# Replacing Egypt's Gasoline Subsidy with a System of Child Benefits

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#### Abstract

Spending on social protection in Egypt is high (almost one third of government expenditure). However, the bulk of the social protection spending is on the system of subsidies, mainly for energy products. We examined removing only one item (gasoline subsidy) of the subsidized energy products that is captured by the rich and has a very marginal impact on poverty and re-injecting the saving into a universal child cash transfers. The main findings were: the proposed measure has the potential to lift around one fifth of poor Egyptians out of poverty with greater impact on children (reduction of 28.2 percent among children age 0-14). Moreover, the cost of the system is projected to even decline as a percentage of GDP over time, benefiting from a favorable demographic profile. This is true when the value of the benefit amount is maintained in real term as well as a percentage to per-capita GDP.

Key words Social Protection, fuel subsidy, costing, child grants, cash transfers, Egypt

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### 1. INTRODUCTION

Despite of a period of sustained economic growth experienced in Egypt during the decade proceeding the popular uprising of 2011, incidence of poverty increased over the same period, suggesting that the economic growth experienced was not pro-poor. Not surprising, achieving social justice was a central demand by the Egyptian revolution. Like in many countries, Egyptian children (in particular those living in large households) are overrepresented among the population living in poverty. The current social protection system in Egypt, mostly in the form of subsidies, has a very limited success in lifting these children out of poverty, which points out to the need for more effective fiscal and social policies that produce more equitable social outcome.

This study proposes the integration of a universal system of child benefits at the same time phasing out the regressive fuel subsidy. The study provides essential information that are key for decision makers to base their decision on solid evidence, including: i) elaboration on the fiscal space to finance the intervention (chapter 3); ii) cost of the proposed system (chapter 4); and iii) the expected impact in terms of poverty reduction that the country would expect if the policy is adopted (chapter 5).

This study comes at a critical time when there have been on-going debates about future policy directions of the Government, which have opened up space for discussion on the budgeting issues, and on possibility of reform of subsidies.

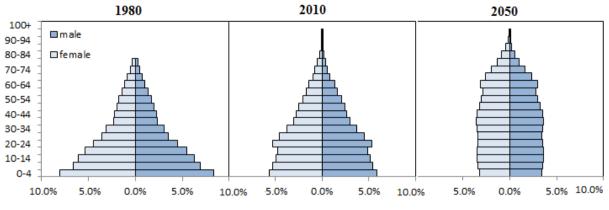
### 2. SOCIOECONOMIC BACKGROUND

### **2.1. Demographic Profile**

The most recent population census of 2006 estimated Egypt's population at 72.798 million. Approximately 98.2 percent of inhabitants live in the Nile valley and the Delta, which both constitute only 7.8 percent of the overall size of Egypt (CAPMAS, 2011). Over the past decade, Egypt's population grew at an average annual rate of 1.82 percent, which is similar to that of MENA region, but is significantly higher than that for Low Middle Income Countries (LMIC), estimated at 0.9 percent (UN, 2011c). The pattern of natural population growth (excluding migration) can be explained by two underlying factors: fertility rates and mortality rates. Since 1980, Total Fertility Rate (TFR) decreased by almost half, from 5.20 children per woman in early 1980 to 2.85 children per woman in 2005-2010 (UN, 2011c). The second factor, the mortality rate, has shown significant improvement over the same period. The infant mortality rate declined from a rate of 101.1infant deaths per 1,000 live births in early 1980s to 25.9 infant deaths per 1,000 live births in 2005-2010. The crude death rate was estimated at 5.2 deaths per 1,000 live in 2005-2010, more than half the rate of 11.2 deaths per 1000 in the early 1980s. Life expectancy at birth, therefore, increased steadily and reached 72.3 years in 2005–2010, compared to 57.6 years in 1980-1985(UN, 2011c).

As a result of declining fertility rates, improved mortality and increased life expectancy, the population structure has changed notably over the past few decades. The median age in Egypt increased from 18.5 in 1980 to 24.5 in 2010 (UN, 2011c).

Figure 1: Population Pyramid, 1980 - 2050



Source: Own calculation based data from on UN (2011a).

The broadening midsection of Egypt's population pyramid has two main consequences: First, the likelihood of a steady, possibly an increased, population growth, even when the fertility rate is declining. This phenomenon is known as the "demographic momentum," which occurs due to the fact that more people are in their productive years. This might explain the increase in the pace of the population growth in the first half of 2000s. Second: favorable demographic environment in which the working-age population has expanded at a higher rate than that of the general population as shown below, which is widely referred to as "demographic window of opportunity,".

#### 1.1. Labor Market and Macroeconomic Profile

While the expansion of the working-age population, as explained earlier, and subsequently the enlargement of the labor force, can present a favorable condition (reduced dependency ratios), it also constitutes a substantial challenge to the local economy to create adequate jobs to absorb the rapid entry into the labor market of new participants. Youth unemployed of age less than 25 accounted for 70 percent of the overall unemployed population in 2008 (CAPMAS, 2011). The overall unemployment rate averaged 9.8 percent between 2000 and 2010 (WB, 2011) and stood at 11.9 percent as of March 31, 2011 (IDSC, 2011). Another main characteristic of Egypt labor force is the low labor force participation rate among female, resulting in a predominantly male labor force in Egypt (3 out of 4 economically active are men).

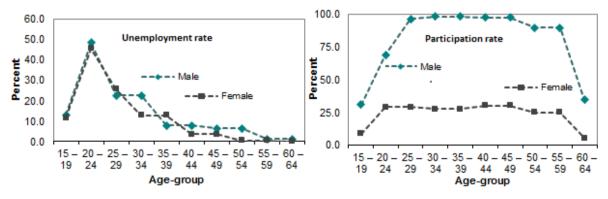


Figure 2: Unemployment Rates (left axis) and Participation Rates by Age Group, 2010

Source: based on data from CAPMAS (2011).

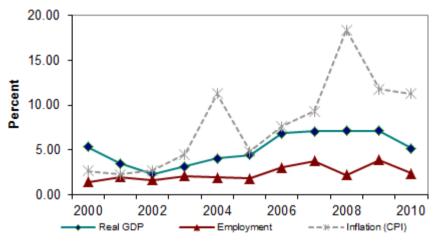
Over the past decade, Egypt's economy grew at an average annual rate of more than 5 percent in real term (WB, 2011), which is 3 percentage points above the population growth, resulting in a general improvement in real GDP per capita. Nevertheless, Egypt's economy has suffered from high inflation environment, structural deficit (further discussion in chapter 3), and widening gaps in income and consumption (see next section).

Economic Indicators	2000	2002	2004	2006	2008	2010
GDP, current prices, Million LC	340,100	378,900	485,300	617,700	895,600	1,206,700
GDPper capita, current LC	5,027	5,389	6,660	8,177	11,437	14,875
GDPper capita, current US\$	1,448	1,198	1,075	1,426	2,105	2,646
Official exchange rate, SL per US\$	3.47	4.50	6.20	5.73	5.43	5.62

Table 1: Main Economic Indicators, 2000-2010

Source: Own calculation based on data from WB (2011).

#### Figure 3: Growth Rates, 2000-2010



Source: Own calculation based on data from WB (2011).

### **1.2.** Poverty Profile

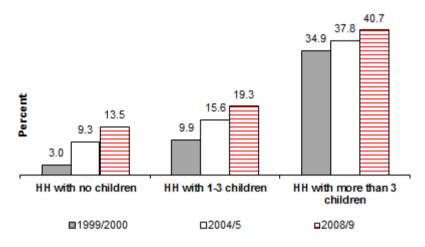
The difficulty of analysing poverty in Egypt over a long period of time arises from differences in the methods and surveys used to measure poverty. For the purpose of this study and in order to preserve comparability of results, we will mainly use throughout this section data and results from the UNICEF work on poverty titled "Child poverty and disparities in Egypt" and "Trends of child poverty and disparities in Egypt," both studies use the Household Expenditure, Income and Consumption Surveys (HEICS).

Despite of the strong economic growth over the past decade mentioned earlier, the poverty rate in Egypt increased from 16.7 percent in 1999/2000 to 21.6 percent in 2008/9 using the national poverty line; with significantly higher rate in rural areas than in urban areas (28.9 percent versus 11.0 percent) (UNICEF, 2010c). Poverty in Egypt is characterized by its sensitivity to the poverty line used; this is largely due to the fact that significant parts of the population are clustered around the poverty line. For instance, using the national upper (moderate) poverty line, the incidence of poverty almost doubled

and stands at 41.7 percent for 2008/9. This characteristic also presents a positive feature that poverty in Egypt is shallow (relative to the national poverty line). The poverty gap (the percentage deficit of per-capita expenditure from poverty line) was estimated at 4.1 percent in 2008/9(UNICEF, 2010c). At the average annual per-capita poverty line for Egypt as a whole, estimated at E£ 2,223 for 2008/9, an annual amount of E£ 1.569 billion (only 0.151 percent of GDP) is required to eradicate poverty (assuming perfect and costless targeting).

Poverty in Egypt has an age dimension. Children and youth are more likely to experience poverty than older age groups. Between 2004 -2009, the number of children living in poverty increased from 6.278 million in 2004/5 to 7.0 million 2008/9 (UNICEF, 2010c). Household with children are particularly at higher risk of falling into poverty. Moreover, the incidence of poverty increases as the number of children in the household increases.

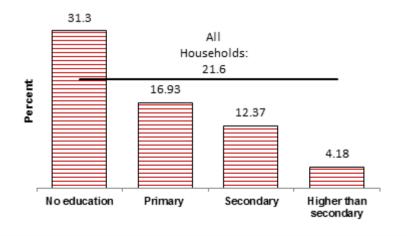
Figure 4: Poverty Rates among Households by Number of Children in the Household, 1999-2009



Source: Based on data from UNICEF (2010c).

Education of household heads is strongly inversely correlated with poverty for all types of households (with and without children). Heads of households who did not complete a primary education are almost three times more likely to be poor as compared with those who have at least secondary education (UNICEF, 2010a).

Figure 5: Poverty Rates among Households by Educational Level of Household Head, 2008/9



Source: Based on data from UNICEF (2010a).

While the above graph shows that children of illiterate heads of households are at significantly higher risk of experiencing poverty, children in poor households are also two times more likely not to complete a primary education than children in non-poor households(UNICEF, 2010a), which perpetuates poverty and impedes the upward intergenerational social mobility.

# 3. FISCAL ENVELOP AND FUEL SUBSIDY

This chapter provides an assessment of Egypt's fiscal envelope with specific focus on the system of subsidies.

### 3.1. National Budget

Table below summarizes Egypt's National Budget and the overall accumulated debt for the past three years expressed in current currency and as a percent of GDP.

		Million E£		Percent of GDP			
	2009/10	2010/11	2011/12	2009/10	2010/11	2011/12	
Total Revenue	267.949	297.518	356.310	22.21	21.67	22.69	
Tax	170,494	199,770	232,232	14.13	14.55	14.79	
grants	4,333	4,913	9,974	0.36	0.36	0.64	
Others	93,122	92,835	114,104	7.72	6.76	7.27	
Total Expenditure	<u>365.986</u>	<u>427.879</u>	<u>490.589</u>	<u>30.33</u>	<u>31.16</u>	31.25	
Current expenditure	317,636	387,328	443,428	26.32	28.21	28.24	
Salaries	85,369	95,818	117,497	7.07	6.98	7.48	
Goods and services	28,059	28,823	30,255	2.33	2.10	1.93	
Debt service	72,333	86,662	106,300	5.99	6.31	6.77	
Subsidies and social benefits	102,974	139,503	157,754	8.53	10.16	10.05	
others	28,901	36,522	31,622	2.40	2.66	2.01	
Capital expenditure	48,350	40,551	47,161	4.01	2.95	3.00	
Budget Deficit	<u>-98.037</u>	-130.361	-134.279	<u>-8.12</u>	-9.49	<u>-8.55</u>	
Overall Debt	<u>958.120</u>	<u>1.139.590</u>	1.273.270	<u>79.4</u>	<u>83.0</u>	81.1	
Local	808,489	978,949	1,108,420	67.0	71.3	70.6	
Foreign	149,631	160,641	164,850	12.4	11.7	10.5	

Table 2: National Budget in Million Egyptian Pound and as a Percent of GDP, 2009/10-2011/2<sup>1</sup>

Source: Based on data from Ministry of Finance (2011).

Overall revenue as a percentage of GDP in Egypt is in line with countries at the same economic level. However, the tax revenue ratio to GDP is lower than other Lower-middle-income countries.

<sup>&</sup>lt;sup>1</sup> The budget for fiscal year 2010/1 is actual, for fiscal year 2011/2 is expected, and for fiscal year 2011/2 is budgeted.

Note that there has been some reports of reassessment in the budget 2011/2.

2001/2	Total Revenue	Tax Revenue	Non-Tax Revenue
Lov-income countries	18.0	14.9	3.1
Lover-middle-income countries	22.0	16.0	6.1
Egypt (2009)	22.2	14.1	8.1
Upper-middle-income countries	25.6	21.0	4.6
High-income countries	32.8	27.5	5.3

Table 3: Budget Revenues (Tax and non-Tax) as a Percent of GDP for Different Regions

Source: Compiled from different national budgets and reported in UNICEF Learning Module on Social Budgeting (UNICEF, 2011). For Egypt: (Ministry of Finance, 2011).

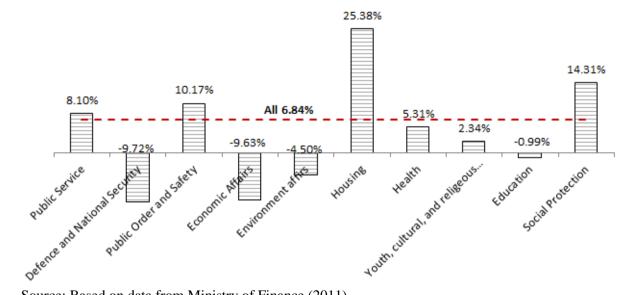
There are several reasons that might have contributed to the low tax/GDP ratio. Incomprehensive tax structure and low tax rates are among the main reasons. Other important reasons may include: poor tax administration and low enforcement of legislation. The distribution of power might have affected the government resource mobilization decisions and processes in Egypt, this included low tax rates on corporate profits, exemptions and loopholes; which permitted legal "tax avoidance," and inadequate adjustment of the tax structure to take account of structural changes in the economy. Just as the government expenditure has implication for equity, the low tax collection affects government expenditures that can redistribute wealth to the poor and ensure the socioeconomic rights of all citizens, including children (UNICEF, 2011).

Achieving social justice was a central demand by the protestors during the popular uprising in 2011. The first post-revolution national budget included some corrective tax measures. For instance, it added a new and higher tax bracket for the income tax code (individual and corporate) for incomes exceeding E£10 million, increased the excise tax on cigarette from 40 percent to 50 percent, and partially addressed the tax avoidance<sup>2</sup> (Ministry of Finance, 2011). These measures have contributed to the projected increase of the tax collection (see 2). Furthermore, the Ministry of Finance reported plans for the medium-term to introduce Value-Added Tax (VAT), amendment to the income tax code to enlarge the contributing base and limiting the tax-exempts, increase in excise tax on cigarettes, impose a property tax on buildings, and revisit customs exceptions (Ministry of Finance, 2011).

On the expenditure side, the post 2011 revolution government issued key measures to respond to the popular demands, for example: increasing the minimum wage for public employees, and increasing allocation to social sectors (public housing and subsidies). The national budget for fiscal year 2011/2 budgeted an increase of 6.84 percent in real term from 2010/2 national budget. Overall spending was budgeted at E£ 490.59 billion, which represented 31.2 percent of the projected GDP for the same period (Ministry of Finance, 2011). While the increase in the wage bill resulted from the minimum wage increase is one of the drivers for the projected increase in expenditure, sectorial allocation to public housing and to Social Protection (mostly energy and food subsidies) increased in real term by 25.83 percent and 14.31 percent for housing and Social Protection, respectively.

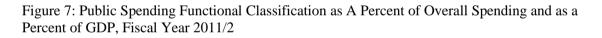
<sup>&</sup>lt;sup>2</sup> According to some estimates, tax avoidance amounts for E£100 billion in the current fiscal year (Al-Ahram Hebdo, October 26, 2011), which represents 7.41 percent of GDP for the same year.

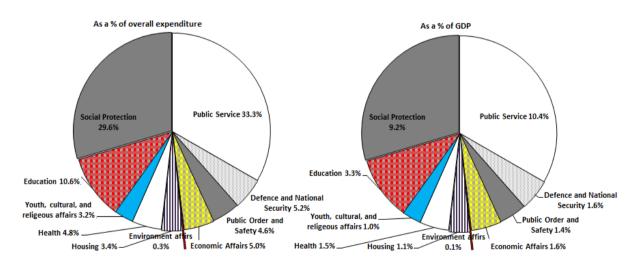
Figure 6: Real-Term Growth Rates in National Budget between Fiscal Year 2010/1 and 2011/2.



Source: Based on data from Ministry of Finance (2011).

To pay for the increase, deficit has been widening and stood at 8.55 percent of GDP in 2011/2 (Ministry of Finance, 2011); but also spending cuts have occurred on key social sectors. Allocation to education decreased in real-term by 1 percent. The increase in overall allocation to health is below the average increase in the general budget and does not take into account the very low government allocation to health, which stood at only 1.5 percent of GDP in 2011/2.





Source: Based on data from Ministry of Finance (2011).

In comparison with internationally recommended spending (see table 4), the current budget allocation is almost one-half and one-third of the recommended establishment for spending on education and health, respectively.

Sector	Agreement	Target	Egypt
Education	Education for All Initiative (2000)	20% G. Exp.	10.50%
Health	Abuja Declaration (2001)	15% G. Exp.	4.70%
Social Protection	Social Policy Framework for Africa (2008)	4.5% GDP	9.20%
Water and Sanitation	eThekwini Declaration (2008)	1.5% GDP	
	Sharm El-Sheik Commitment (2008)		
Source: Hagan-Zanker	• & McCord (2011) and Ministry of Finance (2	011)	

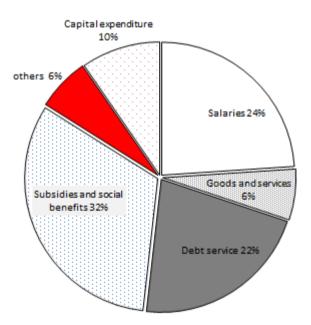
Table 4: International Recommended Spending on Key Social Sectors Vs. Egypt's Allocation in Fiscal Year 2011/2

Source: Hagan-Zanker & McCord (2011) and Ministry of Finance (2011)

### 3.2. Creating Fiscal Space and Spending in Subsidies

Table 4 also illustrates that spending on social protection is more than twice the recommended spending. This highlights a distorted spending pattern that if corrected might provide space to fund new initiatives as well as achieving an improvement in spending in other key social sectors, mainly health and education. An economic classification of the budget also highlights spending on Social Protection as a possibility to create fiscal space.

Figure 8: Public Spending as a Percent of Total Spending, Economic Classification, Fiscal Year 2011/2



Source: Based on data from Ministry of Finance (2011)

Debt services might be a possible area for improvement especially in line with the debt swap proposed by many donors. However, international debt represents less than 13 percent of the overall national debt. In addition, the debt service paid to local creditors represents an income source that is re-injected in the local economy. Among the local creditors is the national pension fund, almost 16 percent of the overall debt service for fiscal year 2011/2 is payable to the pension fund (Ministry of Finance, 2011). For these reasons, any attempt to reduce the share of the debt service is a gradual strategy that will take very long period to achieve. Salaries, capital expenditure, and good and services are already at low levels and are expected to increase in absolute values in order to achieve an improvement in the services provided by the government.

Spending in social protection is almost one third on the overall expenditure, re-stressing its potential role in freeing some fiscal space as well as correcting the distorted spending pattern discussed above. The bulk of the social protection spending is on the system of subsidies, which is projected at 8.47 percent of the GDP for 2011/2. Closer scrutiny of projected expenditures for the different subsidy schemes show that allocation to the energy-products subsidy alone counts for 6.09 percent of GDP in 2011/2 (Ministry of Finance, 2011), which costs more than the combined spending on health and education.

	Million E£			Pe	ercent of GE	)P
	2009/10	2010/11	2011/12	2009/10	2010/11	2011/12
<u>Subsidies</u>	<u>93.570</u>	<u>124.288</u>	<u>132.928</u>	7.75	<u>9.05</u>	<u>8.47</u>
Food	16,819	28,146	18,884	1.39	2.05	1.20
Energy products	66,524	82,104	95,535	5.51	5.98	6.09
Others	10,227	14,038	18,509	0.85	1.02	1.18

Table 5: Budget Allocation to Subsidies, 2009/10-2011/2<sup>3</sup>.

Source: Based on data from Ministry of Finance (2011)

Reforming the energy-products subsidy provides an excellent opportunity to make great inroads in creating fiscal space to invest in children in a more efficient and effective manner. For the purpose of illustrating what social programs can be implemented at the same cost if the energy-products subsidy is phased out completely, the study estimates the cost of the following three categories combined to be still less than the cost of the energy-products subsidy alone:

1. A set of universal social cash transfer benefits, including:

 Table 6: Estimated Costs of Some Cash Transfer Programs

Benefit	Elegibility	Benefit type	Benefit amount	Cost as % of GDP
Universal Pension	age 65+	Monthly	266.67 EP	1.04%
Universal Child Benefit	age 0-5	Monthly	66.67 EP	0.68%
Universal Disability Benefit	allages	Monthly	133.33 EP	0.48%
Orphan Benefit	age 0-15	Monthly	133.33 EP	0.11%
Education stipend	allages	at beginning of school	500 EP	0.37%
Pre-natal help	all pregnant women	one time	1000 EP	0.16%
	•	•	Total cost	2.84%

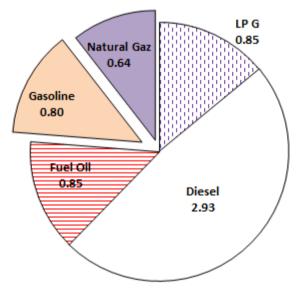
<sup>&</sup>lt;sup>3</sup> There has been some recent news report that the government has approved a plan to cut subsidy to energyintensive industries, final decision needs approval from the military. If implemented, this will save about E£5 billion, which is still a very small fraction of the overall subsidy directed to energy products. http://english.ahram.org.eg/news/29785.aspx

Source: Own calculation based on data from (UN, 2011), (IMF, 2011), (WB, 2011).

- 2. Allocation to health and education could be increased by another 50%, respectively.
- 3. The Government would still have a remaining 13.174 Billion L£ for other needs, which is twice the amount of all of its foreign grants (Saudi, US, and others) budgeted in fiscal year 2011/2 (Ministry of Finance, 2011).

Phasing out the petroleum-product subsidy is politically difficult. Furthermore, if it is removed swiftly, it may result in welfare loss, spike in inflation, and disadvantages to industries. Nevertheless, the study argues that a system of child benefits can be financed by eliminating only the subsidy to products that are consumed by the rich in a way that does not affect the poor and vulnerable segments of the population. The following graph decomposes the energy-products subsidy into its main items.

Figure 9: General Budget Allocation to the Different Energy-Products Subsidies as a Percent of GDP, 2011/2.



Source: Based on data from Ministry of Finance (2011)

Our estimate is that a system of child benefits (as discussed in next chapter) can be fully covered by the cost of the gasoline subsidy alone. The selection of gasoline subsidy to cover the proposed system is based on two important factors:

- 1- Gasoline subsidy is very regressive: according to a 2005 World Bank study; the richest 20 percent of the population captures 93 percent of the total gasoline subsidy. The effect of eliminating the gasoline subsidy will increase the incidence of poverty by only 0.02 percent. Natural Gaz subsidy is also highly regressive, if it is eliminated the incidence of poverty will increase by only 0.13 percent (WB, 2005).
- 2- Retail price of gasoline in Egypt is significantly lower than prices paid by consumers in neighbouring countries, countries at the same economic level, and other countries in the world. Keeping Egyptian isolated from price changes will result in costly long-term distortions in production and consumption incentives.

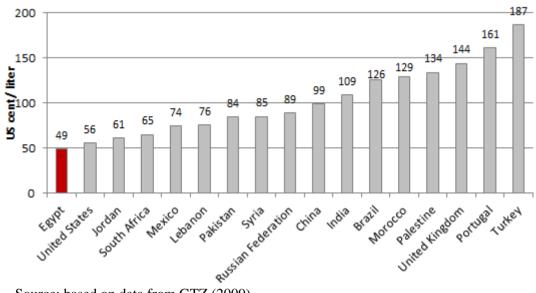


Figure 10: Retail Prices of Gasoline in Selected Countries as of November 2008, in US cents/liter

Source: based on data from GTZ (2009)

# 4. INTRODUCING AND COSTING A SYSTEM OF CHILD BENEFITS

As discussed in the previous chapter, lifting the gasoline subsidy can create a fiscal space of about 0.8 percent of GDP, with an impact of poverty increase of only 0.02 percent (WB, 2005). This chapter will introduce a system of universal child benefits that can be fully covered by an investment equivalent to the saving made from the elimination of the gasoline subsidy, with a a potential greater impact on poverty reduction (discussed in next chapter)

# 4.1. System Parameters

4.1.1. overview

The proposed system of child benefits consists of two main parts: First, cash transfer for pre-school children (less than 6 years-old). Second: cash transfer for school age children (6-14 years-old). This age range was selected to cover the period of greatest vulnerability for the survival and development of the child (0-5 years) as well as a period long enough to ensure the completion of primary school.

For the first year, the benefit amount is set at E£60 per child per month for each benefit<sup>4</sup>. However, the school-stipend benefit is payable only during the school year (9months), while the pre-school benefit is paid 12 months a year.

4.1.2. Conditionality and linkages

<sup>&</sup>lt;sup>4</sup> The indexation of benefit amount is discussed in chapter 4.

There is increasing evidence on the impact and outcomes of both conditional cash transfers<sup>5</sup> and unconditional transfers. Although there is evidence to suggest that both have positive outcomes, the particular role and attribution of these outcomes to conditionality remains an open debate.

The study proposes that the cash transfer directed to children in school age is to be conditional on attending school<sup>6</sup>. As for the pre-school children, health check-ups and linkages to other sought positive behaviour changes can be also investigated. The study is hoped to initiate a broader discussion with cross-sectorial experts to ultimately decide whether conditionality and linkages are desired, and if yes, what they are. A separate exercise is needed to make sure that whatever conditionalities imposed are costed and within the supply side constraints.

### 4.1.3. Targeting

While both benefits (pre-school benefit and school stipend) hypothetically cover all children, it is assumed that a form of targeting is implicitly built in:

- 1- Self-selection targeting: the low level benefit amount coupled with other administrative measures, such as excluding children form well-off households who attend private Arabic and foreign language schools, will ultimately result in less than 100% coverage.
- 2- Categorical targeting: as discussed earlier, poverty is positively correlated with the number of children in the household. Therefore, cash transfers that varied with the number of children in the household are pro-poor, even if non-poor households receive the same per-child benefit amount. To illustrate this point, assume that there are only two households: A and B. Household A is a low-income household with monthly income of E£ 600. Household B is better off with monthly income of E£ 3000. As in many poor households, household A has 4 children whereas household B has 2 children. Furthermore, for simplicity, assume that the proposed system is fully financed by an income tax (more realistic and reasonable financing mechanisms are discussed in chapter 5). The income tax that is needed to fund the system is 10% on income of all households. Assuming that the two households take up the child benefit and applying the study proposed categorical targeting, the following table compares between the two households:

	HH A	HH B
Monthly HH income before	E£ 600	E£ 3000
Number of Children	4	2
Total entitlements, proposed benefit	$4 \ge 60 = E \pounds 240$	$2 \ge 60 = E \pounds 120$
Tax	$10\% \text{ x } 600 = \text{E}\pounds60$	$10\% \text{ x } 3000 = \text{E}\pounds300$

 Table 7: Comparison between Two Hypothetical Households

<sup>&</sup>lt;sup>5</sup> conditional cash transfers are given to beneficiaries conditional on particular actions, such as sending children to school or attending regular health check-ups

<sup>&</sup>lt;sup>6</sup> This is not expected to significantly create supply-side problems as primary school enrolment in Egypt is already high. There is enough ground to think that the additional increase in demand due to the incentive will be within the current capacity of the government. But once conditionalities are agreed upon by wider audience, a separate exercise can look into this in more details.

Monthly Household income after	E£ 780	E£ 2820
Net gain	$780 - 600 = E \pounds 180$	2820 - 3000= - E£ 180

Note that impact can be even further strengthened if the financing mechanism is selected in a way that does not affect the poor households (see chapter 3).

4.1.4. Linkages to existing cash transfer programs

A wide selection of cash transfer programs exist in Egypt. These include the social solidarity pension, cash transfers for low income pregnant women ineligible for other forms of assistance until their child is 2 years old, and child pensions for children of divorced parents and orphans, the old age and disability pensions. There are specific financial provisions for low-income families (under 300 EGP) with mentally disabled children. There are also some transfers through the Ministry of Awqaf (Endowment).

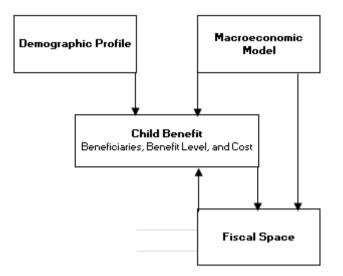
The proposed system is sought to complement the existing programs for stronger impact, particularly among vulnerable households. More specifically, the proposed system is promoted as the first level of the safety net where households with children receive the benefit to help meet part of the expenses associated with school and nutrition. The other existing programs are additional benefits that can address the extra and special needs of the particular household. The combined benefits will, therefore, have a consolidated and stronger impact.

### 4.2. Costing of the Proposed System Methodology

In this study, the projection exercise is divided into two parts: First, projecting the underlying factors (demographic and macroeconomic). Second, under the set of specified assumptions on the benefit parameters discussed earlier (eligibility conditions, coverage, benefit level etc.), beneficiaries, benefit level, and overall costs are projected for the next 10 years. In next chapter, the cost structure will be integrated within the overall fiscal envelop of the country.

The linkages and dependency structure of the projection parts are illustrated in the following diagram.

Figure 11: Projection Model Components and Dependency Structure



### 4.3. Projection Assumptions and Results

### 4.3.1. <u>Projection of the Demographic and Macroeconomic Profile:</u>

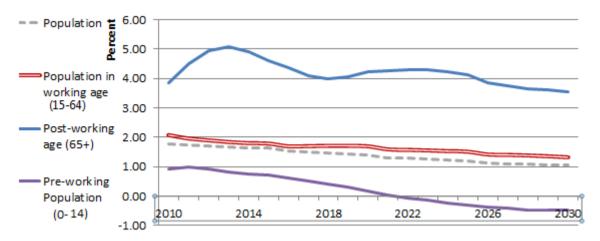
For the demographic projection, the study uses the medium-variant population projection made available by the United Nations Department of Economic and Social Affairs, Population Division. The data set is disaggregated by sex and single-year age. The following table summarizes the population projection main characteristics relevant to the study.

	Thousands					
	2012	2014	2016	2018	2020	
Population	83,954	86,771	89,522	92,185	94,810	
Pre-school (less than 6)	10,931	11,020	11,038	10,991	10,904	
Children age 6-14	15,135	15,463	15,791	16,087	16,303	
		Percentag	e of Total Po	opulation		
Pre-school (less than 6)	13.02	12.70	12.33	11.92	11.50	
Children age 6-14	18.03	17.82	17.64	17.45	17.20	
	Dependency Ratio, Per cent					
YouthDR	72.2	71.3	69.9	68.3	66.9	

Table 8: Population Projection (Medium Variant) Main Characteristics, 2012 - 2020

Source: Own calculation based on data from UN (2011a).

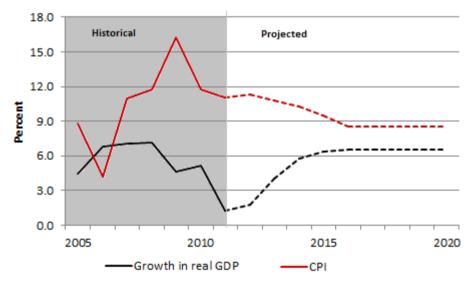
Figure 12: Population Growth Rates by Major Age Groups, 2010 - 2030



Source: Own calculation based on data from UN (2011a).

For the macroeconomic model, the study uses the IMF's medium-term forecast for real GDP growth rate and inflation rate, which covers until 2016. From 2016 to 2020, the rates are fixed at the rate of 2016. GDP in current prices and per capita GDP are calculated for the projection period.

Figure 13: Macroeconomic Model's Assumptions- GDP Growth Rate and CPI Rate

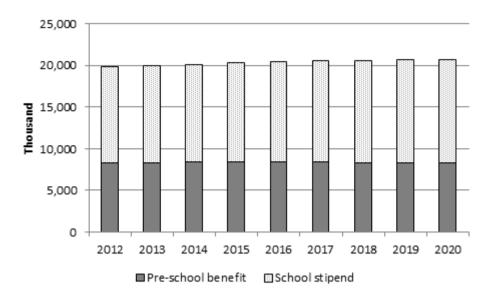


Source: Based on data from IMF (2011).

### 4.3.2. Projection of Beneficiaries

As discussed earlier, the low benefit amount coupled with administrative measures form an implicit self-targeting. As an assumption, this simulation excludes the richest quintile and/or children attending private Arabic and foreign language schools. Therefore, according to HIECS 2008-09, the take up rate will cover 68.3 percent of households, constituting 76.6 percent of the eligible population. Applying this rate into the corresponding age groups gives the program beneficiaries.

Figure 14: Beneficiaries in Thousands of children, 2012-2020

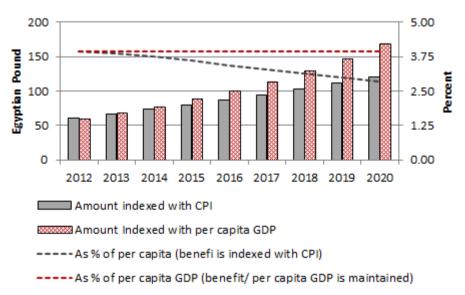


#### 4.3.3. Projection of Benefit Level and Overall Cost

As discussed earlier, the benefit amount is proposed at E£60 per child payable monthly (for the school-stipend benefit, it is payable during the school year only -9 months).

The benefit amount is indexed under two different scenarios: first, benefit amount inflated with the CPI for the corresponding year. Second, the ratio of benefit amount to GDP per capita is maintained constant. While the first indexation method maintains the benefit amount value in real term, the second indexation method permits possible improvement in the benefit amount in real term in line with the overall improvement in the economic condition.

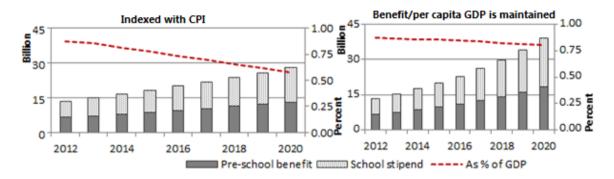
Figure 15: Benefit Amount in Current Local Currency and as a percentage of Per Capita GDP (right axis). 2012-2020



Total benefit amount spent on benefits is calculated as the product of the beneficiaries and the benefit amount for each year in the projection period. Administrative cost is assumed at 10 percent of the benefit amount. The overall cost for the proposed system of child benefits is estimated at less than one

percentage point of GDP, precisely 0.88 percent of GDP, divided almost equally between the preschool and school stipend benefits.

Figure 16: Overall Cost of the System of Child Benefits in Billion Egyptian Pound and as a percentage of GDP (right axes), 2012-2020



### 5. THE IMPACT OF THE PROPOSED SYSTEM OF CHILD BENEFITS

The previous two chapters matched the cost between saving from the elimination of the gasoline subsidy in one hand (chapter 3), and in the other hand the cost of the proposed system and its future development (chapter 4). While the net cost of the combined measures comes to around zero as this is a reallocation between expenditure, the net impact on poverty should not be zero. This chapter looks at the potential impact that can be resulted from the system proposed. Recall, in chapter 3 we discussed that the gasoline subsidy is mostly captured by the rich and its elimination would be virtually with no tangible impact of increasing poverty.

### 5.1. Impact of proposed system on consumption poverty -simulation

In order to assess the potential impact of cash transfers, data from HIECS 2008/9 were inflated with detailed price indices to reflect 2011 prices and then poverty measures were simulated for the same year.

### 3.2.1. Update HIECS data

Specific prices indices were used to simulate the monetary value of household consumption in 2011 based on the HIECS survey of 2008-09. For each household, the study calculates the budget share of consumption groups –disaggregated as CPI allows. Multiplying budget shares by the percentage increase in price (derived from published CPI) gives an estimate of household consumption in 2011. In practice, however, households may be able to reduce the impact of the price increase by substituting away from expensive groups and using cheaper alternatives. Given that short-run substitution elasticities are smaller than long-run elasticities, the estimated household consumption is likely to closely approximate short-run welfare impacts. This estimate is also likely to be highly relevant for the poorest households who have more limited opportunities for substitution.

Similarly, food poverty lines were also updated using overall regional food CPI and non-food poverty lines were also calculated using the parametric estimates of food share.

#### 3.2.2. Simulation assumptions

The simulation uses the following simplifying assumptions:

- 1- All additional welfare benefits households would receive will be used for consumption: this implies that when new benefits are introduced, beneficiaries' welfare would increase by the amounts they receive.
- 2- Demand and budget shares are fixed: our estimates should be interpreted as upper bounds on the magnitude of income effects. The simulation compares baseline measures of poverty with measures of poverty taken after transfers are added to household consumption expenditure. It does not take into account households' behavioural responses to the transfer, which can be positive or negative from a poverty reduction perspective. For example, studies have shown that regular and reliable transfers can improve the productive capacity of households, especially in rural areas, so that the increase in income or expenditure is actually greater than the amount of the transfer (Sadoulet, de Janvry, & Davis, 2001). On the other hand, if transfers are mismanaged, the impact on food consumption could be lower than the amount of the benefit. The simulations below ignore these behavioural responses.
- 3- As discussed earlier, this simulation excludes the richest quintile and/or children attending private Arabic and foreign language schools. Therefore, according to HIECS 2008-09, the take up rate will cover 68.3 percent of households, constituting 76.6 percent of the eligible population.

### 3.2.3. Consumption poverty indicators

The simulations provided estimates of the change in the poverty headcount and poverty gap, for all individuals and for children in particular, that is expected to result from the proposed transfers. Three types of indicators are used in this evaluation; 1) change in per capita consumption; 2) incidence of poverty and poverty gap; and 3) an inequality measure; Gini coefficient<sup>7</sup>.

### 3.2.4 Simulation results: consumption poverty before and after the proposed system

As a result of the price change between 2008/9 and the baseline year 2011, the simulated baseline poverty rates differ from the latest poverty rates discussed in chapter 2. The simulated before-benefit head count rate is estimated at 30.6 percent in 2011. Despite of the magnitude change, the relationship between poverty rates and households characteristics remains the same. For instance, poverty rate continues to be higher among households with children aged 0 to 14 (33.4 percent for households with children aged 0 to 14 years of age compared to 20.9 percent among households with no children), similar to the pattern discussed in chapter 2.

The proposed system of cash transfers is estimated to increase per capita consumption on average by 3.5 percent for all households and 11.8% for households of the lowest quintile. Since consumption pattern varies with household composition and age structure as well as with location, the impact of

<sup>&</sup>lt;sup>7</sup> This is the most commonly used measure of inequality. Its value ranges between 0 and 1: A low Gini coefficient indicates more equal income or wealth distribution, while a high Gini coefficient indicates more unequal distribution. 0 corresponds to perfect equality (everyone having exactly the same income) and 1 corresponds to maximum inequality (where one person has all the income, while everyone else has zero income).

price changes affect households differently according to their location, age and composition. Households with children aged 0-5 experience the largest increase by 6.6 percent of their per capita consumption, while consumption of households with children aged 6-14 years increase by 5.3 percent. Simulated poverty reduction patterns follow the pattern of per capita consumption increase. Households with children of age 0-5 exhibit the largest impact with a reduction of 27.2 percent. The poverty rate of households with children aged 6-14 decreases by 22.5 percent. Furthermore, since poor households have more children, the impact of the proposed benefits is found greater when the incidence of poverty reduced by 19.3 percent for all individuals, poverty declined by 32.1 percent among children 0-5 and by 26.0 percent among children 6-14. It is also shown that reductions in poverty incidence are stronger among: children residing rural areas and especially in Upper Egypt, children living in households with heads with no education, children of large households, and children raised in a female headed households; particularly age 0-5 years.

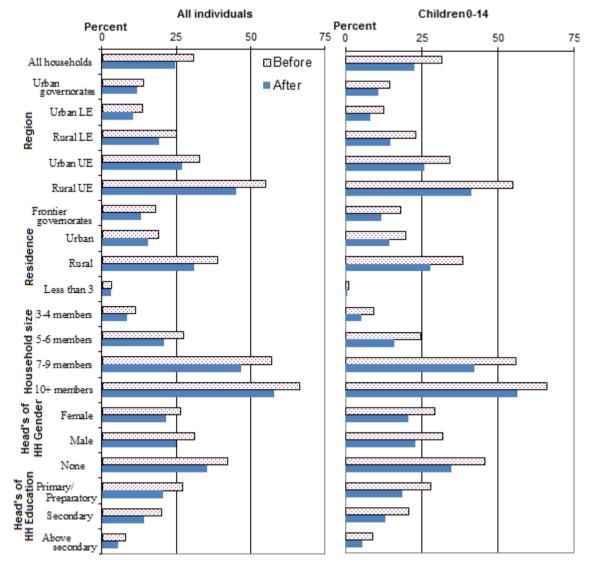


Figure 17: Simulated Poverty Rates before and After Proposed System of Benefits, 2011

Source: Calculation is based on data from CAPMAS (2009b).

In terms of poverty gap reduction, the impact is found to be much higher than the impact on the poverty rate. The simulated poverty gap reduction amounts to 27.9 percent for all households, and it reaches 38.7 percent for households with children of 0-5 years of age and 32.3 percent for households with children age 0-14 years. Gini coefficient, as a measure of inequality, follows similar pattern. Overall improvement in Gini coefficient amounted 2 percentage points with improvements are higher among households with children.

### 5.2. Impact on non-income dimensions- international experience<sup>8</sup>

While simulating the impact of the proposed system on non-income dimensions is challenging and beyond the scope of this study, evidence, from different countries, shows that progress to achieve the MDGs can be accelerated when cash transfer programs and approaches are used to complement supply side interventions by increasing demand to services. Below is a list of selected country examples:

School enrolment, child labour, and early marriage

- Bangladesh: The stipend program for girls' education (FSP) is believed to have increased girls' net primary enrolment between 1996 and 2002/3 from 48% to 86%.
- Ethiopia, South Africa, Malawi, Mexico, Nicaragua, Brazil, Ecuador, Cambodia, Pakistan and Turkey: Transfer programmes have demonstrated significant percentage point increases in enrolment and/or attendance.
- Zambia, Malawi, Brazil, Columbia, Nicaragua, Mexico: overall positive effects on girls' education.
- Malawi: new enrolment was twice as high in households participating in cash transfer scheme (8.3% vs 3.4%) within a one year period.
- Malawi: cash transfers to adolescent girls increased school attendance, and led to a significant decline in early marriage, pregnancy, self-reported sexual activity and HIV prevalence among beneficiaries.
- Mexico: Oportunidades had little impact at primary level (where enrolment was already high), but secondary school enrolment of girls increased by 11-14%, compared to 5-8% for boys. It also resulted in a reduction in probability of working for ages 8-17.
- Brazil: the Programa de Erradicação do Trabalho Infantil (PETI) reduced both the probability of children working and their likelihood to be engaged in higher-risk activities.

Nutrition:

- Nicaragua: The Red de Protección cash transfer programme reduced stunting among children 6-59 months by 5.3 percentage points, with stronger impacts among poorer families. Moreover, during the coffee price shock, beneficiaries of this program were able to maintain and modestly increase per capita food consumption, while in other comparable households per capita consumption declined sharply.
- South Africa: children in households receiving a pension have on average 5cm greater growth than those in households without a pension this is the equivalent of approximately half a year's growth for Black and Coloured children.
- Mexico, Malawi, and Colombia: Social Protection programmes demonstrate reductions in stunting.

<sup>&</sup>lt;sup>8</sup> The evidence was collected from multiple sources and used in the brief (UNICEF, 2010), available at http://www.unicef.org/socialpolicy/files/Social\_Protection\_Accelerating\_the\_MDGs\_with\_Equity(2).pdf

### <u>Health</u>

- Mexico: Oportunidades led to a 17 per cent decline in rural infant mortality (8 percentage points on average). It also led to a reduction of maternal mortality by 11% among women participating and impacts were strongest in more marginalized communities.
- Bolivia: between 1993 and 1997, infant mortality rates among participating households in Bolivia's Social Fund declined from 61 to 31 per 1000. For non-participating comparable households, infant mortality rates did actually increase from 60 to 67 per 1000. Under 5 mortality rates fell over the same period from 94 to 55 per 1000 in participating households, but rose from 93 to 108 per 1000 in comparable non-participating households.
- In all cash transfer programs for which there is data, with the exception of the PATH programme in Jamaica, incidence of illness has decreased among children, particularly younger children.

### 5.3. Impact on economic growth

A coherent social cash transfer program that ultimately results in an income transfer from the rich to the poor can play a significant role as an economic stimulus to foster economic growth. This is due to the fact that poor households have a high marginal propensity to consume. The additional incomes poor households receive (from the program or other sources) are spent in large on basic necessities, whereas richer households' incremental reductions of their incomes (resulted from financing the benefit) are not expected to reduce their consumption with the full amount. This gives a rise to a multiplier effect: the increased consumption resulted from the benefit leads to increased incomes of local producers and service providers, which further leads to increased consumption, etc. In other words, the initial amount spent on the proposed system of benefits may cause a change in aggregate output that is a multiple of the initial change. For instance, an increase of 1 percent of GDP in Bolsa Familia program in Barzil was estimated to result in a positive change of 1.44 percent in GDP (ILO, 2011). Not surprising, cash transfers programs comprise a significant portion of the fiscal stimulus packages in rich and poor countries alike. It was estimated that on average about 25 percent of fiscal stimulus spending was invested in social protection in both middle and higher income countries (UNICEF, 2010b).

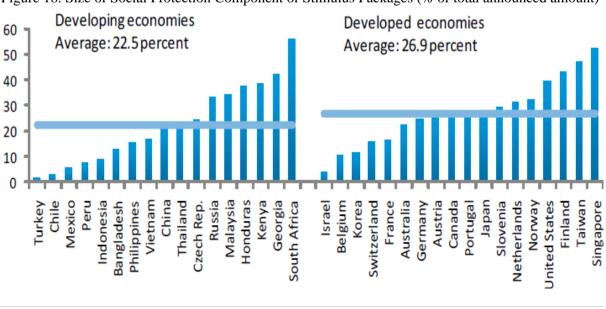


Figure 18: Size of Social Protection Component of Stimulus Packages (% of total announced amount)

Source: UNICEF (2010b)

### 6. CONCLUSION AND DISCUSSION

Despite of a period of sustained economic growth experienced in Egypt during the decade preceding the uprising of 2011 and government allocation of about one-third of the national budget to social protection, incidence of poverty increased over the same period- highlighting not only the economic growth was not pro-poor, but also ineffective social protection measures to address poverty.

The bulk of the social protection spending is on the system of subsidies, which was estimated at 8.47 percent of the GDP in 2011/2. It is also important to note that spending on key social sectors is one of the lowest in the region and very much below international recommended spending levels (Share of budget allocation to Education and Health stood at 10.5 and 4.7 percent for Education and Health, respectively). This imbalanced and distorted public spending pattern represents an area for active evidence based advocacy to arrive at the optimal policy mix that maximizes the society's social welfare, especially at a critical time when there have been debates about future policy directions and opened space for discussion on the budgeting issues.

The experience of politically fragile systems, as the case of post-revaluation of 2011 in Egypt, highlights the importance to differentiate between the different types of subsidies and not lump them in the same basket. For instance, the food subsidy (bread, oil etc), which costed 1.2 percent of GDP in 2011/2, is not only popular, but also significantly contributed to keep poverty very shallow in Egypt (theoretically, it is only required 0.151 percent of GDP to eradicate poverty assuming costless and perfect targeting). Closer look at the different subsidy schemes shows that allocation to the energy-products subsidy alone counts for 6.09 percent of GDP in 2011/2, which costs more than the combined spending on health and education for the same year. While it is tempting to call for reforming the energy-products subsidy, it is still important not to lump all fuel items in the same basket. For instance, LP subsidy is important for the poor and constitutes about 5 percent of the value of consumption expenditure of the poor HH. Same for the kerosene subsidy (lowest 2 quintals capture more than 57 percent of the allocation). In the other end, the gasoline subsidy is highly regressive (93% goes to richest quintile).

This paper argued for removing only the gasoline subsidy of the subsidized energy products. If it is lifted, poverty was estimated to increase by 0.02 of one percent. The exact saving can be re-injected in the form of a universal system of child cash transfers (universal child grant age 0-6, and conditional universal grant on school attendance for age 6-14). The main findings were: the proposed measure has the potential to lift around one fifth of poor Egyptians out of poverty with greater impact on children (reduction of 28.2 percent among children age 0-14). Moreover, the cost of the system is projected to even decline as a percentage of GDP over time, benefiting from a favorable demographic profile. This is true when the value of the benefit amount is maintained in real term as well as a percentage to percapita GDP.

Against this evidence, the question remains is not whether the government of Egypt 'should' consider the policy recommendation, but it is rather about if it 'will' do it. To Answer this 'will' question depends largely on the process it selects (top down or inclusive dialogue).

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