.8	65.3	67.1	65.5
All Egypt	78.0	81.0	83.8	84.9	77.7	81.0	71.7	75.8	78.2	79.7	73.8	75.9

Source: World Bank, 2010.

The picture was almost the same in 2004-05 where on average 73.8% of the richest expenditure quintile consume baladi bread and 71.7% of households in the poorest expenditure quintile purchased subsidized baladi bread. Overall, 75.9 per cent of all Egyptian citizens consumed subsidized baladi bread in 2004/05. Comparing the figures of 2004/05 and 2008/09 reveal that higher percentage of people are consuming subsidies baladi

bread in 2008/09. This is true for all income quintiles. For example, 77.7 percent of people in the richest quintile consumed baladi bread in 2008/09; up from 73.8 in 2004/05.

This pattern could be explained by the general rise in world food prices in 2008 and the heavy reliance of Egypt on food imports. Consumers would substitute cheaper subsidized baladi bread for expensive items such as rice, and noodles. According to FAO, 2009, Egypt responded to soaring food prices by expanding its food subsidy system. The total cost of the system increased from LE 9.4 billion to LE 16.5 billion. The government also increased quotas of subsidized items, reduced import tariffs on food items and imposed an export ban on rice exports.

2.1 Econometric Analysis:

The study attempts to estimate the demand function for baladi bread using the available data from CAPMAS Household Income, Expenditure, and Consumption Surveys (HIECS). Recently, CAPMAS has conducted three surveys in the years of 1999/2000, 2004/2005 and 2008/2009. The data covered by the surveys are cross –sectional in nature and thus does not show price variations. In addition, the consumer price of subsidized baladi bread was fixed by the government at half a piaster during the period 1952-1975, and 1 piaster during the period 1980-1983. Then the price increased to two piasters from 1984 to 1987. Finally, the price increased to 5 piasters in 1988. And this price stayed the same until now and didn't change at all in 24 years.

This paper will therefore attempt to estimate the Engle curves for baladi bread that relate consumption to income. A wide selection of functional forms for Engel curves has been explored in the literature. For example, we can experiment with double logarithmic, semi logarithmic, and log reciprocal forms as follows respectively;

$$\log q_i = \alpha_i + \beta_i \log x_i \quad (2.1)$$

$$q_i = \alpha_i + \beta_i \log x_i \quad (2.2)$$

$$\log q_i = \alpha_i - \beta_i x_i^{-1} \quad (2.3)$$

Each of the above forms performs better for some goods and over part of the expenditure range. None of these forms, however, is fully consistent with the adding up restriction that economic theory implies. That is the budget devoted to individual goods in a certain bundle should add up to the total budget devoted to the whole bundle. The theoretical plausibility of these models is not enhanced by their failure to meet this requirement (Deaton and Muellbauer, 1980).

One extremely useful form which is consistent with adding up relates budget shares linearly to the logarithm of income (or budget),

$$W_i = \alpha_i + \beta_i \log x_i \quad (2.4)$$

Where α_i and β_i are parameters to be estimated. And w_i is the budget share of commodity i and x_i is the income. Adding up requires that $\sum w_i = 1$, which implies that

$$\sum \alpha_i = 1, \quad \sum \beta_i = 0 \quad (2.5)$$

In fact, the adding up restriction is satisfied automatically if (2.4) is estimated equation by equation by ordinary least squares. The income elasticity is estimated per the following formula;

$$e_i = 1 + \beta_i/w_i \quad (2.6)$$

Therefore; the model allows luxuries (β_i bigger than 0), necessities (β_i less than 0), and inferior goods. In contrast, the double logarithm model does not allow the income elasticity estimate to vary from one point to another on the Engle curve.

2.2 Data:

Three sets of data are utilized to estimate the Engle curves for bread in Egypt. The first set is for urban and rural households from 1999/2000 HIECS and the second set is based on 2004/2005 HIECS as shown in Korayem, 2010. The last survey of 2008/2009 does not have detailed information on bread consumption and expenditure but has information on the aggregate group of bread and cereals. Therefore, the 2008/09 will be utilized to estimate the demand equations for the aggregate group of bread and cereals. The data sets are presented in the appendix of the study.

2.3 Results of the Baladi Bread Demand Equations:

The results of OLS estimation of 1999/2000 Survey are as follows:

$$W^U = 13.25 - 1.19 \ln X^U \quad (2.7)$$

(10.830) (-9.196)

$R^2=0.824$ N= 20

$$W^R = 52.28 - 5.76 \ln X^R \quad (2.8)$$

(7.393) (-6.789)

$R^2= 0.767$ N= 16

The results of OLS estimation of 2004/2005 Survey are as follows:

$$W^U = 9.725 - 0.863 \ln X^U \quad (2.9)$$

(24.647) (-20.760)

$R^2= 0.959$ N= 20

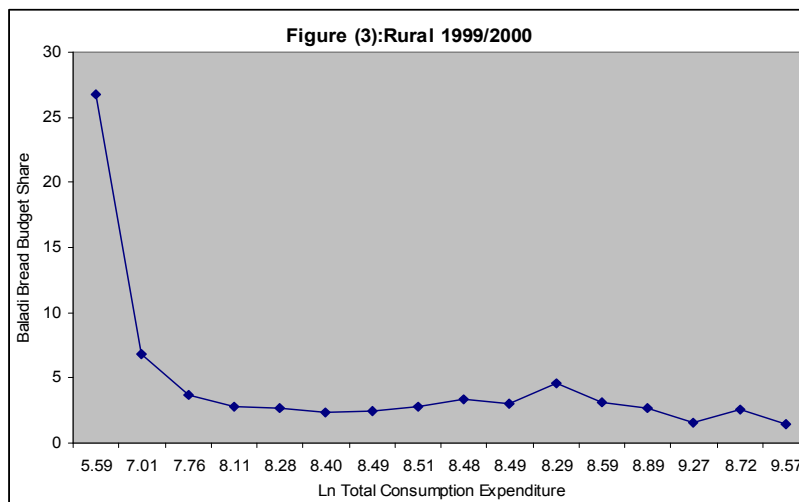
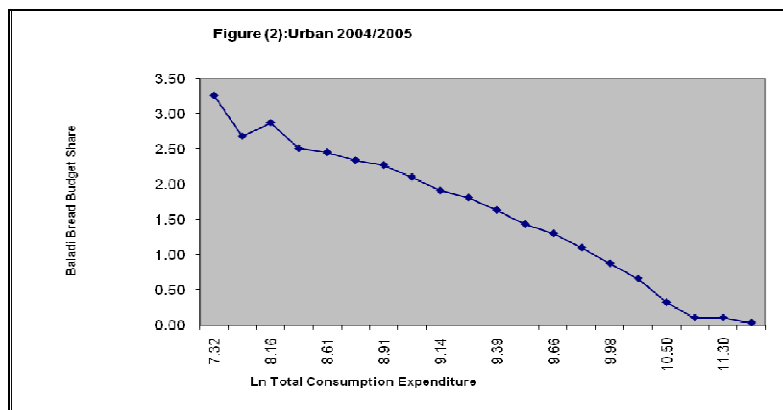
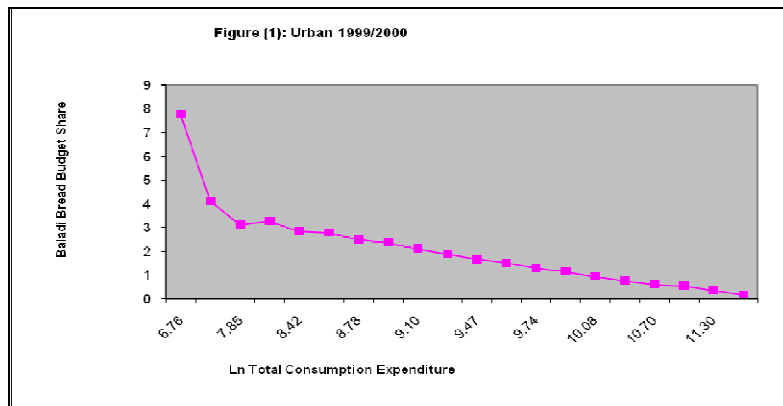
$$W^R = 8.614 - 0.786 \ln X^R \quad (2.10)$$

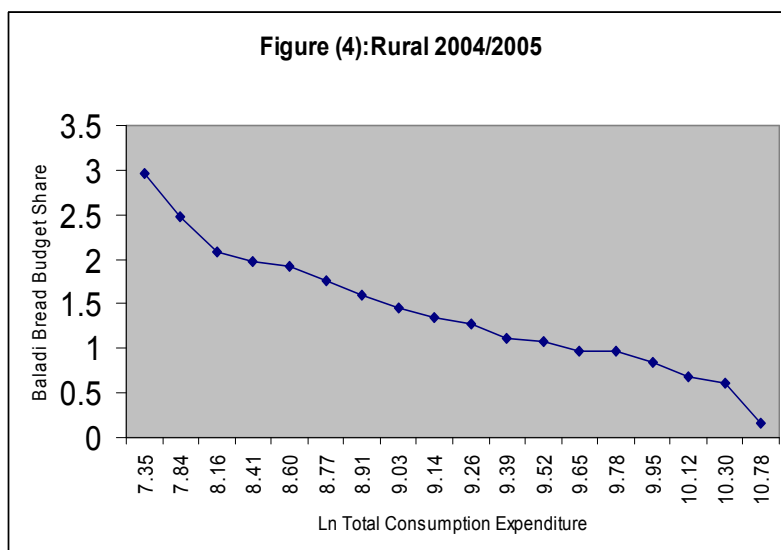
(45.73) (-38.44)

$R^2= 0.989$ N= 18

Where W^U and W^R represent the baladi bread budget shares per urban and rural household respectively. $\ln X$ is the natural logarithm of per household total consumption expenditure. Total consumption expenditure is treated as a proxy for the household income. The numbers between parentheses are the t-ratios of the estimated intercept and slope coefficients.

The values of R squared indicate that the model fits the data quite well. Figures (1) to (4) indicate clearly that there is an inverse relationship between baladi bread budget share and the logarithm of income or total consumption expenditure. All the estimates of the intercept and the slope coefficients are statistically significant.





The calculations of the different levels income elasticity are summarized in table (2.4). The samples are divided up to three sub-groups to represent low income, middle income and high income families.

Table (2.4): Baladi Bread Budget Shares and Income Elasticities for Urban Households

Income Bracket	1999/2000		2004/2005	
	Budget Share	Income elasticity	Budget Share	Income elasticity
Low-income Households	3.78	0.68	2.62	0.67
Middle-income Households	1.72	0.31	1.61	0.46
High-income Households	0.58	-1.05	0.35	-1.46

Table (2.4) indicates that urban low-income families devoted about 2.62 percent of their total consumption expenditure to baladi bread in 2004/2005. This budget share drops to 1.61 percent for middle-income families and to 0.35 percent for high-income families. The income elasticity estimates show that baladi bread is considered a necessity for low-income and middle-income families. However, the negative value of the income elasticity for high-income families reveal that baladi bread is in fact an inferior good for wealthy families.

Table (2.5): Baladi Bread Budget Shares and Income Elasticity for Rural Households

Income Bracket	1999/2000		2004/2005	
	Budget Share	Income elasticity	Budget Share	Income elasticity
Low-income Households	7.52	0.24	2.19	0.64
Middle-income Households	3.20	-0.78	1.31	0.40
High-income Households	2.07	-1.75	0.71	-0.11

Table (2.5) indicates that rural low-income families devoted about 2.19 percent of their total consumption expenditure to baladi bread in 2004/2005. This budget share drops to 1.31 percent for middle-income families and to 0.71 percent for high-income families. The income elasticity estimates show that baladi bread is considered a necessity for low-income and middle-income rural families. However, the negative value of the income elasticity for rural high-income families suggests that baladi bread is in fact an inferior good for wealthy rural families.

The estimates for demand income elasticities according to Korayem, 2010, were 0.852 for urban households and 0.443 for rural households. Her estimates are based on data from CAPMAS for 2004/05 HIECS. Korayem study utilized the double logarithmic model and therefore the elasticity estimate is constant for the whole sample. In other words we cannot derive elasticity estimates for low-income, middle-income and high-income households from the double logarithmic model.

2.4 Testing Hypotheses:

It is of interest to test the validity of certain hypotheses regarding the estimates of Engle curves. The first hypothesis to test is the claim that Engle curves for urban households are the same for 1999/2000 survey and for 2004/2005 survey. To perform this test we need to run two regressions. The first one is the pooled regression that combines all observations for 1999/2000 and 2004/2005 in one equation which is estimated by OLS as follows:

$$W^U = 11.76 - 1.055 \ln X^U \quad (2.11)$$

(15.31) (-13.01)

$$R^2 = 0.82 \quad N = 40$$

The above equation is known as the restricted model since it assumes that α_i and β_i are the same for both sets of data. To allow for α_i and β_i to change between the two sets of data we use the dummy variables technique as explained in Gujarati, 2004. The estimated equation is as follows:

$$W^U = 9.72 - 0.86 \ln X^U + 3.53D - 0.32 D \ln X^U \quad (2.12)$$

(9.28) (-7.81) (2.55) (-2.24)

$$R^2 = 0.86 \quad N = 40$$

Where:

D= 1 for 1999/2000 observations, D= 0 for 2004/2005 observations

To continue with the Chow test we need to calculate the F statistic as follows:

$$F = \frac{\frac{R_{UR}^2 - R_R^2}{m}}{\frac{1 - R_{UR}^2}{N - K}} \quad (2.13)$$

Where R_{UR}^2 refers to the unrestricted model and R_R^2 to the pooled or the restricted model. N and K are the numbers of observations and coefficients of the unrestricted model. Finally, m is the number of restrictions. The computed F statistic is 5.143 which is larger than the critical 5 % F statistic at 2 and 36 degrees of freedom. Therefore we reject the null hypothesis and we conclude that pooling both data sets for 1999/2000 and

2004/2005 is not advisable. Similarly, we can test the hypothesis that rural Engle curves are the same for both data sets. That is the estimated coefficients of α_i and β_i do not change significantly between the two data sets. The pooled equation is estimated as follows:

$$W^R = 31.49 - 3.27 \text{ Ln } X^R \quad (2.14)$$

(6.790) (-6.21)

$$R^2 = 0.54 \quad N = 34$$

While the unrestricted demand equation is estimated as:

$$W^R = 8.61 - 0.78 \text{ Ln } X^R + 43.67 D - 4.98 D \text{ Ln } X^R \quad (2.15)$$

(1.66) (-1.39) (6.16) (-6.15)

$$R^2 = 0.80 \quad N = 34$$

Where:

D= 1 for 1999/2000 observations, D=0 for 2004/2005 observations.

The computed F statistic is 19.5 which is much larger than the 5 % critical F value. Therefore we reject the null hypothesis and do not pool the two sub-samples.

Finally we might be interested in testing the hypothesis that the Engle curves for urban households and for rural households do not vary significantly for each data set. To test the validity of this hypothesis for 1999/2000 we estimated the pooled equation as:

$$W = 24.69 - 2.42 \text{ Ln } X \quad (2.16)$$

(6.61) (-5.82)

$$R^2 = 0.49 \quad N = 36$$

And the unrestricted equation as:

$$W = 52.28 - 5.76 \text{ Ln } X - 39.03D + 4.57 D \text{ Ln } X \quad (2.17)$$

(10.76) (-9.88) (-6.56) (6.66)

$$R^2 = 0.79 \quad N = 36$$

Where:

D= 1 for Urban observations, D= 0 for rural observations.

The calculated F statistic is 22.8. The 5 % critical F value is much smaller than the computed F value and we therefore reject the null hypothesis. That is pooling is not statistically justifiable.

To test the validity of a similar hypothesis for 2004/2005 we estimated the pooled equation as:

$$W = 9.04 - 0.81 \text{ Ln } X \quad (2.18)$$

(23.32) (-19.56)

$$R^2 = 0.91 \quad N = 38$$

And the unrestricted model as:

$$W = 8.61 - 0.78 \text{ Ln } X + 1.11D - 0.077 D \text{ Ln } X \quad (2.19)$$

(21.75) (-18.28) (2.22) (-1.43)

$$R^2 = 0.96 \quad N = 38$$

Where:

D= 1 for Urban observations, D= 0 for rural observations

The computed F value is 21.25 while the 5 % critical F value at 2 and 34 degrees of freedom is 2.92. Therefore the demand equations for urban households and for rural households are statistically different from one another. Therefore pooling urban and rural sub-samples is not recommended.

2.5 Results of the Demand Equations for Bread and Cereals Group:

As mentioned above, the 2008/09 HIECS survey has information on household expenditure on the aggregate group of bread and cereals. When we use model (2.4) to estimate the demand equations for urban and rural households we get the following results:

$$W^U = 26.86 - 2.15 \ln X^U \quad (2.20)$$

(10.72) (-8.17)
R²=0.78 N= 20

$$W^R = 22.73 - 1.46 \ln X^R \quad (2.21)$$

(9.13) (-5.55)
R²= 0.63 N= 20

Where W^U, and W^R represent the budget shares of bread and cereals per urban and rural household respectively. Ln X is the natural logarithm of per household total consumption expenditure. Total consumption expenditure is a proxy for the household income. The numbers between parentheses are the t-ratios of the estimated intercept and slope coefficients.

All the estimated coefficients are statistically significant. The slope coefficients are negative for urban as well as for rural households indicating that bread and cereals are necessities in Egypt.

The calculations of income elasticities for different income brackets are presented in table (2.6) below.

Table (2.6): Budget Shares and Income Elasticities of Bread and Cereals Group (2008/09)

Income Bracket	Urban Households		Rural Households	
	Budget Share	Income elasticity	Budget Share	Income elasticity
Low-income Households	8.75	0.75	9.96	0.85
Middle-income Households	6.53	0.67	9.59	0.84
High-income Households	3.94	0.45	7.20	0.79

Demand income elasticities are all positive for all income groups. This is not surprising since bread and cereals is the main food item for most Egyptian families. Within the group of bread and cereals one can substitute bread for rice or macaroni for bread but overall consumption of the group is essential for all Egyptians. This pattern is especially clear in rural Egypt where the differences between elasticity estimates are small. In urban areas the demand income elasticity varies from 0.45 for high-income families to 0.75 for low-income families.

A sizable portion of the family total budget is devoted to bread and cereals. Low-income family devotes about 8.75 percent of its total budget to bread and cereals in urban areas and about 9.96 percent in rural areas. In contrast, bread and cereals absorb about 7.2 percent of the total budget of high-income family in rural areas and about 3.94 percent in urban areas.

According to the results of testing hypotheses we conclude that equations (2.9) and (2.10) are our preferred equations and therefore they could be utilized for further analysis. According to the estimates of income elasticities for 2004/05 the richest third of the population consider baladi

subsidized bread as inferior good. Therefore this segment of the population should be excluded from any program for food subsidies in the future. Furthermore, we could exclude the upper bracket of the middle-income households from subsidy programs as well. Therefore, future programs of baladi bread subsidies should be limited to the poorest 40 percent of the population.

The poorest 40 percent of the population should be the target group of future programs. Obviously targeting this group only would lead to savings in the government budget and to less waste and leakages in the system. At present about 80 percent of households is buying subsidized baladi bread. Therefore the proposed targeting would save about half of the current cost of the baladi bread subsidies. It is estimated that the total cost of the baladi bread subsidies was about LE 12 billion in 2008/09.

3 Targeting and Policy Option

3.1 The Cost of Food Subsidies:

According to the World Bank, 2010, baladi bread is the most important subsidized food commodity in Egypt. The share of subsidies on baladi bread and flour in total cost of the food subsidy system has dropped from 75 percent in 2004/05 to 68 percent in 2008/09. Subsidies on cooking oil and sugar are the next most important. Between 2004-05 and 2008-09 baladi bread and wheat flour subsidies increased from 6.3 billion Egyptian pounds to 13.3 billion Egyptian pounds. Subsidies on cooking oil and sugar have increased substantially between 2004/05 and 2008/09. However, subsidies on tea dropped significantly between the two periods. Rice subsidies increased modestly between the two periods see table (3.1).

It is interesting to note that prices of subsidized baladi bread are almost fixed for decades. The price of one loaf of subsidized bread was half a piaster during the whole period from 1952 to 1975. Then the price increased to 1 piaster per loaf during the period 1980 to 1983. Then the price was doubled to reach 2 piasters during the period 1984 to 1987. Finally, the price was raised to 5 piasters in 1988 and the price of baladi bread has been fixed at 5 piasters until now. However, the actual cost of producing one loaf of baladi bread was estimated at 25 piasters in 2008/2009.

Table (3.1): Value of Food Subsidies by commodity

Food Commodity	Subsidies (million L.E.)		
	2004/05	2008/09	% Change
Baladi bread & flour	6,328	13,338	110.7
Cooking oil	987	3539	258.5
Sugar	633	2147	239.2
Rice	422	561	32.9
Tea	23	6	-73.9
Total	8393	19591	133.4

Source: Calculated from World Bank, 2010

Wheat imports and the possibility of self sufficiency is an important issue for political debates in Egypt. Most attention goes to the potential for increasing production via increased acreage and improved crop yields. But it is equally important to focus more attention on the possibility for reducing

waste and better targeting of bread subsidies. The subsidized baladi bread absorbs 9 million tons of Egypt's total wheat consumption which amounts to 14 million tons (Al-Ahram newspaper). Per capita annual consumption of wheat is 175 kg which is one of the highest rates worldwide. Historically, per capita consumption during the 1960s was about 117 kg. This sharp increase in consumption is explained by the diversion of subsidized bread to animal feed and by the large waste due to bad processing of the baladi bread. That is why Egypt is the largest wheat importer in the world.

3.2 Leakages in the Food Subsidies:

The fact that baladi bread is heavily subsidized is very likely to create strong incentives for diverting subsidized bread to other unintended usages. Types of leakages could include: 1- selling the subsidized bread to livestock farms because it is cheaper than animal feed, 2- selling the bread to people who are not willing to wait in line for long time, 3- diverting the flour from the baladi bread bakeries to commercial bakeries, 4- waste and losses throughout the distribution chain due to low prices and low quality of the baladi bread. Sometimes, the family will have more than one family member standing in the line, one to buy bread for the family's needs and the other to sell it at a higher price on the black market. Recent field studies report that 67 percent of urban consumers and 63 percent of rural consumers are not satisfied with the quality of baladi subsidized bread (Korayem, 2010).

Table (3.2) indicates that 41 percent of the total supply of baladi bread was leaked to unintended usages at the national level in 2004/05. It seems that leakages are less for poverty stricken regions like Upper Egypt compared with metropolitan areas like Cairo and Alexandria. Of course there are stronger incentives for leaking bread and flour to pastry shops and to commercial bakeries that produce better quality bread in metropolitan governorates.

Table (3.2): Estimates of Baladi Bread leakages (% of total supply)

Region	2004/05	2008/09
Metropolitan	56	43
Lower Egypt	44	27
Upper Egypt	27	27
National level	41	31

Source: World Bank, 2010

Table (3.2) reveals that leakages at the national level have dropped to 31 percent only in 2008/09. This result is puzzling since the period of 2008/09 has witnessed large increases in food prices due to the world food crisis as mentioned before. Therefore the incentives for leakages would have been much stronger because of the larger differences between the free market prices and the subsidized prices. At all accounts, the leakages are rather difficult to estimate with a good degree of accuracy. It is therefore reasonable to assume that the leakages range between 30 to 40 percent of the total supply of subsidized bread.

The above discussion demonstrates that the baladi bread subsidy system is characterized by large leakages and therefore is not effective in

reaching the intended audience. The financial burden of the subsidy system could therefore be significantly reduced. At the same time the system could be reformed to serve the poor in a better way. The following sections explore some of the targeting possibilities.

3.3 Geographic Targeting:

It is interesting to examine the possible association between the allocation of baladi bread subsidies on one hand and poverty incidence and population on the other hand. Table (7) in the appendix shows the governorates' shares of baladi bread subsidies and their contributions to poverty and population shares in 2008/09. Based on this table we estimated the following regression equation:

$$BS_g = - 0.155 - 0.046 PC_g + 1.088 PS_g \quad (3.1)$$

(-0.422) (-0.633) (11.124)

$R^2 = 0.88$ $N = 27$

Where BS_g is the governorate's share of baladi bread subsidies, PC_g is the governorate's contribution to poverty and PS_g is the governorate's share of population.

Equation (3.1) indicates that the governorate's contribution to overall poverty has a negative but statistically insignificant effect on the governorate's share of subsidized baladi bread. However, the population share of the governorate has a direct and statistically significant impact on the governorate's share of subsidized baladi bread. Of course the main rationale of subsidies is to help the poor segments of population overcome poverty. Therefore, subsidies should be allocated to governorates according to their contribution to poor population. Apparently, this is not the case with the current food subsidy system.

The following suggestions may help improve the targeting of baladi bread to the target groups and reduce the leakages to the non-needy. First, moving the location of the baladi bread distribution outlets to narrow streets of densely populated areas, where the majority of the target groups live and where the places are difficult to access by cars. The low-income Egyptians who are living in low rent control housing in good residential areas will go to the baladi bread outlets in the densely populated areas as long as they can't afford to pay a high price for the non-subsidized bread (Korayem, 2010).

Presently, many baladi bread distribution outlets are located in well-to-do residential areas like Maadi, Dokki and Garden city. For example, table (3.3) shows that the wealthy districts of Maadi, Heliopolis and Nasr City had 87 baladi bakeries that produced about 444 million loaves of subsidized baladi bread in 2008. On the other hand the less fortunate districts of Rod El-Farag, Bulac and Ein Shams had 173 baladi bakeries that produced 1298 million loaves of baladi bread in 2008.

Obviously the first three districts are more populated with poor people than the last three districts and they should receive more subsidies. But there is no rationale why Maadi or Heliopolis should receive subsidies. It would be sensible to remove baladi bread bakeries from wealthy districts all over the country and limit baladi bread bakeries to low-income regions.

Table (3.3): Baladi Bread Production and Baladi Bread Bakeries; 2008

District	Number of Baladi Bakeries	Annual production Million loaves
Rod El-Farag	45	338
Bulac	31	222
Ein Shams	97	648
Maadi	28	174
Heliopolis	17	106
Nasr City	42	164

Source: CAPMAS, Bread Study, 2010.

It can be said that baladi bread is self-targeting in the sense that the long waiting in line for baladi bread hinders those who are relatively well-off from buying it.

3.4 Cash Subsidies:

Some policy makers are advocating cash subsidies instead of in-kind subsidies. Under the cash subsidy system people who are eligible for support would receive monthly cash transfers equivalent to the difference between the actual market cost and the current cost of purchases of baladi subsidized bread. For example, if the household consists of 5 persons and daily per capita consumption is 3 loaves of baladi bread then the current cost of monthly purchases of subsidized bread is LE 22.5. The current price of one loaf of baladi bread in the free market is 25 piasters. In fact, the price of the non-subsidized loaf of bread ranges between 25-50 piasters, depending on the size of the loaf and the selling location. We assume that the loaf of bread that is sold for 25 piasters is the closest one to the subsidized baladi bread. Therefore, the family would be entitled for a monthly cash subsidy equal to $0.2 \times 3 \times 5 \times 30 = \text{LE } 90$.

At the present time about 80 percent of Egyptian people consume subsidized baladi bread. If we adopt the figures that are mentioned in the previous paragraph and limit cash bread subsidies to the poorest 40 percent of Egyptian population then the cost of cash subsidy would be LE 576 million a month. The annual cost of cash bread subsidy would be LE 6,912 million. The proponents of cash subsidies claim that a great deal of leakages and waste would be eliminated. Competition would prevail in the bread markets and quality would improve. Black market transactions would be eliminated. Moreover, the administrative cost would be cutback significantly. On the other hand people who object to the cash subsidies build their argument on the difficulties involved in identifying the poor and reaching them. Similarly they fear that the government would not keep pace with changes in the free market prices of bread. Changes in cash subsidy should go hand in hand with changes in the free market prices of baladi bread.

A recent study conducted a survey for a sample of baladi bread consumers and found that 95 percent of baladi bread consumers choose the current in kind subsidy system of baladi bread as compared to cash subsidy (Korayem, 2010). The field study was conducted in 7 governorates during the period October-November 2009. The governorates include Menya, Assuit and Sohag from Upper Egypt, Sharkeya and Kafr El-Sheikh from Lower

Egypt, Marsa Matrouh from frontier governorates and Cairo for metropolitan governorates. In total, 1365 households were interviewed.

The importance of baladi bread stems from the fact that baladi bread is stomach filler and is the most basic food item that poor people want to have. Politically, bread subsidy is the safety valve against social unrest which can be caused by people's starvation and hunger (Korayem). Policy makers will always have the food riots of 1977 in the back of their heads. When the government tried to raise the prices of some basic food items including bread, violent riots broke out in the streets of major cities all over the country on 17 and 18 January 1977. President Sadat imposed the state of curfew and ordered the army to quiet down the riots. At the same time he canceled the decrees that called for price increases (Adams, 2000).

The cash subsidy system could be tried out on a pilot basis in one or two governorates or cities. The experiment may go on for 2-3 years to evaluate possible responses to price changes. For example, a small city like Port Said or Suez could be chosen for the experiment. Then the experiment should be evaluated in order to reach an assessment of possible extension to other governorates.

3.5 Reduced Subsidies:

It is possible that some segments of the population are willing to pay higher price for baladi bread in order to avoid waiting in long queues and in order to get better quality bread. The better quality bread will still be partially subsidized in order to absorb larger segments of the population. An experiment could start with, say, 15 or 20 piasters per loaf.

Mixing corn flour with wheat flour is another option which should be considered for several reasons; it would decrease the baladi bread subsidy since maize is less expensive than wheat and it will reduce the leakage of baladi bread subsidized flour to bakeries (Korayem, 2010). Also, it raises the nutritional content of the baladi bread to consumers. Wheat flour is mixed with white corn flour and wheat is extracted at 97%. It is clear that this is the best extraction level to increase the nutritional value of baladi bread (Halim, 2004).

The mixing of corn and wheat flour takes place either in the bakeries or in the mills. The flour is mixed with the proportion of 80% wheat flour and 20% corn flour. Unfortunately the experiment did not continue (Halim, 2004).

3.6 Food Stamps:

Another possibility is to utilize the food stamps method instead of the current system of in-kind subsidies. The poor families would be screened and eventually approved for food stamps entitlements.

The food stamps method is better than the cash subsidies system in that families would be constrained to buy bread only. However under cash subsidies there would be no control over the family purchases. In any case the family could use the money to buy non-food items. In theory, however, food stamps also could still be diverted to other goods and profitable deals could be struck between beneficiaries and grocery stores. Of course the administrative costs of food stamps are much less than that of the current in-kind subsidy system.

3.7 Future Directions:

In the past, the relationship between the Ministry and the bakeries and mills was punishable by jail and the closing of the bakery.

The financial incentives of the bakeries and mills will be revised to become more attractive. But at the same time the price of the subsidized loaf of bread will not increase in any case.

There is a real problem with leakages. Some of the wheat to be delivered to the mills is leaked out. Also there is leakage along the way from the mills to the bakeries. Finally there are leakages from the bakeries. The new direction is to allow mills and bakeries to use free market prices for wheat and flour. Then the government would buy the bread from the bakeries and sell the bread directly to the consumers at subsidized prices.

The Ministry will focus on a plan to merge small bakeries into large bakeries in order to produce good quality bread. After implementing the proposed reforms, there would be no reason to switch from the in-kind system to cash subsidies (Al Shorouk newspaper).

The Ministry plan to liberalize the trade of wheat grain and wheat flour all the way from farmers to mills to bakeries is a step in the right direction. However, the baladi bread itself will still be available for trade at subsidized prices. Therefore, it is expected that leakages and diversion of baladi bread to other unintended uses will continue, maybe even at a faster rate after the Ministry plan is implemented.

4. Conclusions and Recommendations

4.1 Conclusions:

The subject of this study is the baladi bread subsidy system and how it could be reformed in order to reduce leakages and to improve targeting to the needy people. The price of subsidized baladi bread has been fixed in the last quarter century at 5 piasters per loaf while the actual cost is about 25 piasters per loaf. The study relied on secondary data from previous studies and on the last three CAPMAS surveys. They are known as Household Income, Expenditure and Consumption Surveys (HIECS) and were conducted for the periods 1999/2000, 2004/2005, and 2008/2009.

The first chapter was devoted to a literature review while the second chapter was devoted to the economic analysis of the demand for baladi bread. In the third chapter, we studied different targeting proposals and policy options in order to reduce the leakage to unintended consumers.

The study reveals that the demand income elasticities for low income and medium income families are less than one indicating that baladi bread is a necessity for those families in rural as well as in urban areas. According to the estimates of income elasticities for 2004/2005, the richest third of the population considers that subsidized baladi bread is an inferior good. Consequently, this segment of the population should be excluded from any program for bread subsidies in the future. Additionally, the upper bracket of the middle income households should be excluded from subsidy programs.

Several hypotheses were subjected to formal statistical testing to see the possibility of pooling rural and urban subsamples on one hand and the possibility of pooling different time periods on the other hand. All tests

indicate that pooling was not a viable option from the econometric point of view.

The poorest 40 percent of the population should be the target group of future programs. Targeting the poorest 40 percent would lead to savings in the government budget and to less waste and leakages in the system. The suggested targeting would save around half of the current cost of the baladi bread subsidies.

The study explored different targeting possibilities such as geographic targeting, cash subsidies, food stamps, and introducing another type of baladi bread of better quality and of higher price. Some consumers might be interested in this new type of subsidized bread in order to avoid waiting in line and to enjoy better quality bread. One of the suggestions for better targeting is moving the location of the baladi bread distribution outlets to narrow streets of low income neighborhoods. Maadi, Heliopolis and Nasr City should not receive subsidies. It makes sense to remove baladi bakeries from wealthy districts over the country and to add more bakeries to densely populated areas such as Rod El Farag, Bulac, and Ein Shams.

Another suggestion is to mix maize flour with wheat flour. Maize is less expensive than wheat. This will reduce the leakage of baladi bread flour to bakeries.

The study found that the governorate's contribution to overall poverty has a negative but statistically insignificant effect on the governorate's share of subsidized baladi bread. The main aim of subsidies is to help the poor segments of the population to overcome poverty. Subsidies should be allocated to governorates according to their contribution to poor population.

4.2 Recommendations:

- 1- The government could attempt to better target the subsidized baladi bread by concentrating more on the low income neighborhoods. It is possible that no permits should be allowed to establish new baladi bread bakeries in wealthy neighborhoods.
- 2- The experiment of mixing maize flour with wheat flour should be revived again because maize is less expensive than wheat and it would reduce the leakage.
- 3- The government should consider the possibility of introducing a new type of baladi bread which is of higher quality and higher price, for example 15 to 20 piasters per loaf. This might help lessen the pressure on the traditional subsidized baladi bread by catering to the middle income consumers.
- 4- A pilot experiment with cash subsidies could be implemented in a couple of small cities such as Port Said and Suez in order to evaluate the possibility of adopting cash subsidies on a wider scale.

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APPENDIX

Table (1)-Urban Household Expenditure on Baladi Bread and Total Consumption Expenditure (1999/2000)

Expenditure on Baladi Bread	Total Consumption Expenditure	Budget Share of Baladi Bread
67.25	865.75	7.767831
67.88018	1641.387	4.135538
80.54276	2564.082	3.141193
116.8732	3547.988	3.294069
130.0236	4536.934	2.865891
161.0645	5760.054	2.796233
163.0692	6506.214	2.506362
177.749	7485.277	2.374648
191.602	8970.294	2.135961
208.9463	10960.77	1.90631
216.7915	12927.88	1.67693
227.4511	14931.93	1.523253
221.9723	16958.78	1.308893
219.584	18910.45	1.161178
227.9278	23930.15	0.952471
269.3295	34422.8	0.782416
279.9123	44475.05	0.629369
327.4983	58169.9	0.563003
294.6	80817.51	0.364525
266.6207	142032.1	0.187719

Table (2)-Rural Household Expenditure on Baladi Bread and Total Consumption Expenditure (1999/2000)

Expenditure on Baladi Bread	Total Consumption Expenditure	Budget Share of Baladi Bread
71.43599	267.23067	26.73196
76.13047	1109.5525	6.861367
86.16018	2347.3688	3.6705
94.17784	3335.1325	2.823811
108.4408	3962.8402	2.736441
104.3326	4457.5489	2.340582
117.7	4847.2476	2.428182
140.2062	4981.9976	2.814257
160.1265	4827.1853	3.317182
144.9075	4870.8602	2.974988
181.7257	3970.0354	4.577432
166.922	5367.4397	3.1099
191.0144	7255.3828	2.632726
168.75	10604.361	1.591326
159	6151.875	2.584578
212	14304.25	1.482077

Source: CAPMAS, HIECS, 1999/2000.

Table (3)-Urban Household Expenditure on Baladi Bread and Total Food and Consumption Expenditure (2004/2005)

Expenditure on Baladi Bread	Expenditure on Food and Beverages	Total Consumption Expenditure	Budget Share of Baladi Bread
49.3	1082.4	1511.7	3.261229
68.2	1457.9	2542.5	2.682399
100.9	1935.7	3509.3	2.875217
112.1	2362	4471.3	2.507101
134	2827.6	5460.8	2.453853
150.7	3209.6	6440.5	2.33988
168.4	3663.3	7412.6	2.271807
176.5	4122.3	8401.2	2.10089
178.8	4481.3	9362.9	1.909665
191.6	4957.2	10583	1.810451
196.7	5522.5	12028	1.635351
196.4	6111.7	13694	1.434205
203.8	6800.2	15654	1.301904
197.4	7424.1	17969	1.098559
189	8359.3	21575	0.876014
176	9582.1	26541	0.663125
116.2	11017.3	36236	0.320676
60.5	13763	57648	0.104947
84.2	17010.7	80674	0.104371
36.8	21765.4	114366	0.032177

Source: Korayem, 2010.

Table (4)-Rural Household Expenditure on Baladi Bread and Total Food and Consumption Expenditure (2004/2005)

Expenditure on Baladi Bread	Expenditure on Food & Beverage	Total Consumption Expenditure	Budget share of Baladi Bread
46.4	1059.8	1562.5	2.9696
62.8	1451.9	2530.5	2.481723
72.7	1998.7	3504.8	2.074298
88.6	2457.4	4478.5	1.978341
104.3	2937.1	5449.5	1.913937
112.9	3411.8	6414.8	1.759993
118.6	3907.9	7391.3	1.604589
121.3	4396.3	8356.9	1.451495
125.6	4816.3	9333.9	1.345633
134.8	5397.6	10519	1.281491
133.7	6086.3	11964	1.117519
145.9	6778	13597	1.073031
151.4	7508.2	15498	0.9769
169.6	8180.1	17622	0.962433
178.2	9102.4	20995	0.848774
170.6	10339.6	24865	0.686105
183.9	10324.4	29863	0.615812
77.4	16079.5	48270	0.160348

Source: Korayem, 2010.

Table (5): Urban Household Expenditure on Bread and Cereals according to Household's total consumption Expenditure in 2008/09 (LE).

Expenditure on Bread and Cereals	Total consumption expenditure	Bread & Cereals Budget Share
239.1	1516.6	15.76553
233.5	2525.5	9.245694
297.8	3483.6	8.548628
307.4	4476.4	6.867125
375.8	5477.7	6.860544
462.6	6457.5	7.163763
505.9	7426.8	6.811817
584.9	8410.2	6.95465
630.9	9383	6.723862
710.9	10607.1	6.702115
800.5	12078.8	6.627314
888.3	13809.7	6.432435
989.2	15743.4	6.283268
1096.5	18159.5	6.038162
1237.5	21860.8	5.660818
1416.8	26702.2	5.30593
1598.2	36025.3	4.436327
1939.6	57562.9	3.369531
2397.3	82731.3	2.897694
2716	135907.9	1.998412

Source: CAPMAS, HIECS, 2008/09

Table (6): Rural Household Expenditure on Bread and Cereals according to Household's total consumption Expenditure in 2008/09 (LE).

Expenditure on Bread & Cereals	Total Consumption Expenditure	Bread & Cereals Budget Share
194.3	1501.9	12.93695
292.6	2544.5	11.49931
312.9	3488.6	8.969214
391.1	4459.3	8.770435
485.4	5477.7	8.861383
602.8	6446.1	9.351391
694.6	7417.4	9.364467
783.5	8393.7	9.334382
908.5	9350.9	9.715642
1012.3	10585.2	9.563353
1168.9	12035.3	9.712263
1349.5	13733.9	9.826051
1491.4	15666.5	9.519676
1713	18001.8	9.515715
1950.9	21410.3	9.111969
2259.7	25850.9	8.741282
2746.9	32917.5	8.344801
3643.1	45886.7	7.939338
4955.9	70244.1	7.055254
2558.7	126544.6	2.021975

Source: CAPMAS, HIECS, 2008/09

Table (7): Relative Shares of Governorates in Subsidies, Poverty and Population; 2008/09

Governorate	Allocation of bread subsidies %	Contribution to poverty %	population share %
Cairo	14.5	3.6	10.2
Alexandria	6.2	1.6	5.4
Port Said	0.8	0.2	0.8
Suez	0.8	0.1	0.6
Metropolitan	22.3	5.4	17
Damietta	1.4	0.1	1.4
Dakahleya	4.9	2.8	6.6
Sharkeya	6.3	6.2	7
Kalyoubeya	6.2	3.3	6.2
Kafr-El-Sheikh	2.6	2.3	4.4
Gharbeya	4.5	2	5.6
Menofeya	3.6	3.7	4.5
El-Behera	5	6.9	6.4
Ismailia	1.5	1.2	1.3
Lower Egypt	36.1	28.5	43.3
Giza	9.4	9.1	8.5
Beni Suef	2.8	6.2	3.2
Fayoum	3.5	5.2	3.9
Menya	5.5	9.1	6.3
Assyout	5.1	13.6	4.8
Sohag	5.5	11.1	5
Kena	4.2	7.6	4.2
Assouan	2.3	3	1.6
Luxor	0.9	0.5	0.5
Upper Egypt	39.2	65.3	38.1
Red Sea	0.4	0.1	0.3
Wadi-El-Gedid	0.3	0.1	0.3
Matrouh	0.6	0.1	0.4
North Sinai	0.8	0.6	0.4
South Sinai	0.2	0	0.1
Frontier Gov.	2.4	0.8	1.5

Source: World Bank, 2010

Table (8): Quotas of Flour for the Subsidized Baladi Bread and Population per Governorate; 2008/09

Governorate	Quota 1000 sacks	Population "000"
Cairo	10769	8730
Alex.	4620	4239
Port Said	581	587
Suez	568	530
Domyat	1076	1140
Dakahley.	3662	5145
Sharkeya	4704	5545
galubey.	4635	4393
K Sheikh.	1950	2709
Gharbeya	3346	4137
Menoufeya	2674	3382
Beheyra	3696	4904
Ismailiyah	1109	991
Giza	7016	5893
Beni Suef	2102	2376
Fayoum	2588	2612
Menya	4123	4319
Assuit	3758	3569
Sohag	4112	3878
Quena	3103	3107
Aswan	1689	1222
Luxor	657	470
Red sea	324	279
New Valley	223	193
Marsa Mat.	469	335
North Sinai	585	358
South Sinai	159	152

Source: CAPMAS, Bread Study,2010.

**دعم الخبز في مصر
أحمد عبد الرزاق أحمد سلامة
كلية العلوم الادارية و الاقتصاد و العلوم السياسية – الجامعة البريطانية**

تهدف هذه الدراسة الي تقدير حجم الدعم للخبز البلدي حيث تواجه سياسات الدعم نقد لاذع بسبب مساهمه هذه السياسات في تضخيم عجز الموازنه العامه في الدول الناميه حيث يتسرب جزء كبير من الدعم الي غير مستحقيه وقد درسنا في هذه الورقه البحثيه نصيب كل فئه من اصحاب الدخول المرتفعه والمتوسطه ومحدودي الدخل حيث تبين من الدراسه ان العيش البلدي يعتبر سلعه رديئه لأصحاب الدخول المرتفعه وقد اسفرت الدراسه الميدانيه عن ان اصحاب الدخول المحوده يفضلوا الدعم العيني في صورته الرغيف المدعم عن الدعم النقدي بسبب عدم ثقتهم في الحكومه ومدى التزامها بتنشيط اسعار الخبز . وقد قمنا بتحليل النتائج والاحصاءات التي تم التوصل اليها بالاستعانه بالوسائل المتعارف عليها في الأقتصاد القياسي لتحليل الاثر الزمني والجغرافي علي انماط الاستهلاك لفئات الدخل المختلفه خلال فتره الدراسه

قام بتحكيم البحث

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