



## **SOCIAL EXPENDITURE AND THE POOR IN EGYPT**

Ahmed Galal  
Working Paper No. 89  
November 2003

This paper was presented at the ECES conference on “Fiscal Sustainability and Public Expenditures in Egypt,” which was held in Cairo on October 19-20, 2003. I would like to thank Hossam Badrawi, Shanta Devarajan, Heba Nassar and conference participants for their valuable comments. I would also like to thank Amal Refaat for excellent research assistance. The usual caveats apply.

## **Abstract**

The purpose of this paper is threefold: (i) to assess the effectiveness, efficiency and equity of public expenditure on education, health and food subsidy programs in Egypt, (ii) to broadly analyze reform approaches of these sectors, and (iii) to make policy recommendations for Egypt accordingly. The paper shows that the Egyptian government is committed to providing education and health services and to protecting the poor. However, it argues that on-going reform efforts follow the least rewarding approach. In particular, the current approach relies heavily on increasing and/or improving the quality of inputs rather than on aligning incentives with desired outcomes and enhancing accountability. A shift in approach is therefore suggested, along with concrete measures to improve incentives, empower beneficiaries, and strengthen accountability.

## I. INTRODUCTION

Policymakers in Egypt have lived up to their commitment to protect the poor by consistently allocating significant public resources to expenditures on education, healthcare and subsidy programs. The most visible evidence of adhering to this social contract is the contrast between the reduction in the ratio of public expenditures to GDP from 38.0 percent in 1990/91 to 29.2 percent in 1999/2000 while simultaneously increasing the corresponding ratio for social expenditures from 6.9 percent to 7.5 percent. What is questionable is the extent to which these social expenditures reach their intended target groups, efficiently and equitably. If the answer is “not as much as possible,” the question is “how” best to deal with these deficiencies. And “how” is the key question addressed in this paper.

This line of inquiry is not new. Several studies have addressed the same question for the Egyptian case, either by analyzing overall social expenditures (e.g., World Bank, 2001) or by focusing on expenditures on the education sector (e.g., Birdsall and O’Connell, 1999; El Baradei, 2000; Galal, 2002; UNDP, 1998), the health sector (e.g., Rannan-Eliya, Vidal, and Nandakumar, 1999) or subsidy programs (e.g., Adams, 2000). However, these studies differ markedly in the recommendations they make, in principle because they adopt different approaches to characterize the problem and identify its root causes.

More specifically, some of these studies followed what was coined elsewhere (Galal, 2002) as the “engineering” approach, which attributes the failure of public expenditures to inadequacy of the quantity and/or quality of inputs to reach desired levels of output. The recommendations of this approach typically call for increasing the number of schools and improving the curriculum, building more hospitals and offering better training for doctors, and safeguarding against cuts in subsidies. Other studies follow an “industrial organization” approach (e.g., Galal, 2002), which focuses on designing the rules of the game in such a way as to align the incentives of providers of health and education services with desired outcomes, and empowering the recipients (for example, through decentralization and better information) to demand and monitor performance. Finally, the most recent World Development Report (World Bank, 2003a) offers a more comprehensive approach, in which it is argued that the most effective way to improve the delivery of social services to the poor is by increasing the *accountability* of providers to clients, providers to the state, and the state to clients. According

to this approach, recommended reforms involve measures to strengthen the voice of citizens over politicians, improve the compact between policymakers and providers, upgrade management of frontline providers, and empower clients to demand better services.

The key argument in this paper is that the engineering approach is likely to achieve the least benefits and the World Development Report (WDR) approach the most. Because reforms in Egypt seem to have many of the characteristics of the engineering approach, a shift in favor of measures to improve incentives and enhance accountability is called for. To elaborate these arguments, the remainder of the paper is organized in four sections besides the introduction. Section II offers a number of stylized facts about social expenditures and the poor in Egypt. Section III discusses alternative reform approaches. Section IV provides a reform agenda, and section V offers some concluding remarks.

## **II. STYLIZED FACTS**

Available data and existing studies suggest that public expenditures on education, health and direct subsidies in Egypt contributed to improved access, but not as effectively, efficiently and equitably as possible. This broad conclusion is elaborated below under 5 stylized facts, keeping in mind that the analysis is limited to central government expenditures. It also excludes infrastructure services (e.g., electricity, water, sanitation) because these services are not funded directly by the central government.

*Stylized fact #1: Social expenditures did not diminish in recent years despite fiscal austerity.*

Over the decade of the 1990s, Egypt's public expenditures on education, health and subsidies relative to total public expenditures went up from 18.1 percent in 1990/91 to 25.6 percent in 1999/2000 (Table 1). Correspondingly, per capita social expenditure increased from LE 145.5 in 1990/91 to LE 377.1 in 1999/2000, an average annual increase of 11.3 percent in nominal terms and 3.1 percent in real terms. The ratio of social expenditures to GDP increased from 6.9 percent in 1990/91 to 7.5 percent in 1999/2000, despite a decline in total public expenditures to GDP from 38.0 percent to 29.2 percent.

The composition of social expenditures changed over time in favor of education and health at the expense of subsidies. More specifically, the ratio of public expenditures on education to GDP went up from 3.1 percent in 1990/91 to 4.6 percent in 1999/2000,

**Table 1. Social Expenditure in Egypt, 1990/91-1999/2000, (in percent unless specified otherwise)**

	1990/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00 <sup>1</sup>
<b>Aggregates<sup>2</sup></b>										
Total public expenditure/GDP	38.0	37.2	35.4	34.7	30.5	29.8	27.9	27.3	30.5	29.2
Total social expend./GDP	6.9	6.9	6.3	5.9	6.1	6.1	6.3	6.7	7.1	7.5
Total social expend./Total expend.	18.1	18.5	17.7	17.0	20.2	20.6	22.4	24.6	23.4	25.6
Investment social expend./Total investment expend.	5.5	4.4	5.8	11.6	14.3	13.8	16.7	17.8	16.7	17.0
Current social expend./Total current expenditure	25.1	25.2	21.0	18.3	21.6	22.2	24.0	26.5	26.2	28.6
Per capita social expenditure (LE)	145.5	170.2	169.6	174.5	208.5	228.0	253.9	290.3	328.6	377.1
Real per capita social expenditure (1990, LE)	145.5	140.5	126.1	118.9	129.9	132.5	138.9	153.0	166.8	186.2
<b>Education<sup>2</sup></b>										
Total expend. on education/GDP	3.1	2.8	2.9	3.2	3.6	3.5	3.7	4.1	4.5	4.6
Total expend. on education/Total public expenditure	8.1	7.5	8.3	9.1	11.7	11.7	13.2	15.2	14.7	15.7
Investment expend. on education/Total expend. on education	19.4	14.7	12.5	22.2	19.8	19.4	22.3	18.7	23.7	19.8
Current expend. on education/Total expend. on education	80.6	85.3	87.5	77.8	80.2	80.6	77.7	81.3	76.3	80.2
Per student expend. on education (LE) <sup>3</sup>				352.5		471.0	552.6	642.9	739.6	835.0
Real per student expend. on education (1990, LE) <sup>3</sup>				240.2		273.6	302.3	338.8	375.5	412.4
<b>Health<sup>2</sup></b>										
Total expend. on health/GDP	0.8	0.7	0.7	0.6	0.7	0.7	0.7	0.9	1.1	1.3
Total expend. on health/Total public expenditure	2.1	1.9	1.9	1.9	2.2	2.5	2.7	3.2	3.5	4.4
Investment expend. on health/Total expend. on health	20.3	17.7	10.5	8.2	20.8	18.2	20.0	33.7	41.9	29.6
Current expend. on health/Total expend. on health	79.7	82.3	89.5	91.8	79.2	81.8	80.0	66.3	58.1	70.4
Per capita expenditure on health (LE)	17.3	17.2	18.6	19.1	23.0	27.6	30.4	38.0	48.8	65.4
Real per capita expenditure on health (1990, LE)	17.3	14.2	13.8	13.0	14.4	16.0	16.6	20.0	24.8	32.3
<b>Subsidy</b>										
Subsidy/GDP	3.0	3.4	2.6	2.1	1.9	1.9	1.8	1.7	1.6	1.6
Subsidy/Total current expenditure	12.3	13.5	9.5	7.4	7.8	8.0	8.3	8.0	7.5	7.4
Per capita share of subsidy (LE)	63.3	84.4	71.4	61.9	64.6	70.9	73.8	73.4	74.4	80.2
Real per capita share of subsidy (1990, LE)	63.3	69.7	53.0	42.2	40.3	41.2	40.4	38.7	37.8	39.6

<sup>1</sup> Pre-actual.<sup>2</sup> Functional classification of expenditure by local administration and services authorities is not available and thus current expenditure on education and health are underestimated.<sup>3</sup> Students in MOE and Al Azhar schools, and in public higher education institutions.*Source:* Calculated on the basis of data from the Ministry of Finance.

approaching the average for lower middle-income countries of 5.1 percent (Table 1). Public expenditure per student went up from LE 352.5 in 1993/94 to LE 835.0 in 1999/2000, an average annual increase in real terms of 11 percent. Public expenditures on health relative to GDP has also increased from 0.8 percent in 1990/91 to 1.3 percent in 1999/2000 (Table 1). Unlike expenditure on education, however, this level of expenditure does not compare favorably with the average for similar developing countries (2.6 percent). Also, total healthcare budget in Egypt is under-funded, amounting to 3.8 percent of GDP in 2000

compared to an average of 5.3 percent for countries with similar per capita income. Finally, while direct subsidies also increased in nominal terms over the past decade, its weight relative to GDP declined from 3.0 percent in 1990/91 to 1.6 percent in 1999/2000.

*Stylized fact #2: Social expenditures paid off, at least in terms of improving access.*

The data indicate that access to education and health services improved in the 1990s. More Egyptian boys and girls are now enrolled in education than before and illiteracy rates have come down (Table 2). Gross enrollment rates improved at all levels of education, exceeding the enrollment rates in lower middle-income countries in secondary and tertiary education. Where Egypt lags behind comparable countries the most is with respect to adult literacy rates, which was 56 percent in 2001 compared to 85.7 percent in comparable countries.

Similarly, public expenditures on health made it possible by 2001 to extend immunization to 98.3 percent of the population, increase the number of physicians per 1000 individuals, and expand the coverage of health insurance to 76.6 percent of the population (Table 2). Together with higher per capita income, greater supply of education, and expansion of infrastructure, Egypt was able by 2001 to reduce the rate of infant mortality to 35 per 1000 births and to increase life expectancy to 68.3 years, compared respectively to 33.2 per 1000 births and 69.2 years in similar developing countries.

Despite the reduction in the relative importance of direct subsidies, poverty declined in Egypt from 24.9 percent of the population in 1990/91 to 16.7 percent in 2000/01 (El Laithy et al. 2003). Naturally poverty is influenced by a host of variables besides subsidies, but a World Bank study (2001) finds that food subsidies improved nutrition of the poor as subsidized items account for nearly 40 percent of their caloric intake.

*Stylized fact #3: While access improved, target groups did not receive the full benefits of social expenditures.*

Notwithstanding improvements in access, social expenditures did not always reach intended groups. Furthermore, the benefits were eroded by the low quality of services and weak link between services and demand.

**Table 2. Improved Access to Social Expenditure, 1990/91-1999/2000**

	Egypt		Lower middle income countries
	1990	2001	2001
<i>Education<sup>1</sup></i>			
Gross enrollment (%)			
Primary	93.8	100	104.0
Female	85.8	96.0	103.8
Male	101.4	102.9	104.2
Secondary	76.2	83.5	65.0
Female	68.1	83.1	62.3
Male	83.8	88.2	67.7
Tertiary	15.8	39.0 (1998)	14.9
Adult literacy rate (% of population ages 15 and above)	47.1	56.1	85.7
<i>Health</i>			
Immunization coverage (selected vaccines)	87.7	98.3	82.3
Beds per 1000 people	2.0	2.0	3.3 (1997)
Physicians per 1000 people	0.8 (1990)	1.6 (1997)	1.8 (1998)
Health insurance coverage of individuals nationwide	31.1 (1995)	76.6	
Life expectancy at birth (Years)	62.8	68.3	69.2
Infant mortality rate (per 1000 births)	76.0	35.0	33.2
Under 5 mortality rate (per 1000 births)	104.0	41.0	41.2
Out of pocket expenditure as share of total health expend.	54.4	49.6	37.4 (2000)

<sup>1</sup> Egypt data on gross enrollment in education are for 1990 and 2000 unless otherwise specified. Lower middle income data on gross enrollment are for 1999.

Sources: World Bank (2003b); Institute of National Planning, *Egypt, Human Development Reports*, 1995 and 2003; and El-Zanaty and El Saaid (2002).

In education, both rich and poor students are entitled to free public education. Lack of differentiation between the recipients by income levels depletes scarce resources that could be either saved or spent on pro poor programs. Exacerbating this problem is the low quality of education, as evidenced by the high number of students per teacher, high repetition rates, especially in primary education, and the high cost of private tutoring in household expenditure on education (Table 3). The low quality of education and an enrollment policy based on the absorption capacity of the education system rather than on market demand, contributed to rising unemployment among graduates and may have discouraged the poor from participating in education altogether. In 1998, unemployment among the educated was 9.6 percent, compared to only 1.8 percent among illiterates.

Like education, access to health services improved in the 1990s, as new hospitals were built, medical equipment acquired, and more doctors and nurses hired. However, a recent survey of the users of inpatient and outpatient health services (El-Zanaty and El Saaid, 2002)

indicates that quality (measured, for example, by availability of staff and satisfaction with services) is much lower in public than private hospitals (Table 3). The surge in the supply of services by the private sector made quality health services available to those who can afford them. Exacerbating this problem is that out of pocket expenditure relative to total expenditures on healthcare in Egypt (49.6 percent) is higher than the corresponding ratio in other Arab countries (34.0 percent).

**Table 3. Quality of Social Expenditure, (percent unless specified otherwise)**

	Egypt	Comparators
		Lower middle income countries
<i>Education</i>		
Pupil teacher ratio in primary education, 1999	23.0	21.0
Repetition rates, 1998		
Primary (% of total enrollment)	5.2	2.2
Share of private lessons in yearly education expenditure by household in public schools, 1997 (%)		
	Public schools	Private schools
Primary	127.9	57.5
Preparatory	125.1	83.3
Secondary	129.3	97.7
Higher education	67.5	75.7
Unemployment rate, 1998 (%)		
	Educated	Illiterate
	9.6	1.8
<i>Health</i>		
Quality of inpatient services, 2002		
Staff available during working hour	MOHP	Private facilities
Satisfaction with quality of service offered	85.7	95.7
	88.8	97.6
Quality of outpatient services, 2002		
Days to get an appointment	0.3	1.7
Waiting time in minutes	39.5	37.8
Satisfaction with quality of service offered	83.6	98.1
Share of out of pocket expend. in total health expend., 2000		
	49.6	Arab countries 34

Sources: Galal (2002); El-Zanaty and El Saaid (2002); World Bank (2003b); World Bank (2002); and World Health Organization, WHO statistics.

Leakage of subsidy is a problem well recognized by the government. The leakage of food subsidies is more acute in the case of baladi bread and flour, which are not subject to rationing, than edible oil and sugar, which are subject to rationing. Besides leakage, the system creates the opportunity for diversion of subsidized grain, flour, and bread to open markets at higher prices. If these problems were avoided, the current level of subsidy would



not seem too low. According to the World Bank (2001), if all subsidies were spent on the poorest 20 percent of the population, it would have amounted to a transfer of LE 270 per capita compared to a poverty gap of about LE 356.

*Stylized fact #4: Even if leakage were avoided altogether, more and better outcomes could be had from the reallocation of public expenditures.*

The data suggest that the efficiency of public expenditures on education, health and subsidies could be improved without additional allocation of resources. This observation applies to current as well as to investment outlays.

In the education sector, a large proportion of public expenditures was allocated to overheads (Table 4). In 2001, the ratio of teaching to non-teaching staff was 1:3. In the same year, the share of wages to current expenditures was 86.1 percent in primary and secondary education and 75 percent in higher education, compared to the recommended share of 66 percent. This pattern of allocation may be responsible in part for the low quality of education, pointed out earlier.

**Table 4. Efficiency of Public Expenditure in Egypt**

	2001	
<i>Education</i>		
Teaching to non-teaching staff ratio		
Pre-university MOE schools	1.3	
Pre-school Al Azhar	1.8	
Share of wages in current expenditure (%)		Recommended ratio
Primary & secondary	86.1	66.0
Higher education	75.3	
<i>Health</i>		
Occupancy rates of hospital beds (%)		Recommended rates
MOH beds	39	60-80
HIO beds	55	
Share of curative expenditure in Ministry of Health expenditure	56	

Sources: World Bank (2002); Gaumer et al. (1998); and World Bank (2003a).

In the health sector, similar questionable allocations are observed (Table 4). For example, in 1998/99, as much as 42 percent of public expenditures was allocated to investment, despite low levels of occupancy of hospital beds. The bed occupancy rate in hospitals run by the ministry was only 39 percent, while the occupancy rate in hospitals run

by the health insurance organizations 55 percent. Both rates are lower than the 60-80 percent occupancy rates observed elsewhere. Also, 56 percent of the resources were allocated to curative services, despite the prevalence of communicative diseases.

With respect to the efficiency of the subsidy programs, there are several studies documenting the benefits, leakages and targeting. Not much attention has been directed however to the economic (rather than budgetary) cost of these subsidies, nor to the alternative policies of meeting the basic needs of the disadvantaged.

*Stylized fact #5: Social expenditures served as an equalizing force, but more equitable outcomes are possible.*

The data indicate that improved access to education, health and subsidized products served as an equalizing force. Social expenditures enabled the poor to accumulate more human capital, enjoy better healthcare and thus greater earning capacity. However, the same data suggest that public expenditures could be better allocated to attain an even greater income, regional, and gender equality (Tables 5 and 6).

In the education sector, the bias of public expenditures in favor of the non-poor in 1997 was most dramatic in higher education, where the share of the lowest quintile of the population was only 3 percent. While the poor broke even and did even better than the richest quintile in basic and secondary education, the affluent groups attain on average 2.6 years of schooling and 27 percent literacy rate more than the poor. At the regional level, the trend is favorable to the poorest regions (Table 6). Between 1992 and 2001, adult literacy and enrollment rates at all levels of education improved across governorates, but the pace of improvement was greater in poorer than richer governorates. A similar positive trend occurred with respect to gender disparity, as measured by adult literacy and gross enrollment in education.

In the health sector, public expenditures in 1995 also favored the more affluent groups, as the poorest quintile of the population received only 16.4 percent compared to 23.6 percent for the richest quintile. The extent of the bias varied, depending on the provider of the services. The good news is that the poorest quintile did better than other income groups in terms of health insurance coverage, with almost 80 percent of them covered in 2002.

Furthermore, between 1992 and 2001, there was a notable improvement in life expectancy at birth and mortality rates in both urban and rural areas, with the pace of improvement more significant in poorer regions.

As for the food subsidy program, the 1997 data suggest that the lowest quintile of the population in rural areas and urban areas benefited more from subsidies than the richest quintile when income transfers from subsidized food is measured as share of total per capita expenditure.

In short, the five stylized facts paint a positive picture about government commitment to the poor. The other side of the coin is that these expenditures could potentially be made to benefit the poor more effectively, efficiently and equitably. The question we turn to now is “how.”

**Table 5. Distribution of Social Expenditure by Income Group**

	Poorest quintile	Second	Middle	Fourth	Richest quintile
<i>Distribution of public spending on education, 1997</i>					
Total	15.0	19.0	20.0	21.0	24.0
Basic-secondary education	20.0	23.0	20.0	20.0	16.0
Higher education	3.0	13.0	16.0	23.0	45.0
<i>Distribution of public health expenditure, 1995</i>					
Total	16.4	17.5	19.1	23.5	23.6
Ministry of Health	19.4	20.3	20.1	21.9	19.3
Health Insurance Organization (General)	14.5	16.1	15.7	20.5	33.6
Health Insurance Organization (Students)	17.5	17.6	20.9	23.9	20.3
Other ministries	13.0	14.4	19.5	28.2	25.3
<i>Full immunization coverage by income group (Living children 12-23 months)</i>					
	65.1	72.8	81	86.6	92.5
<i>Percentage coverage of household by health insurance, 2002</i>					
	79.3	80.8	76.2	75.6	76.2
<i>Distributional impact of food subsidies, 1997</i>					
<i>Rural areas</i>					
Income transfers from subsidized food (LE per capita per week)	1.62	1.57	1.58	1.87	1.86
Income transfers from subsidized food/total per capita expend.	10.43	7.68	6.17	5.77	3.39
% of daily calories from subsidized food	37.9	32.4	30.5	31.8	28.5
<i>Urban areas</i>					
Income transfers from subsidized food (LE per capita per week)	1.83	1.85	1.96	1.75	1.6
Income transfers from subsidized food/total per capita expend.	8.74	6.2	4.81	3.1	1.43
% of daily calories from subsidized food	43.5	40.4	36.4	30	24.6

Sources: Rannan-Eliya, Vidal, and Nandakumar (1999); World Bank (2002); Adams (2000); World Bank, *Multi-Country Reports by HNP Indicators on Socio-Economic Inequalities*:<http://www.worldbank.org/poverty/health/data/statusind.htm>; and El-Zanaty and El Saaid (2002).

**Table 6. Regional and Gender Disparities, 1992 and 2001**

	Governorate imbalances <sup>1</sup>						Gender gap <sup>2</sup>	
	1992			2001			1992	2001
	Richest governorate	Poorest governorate	Richest/Poorest	Richest governorate	Poorest governorate	Richest/Poorest		
<i>Income imbalances</i>								
GDP per capita (LE)	3715	1519	2.4	12099	3009	4.0		
<i>Education imbalances</i>								
Adult literacy rate (%)	68.8	36.1	1.9	83.2	52.0	1.6	57	63.4
Combined basic & secondary enrollment (%)	85.8	67.5	1.3	92.0	86.8	1.1		
Gross primary enrollment (%)	96.4	87.8	1.1	91.0	96.4	0.9	80.4	93.2
Secondary enrollment (%)	62.5	42.4	1.5	89.9	64.8	1.4	86	94.9
<i>Health imbalances</i>								
Life expectancy at birth (Years)	68.6	62.3	1.1	68.5	66.7	1.0	103 (1991)	101.1
Maternal mortality rate (per 100000 live births) <sup>3</sup>	152.0	544.0	0.3	88.8	36.2	2.5		
Infant mortality rate (per 1000 live births) <sup>3</sup>	25.7	54.5	0.5	26.4	46.7	0.6		

<sup>1</sup> Ratio of governorate with highest GDP per capita to governorate with lowest GDP per capita.

<sup>2</sup> Females as percent of males.

<sup>3</sup> For these variables, a decline in ratios between 1992 and 2001 indicate an increase in disparity.

Source: Institute of National Planning, *Egypt Human Development Reports*, 1995 and 2003.

### III. ALTERNATIVE APPROACHES TO REFORM

Conceptually, the menu of approaches to reform the education and health sectors (and for that matter infrastructure services) includes three broad alternatives: an engineering approach, an industrial organization approach, and an accountability approach. These approaches have not been contrasted against one another explicitly elsewhere, but seem to capture the premise underlying most studies and actions taken by policymakers. Below is a discussion of each of these approaches, followed by a comparison between them.

#### *The Engineering Approach*

By an engineering approach we mean a framework in which the provision of education or health services is seen as a production function. As such, it simplistically takes a school, a teacher, and a headmaster to deliver education to students. Similarly, it takes a hospital, medical equipment and supplies, a doctor, and a nurse to deliver health services. The quantity, quality and mix of inputs determine educational or health outcomes. When outcomes are not satisfactory, what is needed according to this way of thinking is to increase the quantity of inputs, improve their quality or change their mix.

This approach is popular among policymakers, educationalists and health specialists. The manifestations of its adoption are numerous. All too often, policymakers request larger allocations of resources from the ministry of finance to build schools and hospitals, maintain existing facilities, train staff and pay wages. They devote significant efforts to improving the curriculum for teachers, doctors, nurses and students. They take measures to introduce technology in the classroom and hospitals. In addition, they change the mix of inputs, for example, by spending more on one type of education than another or one type of health services versus another. In essence, they are in the business of improving access and technical efficiency by means of more funds. Civil servants allocate and manage these funds according to bureaucratic rules, which allow maximum control of the process.

The engineering approach has its virtues. Improving access and technical efficiency are prerequisites to improving health and educational outcomes. The approach is also easy to understand and sell politically, as building schools or health clinics are rarely contested. Finally, it may be a reasonable way to proceed at the initial stage of development when most of the population lack education and health services and markets are still weak. But these virtues are offset by several shortcomings. In particular, the approach fails to motivate bureaucrats, teachers, doctors and nurses to do the best they can to improve performance because of the weak link between rewards and achievements. It fails to equip parents and patients with mechanisms to hold the providers accountable to clearly stated rules of the game. In addition, it fails to correct for market failures, especially with respect to equity and imbalance of information about service attributes between the supervisors, providers and consumers.

### ***The Industrial Organization Approach***

Unlike the engineering approach, the industrial organization approach focuses on incentives rather than technical coefficients.<sup>1</sup> In this framework, the principals (i.e., politicians or bureaucrats) are interested in particular outcomes (e.g., good quality education and health services), but they have to rely on agents (i.e., teachers or doctors) to obtain these outcomes. The problem is that the principals and agents may have different objectives (e.g., social welfare for the former and own benefits for the latter). The principals face additional

---

<sup>1</sup> For a more sophisticated exposition, see, for example Tirole (1988).

problems because they do not have full information about the performance of doctors and teachers, nor can they monitor their performance perfectly. Consumers may not have a choice of provider (if there is only one) and may lack mechanisms to monitor performance (e.g., through community participation). To resolve these problems, this approach suggests designing implicit or explicit contracts with rules of the game that align the incentives of the agents with those of the principals and empower users to monitor performance.

Recent reforms are increasingly integrating the insights brought about by this approach. Realizing that additional resources do not necessarily lead to improved health and educational outcomes, policymakers in a growing number of developing countries are linking the rewards of teachers and doctors to performance. They are giving parents and patients a choice of provider. They are also making information about the performance of schools and clinics available to the public. The premise and promise of these reforms are that performance improves if teachers, doctors and others see their income decline when students do badly and patients are dissatisfied. Similarly, the ability of parents and patients to choose schools (e.g., through voucher programs) and clinics (through flexible medical insurance plans) gives them the power to exercise pressure on providers to do better.<sup>2</sup> Finally, empowering consumers, for example, through decentralization, participation in decision-making, and mechanisms to file complaints, could also have positive effects on performance.

The industrial organization approach is a significant improvement over the engineering approach. Shifting focus to aligning incentives with desired outcomes motivates the providers to exert more effort to satisfy clients. As a result, allocative and x-efficiency improve, leading to more and better health and education services from the same level of resources. Against these advantages, the application of the industrial organization approach is more demanding than the engineering approach, in part because it involves changing the behavior of individuals and organizations. Other difficulties follow from the nature of contracts, which are

---

<sup>2</sup> To give but one example that illustrates the wide applicability of the approach, it is worth noting that school voucher programs have been adopted in Chile, Colombia, Cote d'Ivoire, Czech Republic and Bangladesh.

imperfect by definition.<sup>3</sup> Finally, the approach is essentially silent about the distributional dimension and political economy of reform.

### *The Accountability Approach*

The accountability approach, developed in the recent WDR (World Bank, 2003a), is the most comprehensive of all three approaches. Like the industrial organization approach, it focuses on aligning incentives with desired outcomes and the empowerment of users to exert pressure on providers for better results. Over and above, it deals explicitly with the relationship between citizens and politicians. Putting the pieces together, the report attributes poor delivery of social services to weaknesses in accountability in the relationships between policymakers and providers, clients and providers, as well as citizens and politicians. To strengthen accountability, the approach offers a rich menu of instruments, ranging from motivating the providers to strengthening the voice of the poor.

Analytically, the way the WDR addresses the policymakers-providers and providers-clients relationships is not very different from that of the industrial organization approach. However, the analysis of the relationship between citizens and politicians is novel. According to the report, the weakness in the citizens-politicians relationship is due to the frequent exclusion of citizens in developing countries from influencing the formulation of collective objectives and policies in the education and health services. In turn, this weakness is attributed to imperfections in the electoral systems, and the tendency of some politicians to use the provision of public services for political patronage.

The report suggests that societies could strengthen accountability in the citizens-politicians relationship in two ways. The first is through improvement in the electoral process, which is a complex and time-consuming process. The second involves measures to make public institutions more accountable now rather than wait for political changes to occur. Among these measures, the report cites as one example the involvement of citizens in the formulation of budgetary allocations at the level of local communities. This experiment has been tried in Porto Allegre, Brazil. Another example is the announcement of how much

---

<sup>3</sup> One difficulty relates to the inherent tension between specificity and flexibility. In particular, while specificity lends clarity to the relationship between the contracting parties, it limits the ability to adjust to unexpected changes.

resources are allocated to a particular sector, say education, and how much of these resources actually reach schools. This experiment was tried in Uganda. Both experiments enhanced accountability and produced positive results. While these specific measures may not be applicable elsewhere (because of differences in the institutional setup), the point remains that more can be done to improve accountability of public organizations. It is up to each society to find the best way to achieve this objective.

### *Comparison of Approaches*

Reforms under all three approaches have the potential of generating more benefits from a given level of public expenditures. But some questions remain. For example, are these approaches complements or substitutes? Is one of them likely to be more beneficial than the others? Finally, which approach is easier to implement?

On the first question, the three approaches seem to complement rather than act as substitutes for each other. Building schools is complementary to motivating teachers. Hiring doctors and nurses is consistent with increasing their accountability to patients. And improving the curriculum is consistent with giving citizens voice to hold politicians accountable for educational content and outcomes. Introducing one type of reform does not preclude or even replace the other. On the contrary, each reform can be used to reinforce the other in a coherent reform package that addresses different dimensions of the problem.

What about the relative benefits from each approach? Here the argument is that the gains are likely to be higher when reforms are designed following the accountability approach and minimal when the engineering approach is followed. The logic behind this assertion is as follows. Improving the physical relationship between inputs and outputs will improve technical efficiency. However, it will not guarantee that the concerned parties are sufficiently motivated to produce the most and best quality of education and health services. By the same token, introducing technology in the classroom or modern equipment in hospitals will undoubtedly bring about technical improvements. However, it will not lead to significantly better outcomes if parents and patients are not empowered to demand better services. In contrast, reforms along the lines suggested by the industrial organization approach address these problems, and thus are likely to produce gains in allocative and x-efficiency.



Finally, while the accountability approach is expected to achieve the same results as the industrial organization approach, it could potentially generate additional distributional gains. Surely, policymakers may decide on their own to allocate sufficient resources to benefit the disadvantaged. However, lack of voice on the part of the beneficiaries and loud voices of special interest groups may leave them with less than optimal allocation of resources. The adoption of mechanisms that strengthen the voice of citizens promises better distributional outcomes, in addition to gains in various types of efficiency.

With respect to the ease of implementation, there seems to be a correlation between the magnitude of expected gains and difficulties in carrying out reforms. On one hand, the engineering approach appears to be the least demanding in implementation, but is also associated with the least gains. On the other hand, the accountability approach seems to be the most demanding in implementation, but is also likely to bring about the greatest gains. The industrial organization approach falls in the middle, both in terms of implementation requirements as well as benefits. In reality, the choice of approach can best be made on a case-by-case basis, simply because of differences in the initial institutional and political conditions across countries. The question is which approach is more relevant for Egypt at this point in time. Below is an attempt to answer this question.

#### **IV. PROPOSED REFORM AGENDA**

Up until 1952, the majority of Egyptians lacked access to education and health services. Since then, the government took it upon itself to provide these services essentially free of charge. To implement this policy, large public bureaucracies were created. Rules regarding access, accreditation, curriculum, qualification of teachers and doctors were established. And public funds were allocated indiscriminately to meet demand.

The legacy of this policy still remains. Government commitment to social services is evident from increasing expenditures on health and education at a time of reducing public expenditure to restore macroeconomic stability. To maximize the returns from these expenditures, the current challenge for policymakers is to initiate a new set of reforms based on past experiences in Egypt and elsewhere. The need for more effective reforms is made urgent by the growing fiscal deficit, estimated at 6.3 percent of GDP in 2002/03. The rest of

this section contributes to this effort in two ways. It makes the case for a shift in the reform approach and outlines the features of a reform agenda.

### *The Case for Reform*

Making the case for reform does not mean that no reform is taking place. On the contrary, the reform process has been in progress for sometime and has in fact intensified in recent years. In both the education and health sectors, reform measures included building schools and hospitals to meet the needs of a growing population, improving the skills of teachers and doctors through training, upgrading the curriculum, and introducing technology in schools and hospitals. In its last annual meeting (September 2003), the ruling National Democratic Party adopted the principles of decentralization in education and the creation of an independent accreditation organization. In parallel, the role of the private sector in the provision of education and health services has been on the rise. As for the subsidy program, government commitment has been reaffirmed by topping the 2003 budgetary allocation to food subsidy by LE1.6 billion to cope with the inflationary impact of floating the Egyptian pound in January 2003. As noted earlier, these reforms paid off; more Egyptians are now more educated, healthier and better off than any time before.

The case for reform is based instead on the grounds that more could be attained from social expenditures by changing the current reform approach. In particular, the current approach does not focus sufficiently on motivating teachers and doctors to provide good quality services and hold them accountable for results. It does not empower consumers to demand quality services from providers, leaving them with no choice but to accept whatever they could get from public providers or pay handsomely to private providers if they can afford it. Also, it does not engage citizens in resource allocation decisions, or in the formulation of policies pertaining to service delivery.

Second, reforms are not sufficiently integrated. The end result is either marginal improvement or the illusion of making progress. The examples are numerous. In the health sector, building new hospitals is not necessarily desirable when occupancy rates are low. Hiring doctors without aligning their incentives with desired outcomes may well be associated with absenteeism. Reorganization of public providers of healthcare services without

establishing new rules of the game often entails no change in behavior. In the education sector, modest results are also likely if computers are introduced in schools but simply left to collect dust, if teachers are forbidden from giving private tutoring without compensating them adequately for performing their job, or if training teachers is not translated into improved teaching in the classroom. Of course partial reforms are valuable in their own right but may be counterproductive. The point is that without integrated reforms, they may only lead to limited results, if any.

Finally, the current approach seems to assume that increasing public spending is key to bringing about substantial benefits. The evidence points to the contrary (see World Bank, 2003a). Countries with a similar level of spending on health and education end up with different education and health outcomes, while countries with different levels of spending could end up with similar outcomes. This is because providers do not have the incentives to perform well, much of the public spending does not reach intended groups, or because the bulk of resources is absorbed by large bureaucracies. Distortions on the demand side could be another factor. Not only does a fraction of free healthcare, education services and subsidized food end up in the hands of well-off groups, but also leads to excessive consumption by all. Differentiation through voucher schemes, better targeting, and regional allocations based on need could save scarce public resources and achieve greater equity.

### ***Proposed Reforms***

On the basis of the preceding discussion, perhaps the most important recommendation for more effective delivery of social services in Egypt is a shift in the reform approach, away from viewing the delivery of these services as an input-output phenomenon to an incentive-accountability phenomenon. The most ambitious reform package would comprise measures to enhance motivation and accountability in all three relationships: government-providers, providers-clients, and citizens-policymakers. A second best package would leave the citizen-policymakers relationship out, and pursue policies to improve the incentives and accountability of providers to policymakers and clients. Carrying out reforms that focus only on the input-output mix represents marginal improvement over the status quo.

Rather than elaborating on the full range of measures emerging from the discussion of the three reform approaches, only four key reform elements are emphasized below. These elements are labeled the 4Ms: motivation, monitoring, markets, and money.

### ***Motivation***

Aligning the incentives of bureaucrats, teachers, doctors, and private sector providers of education and health services could be pursued through multiple channels. One channel is to set the *rules* so that their incentives are aligned with desired outcomes. This means, for instance, that resource allocation to schools are related to student performance, taking into account such intervening factors as student socioeconomic background. Similarly, resource allocation to hospitals could be decided on the basis of bed occupancy rates and/or patient satisfaction, rather than on the basis of the number of beds.

A second channel is *contracting out* the delivery of services to the private sector, government agencies, or even NGOs. This involves writing explicit contracts, and relating outcomes to rewards. For civil servants, this means that their salary and promotion will no longer follow rigid rules, where seniority and process rather than performance matter. For the private sector, it means counting on their profit maximization motives to participate in new businesses. For NGOs, it means capitalizing on their altruistic motives and giving them room for participation. The choice of the party to the contract with government could be made on a service-by-service basis. In particular, the government may begin contracting services that are easy to monitor, such as the publication of textbooks or immunization programs.

A third channel is to expose providers to *competition*, where possible. Competition has the merit of putting pressure on providers to do better without government intervention. Competition could be increased, for example, by eliminating segmentation of markets for healthcare services, or by encouraging private sector participation in the provision of education services. It could also involve giving parents vouchers that allow them to shop for better schools, or giving patients more flexible health insurance arrangements that permit them a choice of provider.

Contracts are of course not easy to devise and enforce, especially in a developing country like Egypt. Rules are not always apparent; think of rules differentiating between civil

servants. Enforcement capacity is often weak. Competition is not always feasible, for example, in cases where there is only one provider to serve a particular market. Nevertheless, these reforms are likely to improve motivation, and hence performance.

### ***Monitoring***

Providing incentives without the ability to monitor is only a partial solution. In fact, incentives without monitoring could well mean that providers will receive the incentives and blame bad outcomes on others or circumstances. It is important therefore to find mechanisms to strengthen the ability of regulators, beneficiaries, and the public at large through the media to monitor providers.

Strengthening the power of regulators to monitor providers is possible through the creation of independent and well-staffed organizations. This practice is adopted in sectors such as electricity, telecommunications and banking. The mandate of such organizations is to protect consumers, while making sure that the providers are sufficiently rewarded. There is no reason why this practice cannot be adopted in the healthcare and education sectors.

The role of beneficiaries, be it patients or parents of students, is another key channel for strengthening monitoring. Patients have first-hand knowledge about what happened in their encounters with doctors as well as outcomes. Parents can observe attendance or absenteeism of teachers and how much their children are learning in schools. If both are given the opportunity to capitalize on this knowledge, performance could be improved. The mechanisms for doing so could include, for example, giving parents the opportunity to participate in the selection of teachers, or patients a due process for filing complaints.

As for the public at large, the media can play an important role in strengthening the capacity to monitor providers. For this to work well, it is important that the authorities publish systematic information about performance of schools and hospitals. NGOs could also play a role in this regard. Particularly valuable from the point of view of monitoring is benchmarking performance over time or in relation to other providers at home and abroad. Also valuable is information regarding preventive care and how to select medical providers.

### ***Markets***

The markets for education and health services are not about single products or single markets. Within the education sector, there is a market for such simple products as the publication of textbooks, as well as a market for complex products such as the delivery of education services to students. In the health sector, there is also a simple market for medicine, but also a complex market for healthcare services. Some products enjoy externalities, with the benefits to society exceeding those for individuals (e.g., immunization), and products with no externalities (school maintenance). Strengthening the role of markets is key to improving the delivery of products where externality is not apparent and monitoring is not difficult. Unbundling these products and allowing markets to function is often a better solution in such cases than relying solely on government provision. The examples where markets could do better include, as noted above, school maintenance, the publication of textbooks and the production of medical drugs.

Where markets fail, government intervention, directly through the provision of the service to clients, or indirectly through regulation is important. In these two sectors markets could fail because of information asymmetry, externalities, or income distribution concerns. Suggestions have already been made on how to deal with the first two problems: information asymmetry and externalities. With respect to equity, solutions are needed in particular to overcome the problems of false entitlement in education, the pricing of medical drugs, and the non-differentiated access to subsidized products irrespective of income levels. In education, the voucher scheme, adopted in several developing countries such as Chile and Bangladesh, is one way out. Making drugs available to patients at affordable prices is important, but a pricing/subsidy mechanism should be established to balance the interests of patients and producers. Finally, even if not implemented now, it may be worth considering substituting the food subsidy program with an alternative well-articulated income policy for the lower income groups.

### ***Money***

Money, or public expenditure, can be the glue that ties the above reforms together. The ongoing efforts by the Ministry of Finance to sign performance contracts with eight ministries is a step in the right direction. What the above analysis indicates however is that a much wider

set of reforms is required to maximize the gains from social expenditures. Each reform has important implications for easing the pressure on public finance.

To cite but a few examples, the government could save significant resources if a targeted voucher program is adopted, a new income policy is put in place to replace the food subsidy for all, and if cost recovery mechanisms are followed in the provision of some healthcare and education services. Encouraging the private sector to participate in the provision of health and education services could also ease the pressure on the treasury. Finally, to the extent that reforms motivate public providers to take cost-saving measures, the demand on the treasury for funds will come down. But some of these actions clearly go beyond the purview of the Ministry of Finance. Accordingly, rationalizing public expenditures in the areas analyzed here is a collective action problem, the solution of which requires concerted efforts on the part of various ministries.

## **V. CONCLUDING REMARKS**

The purpose of this paper is to assess the extent to which public expenditure on education, health and food subsidy was effective, efficient, and equitable. Another purpose is to search for the optimal approach to improve and rationalize social expenditure broadly and in Egypt in particular. The key conclusions of the paper are as follows.

First, public expenditure in Egypt improved access to healthcare, education, and food supplies for most Egyptians. There is also evidence that the government is committed to the poor. However, there is still room for improving the effectiveness, efficiency and equity of public expenditures. Also, more and better health and educational outcomes can be attained from the current level of public expenditures.

Second, there are three approaches to rationalize public expenditures and maximize the outcomes of health, education and food subsidy programs: the engineering approach, the industrial organization approach, and the accountability approach. A review of the pros and cons of these approaches leads to the conclusion that the accountability approach is the most comprehensive and most rewarding, but also the most difficult to implement. It involves changing the relationships between policymakers and providers, providers and clients, and citizens and policymakers. At the other extreme, the engineering approach requires a modest

effort, but only involves measures to improve the physical input-output relationship. The industrial organization approach falls in the middle.

Third, and finally, the paper's most important recommendation for Egypt is to shift away from the engineering approach to at least the industrial organization approach. This means fundamentally focusing more on incentives and empowering beneficiaries rather than on changing the mix of inputs and outputs. The paper further offers specific policy recommendations under the headings of "4Ms": motivation, monitoring, markets and money. While these recommendations are meant to serve as ideas for further discussion, it is believed that they have the potential to improve the state of public finance and better health, education and food subsidy outcomes.



## References

- Adams, Richard H. 2000. "Self-targeted Subsidies - the Distributional Impact of the Egyptian Food Subsidy System," *WB Policy Research Working Paper* No. 2322
- Birdsall, Nancy and Lesley O'Connell. 1999. "Putting Education to Work in Egypt," *Growth Beyond Stabilization: Prospects for Egypt*, conference proceedings, the Egyptian Center for Economic Studies, Cairo, Egypt.
- El Baradei, Mona. 2000. "Towards a Pro-poor Educational policy for Egypt," paper presented in the conference on "Socioeconomic Policies and Poverty Alleviation Programs in Egypt," Cairo, 16-17 October 2000.
- El-Zanaty, Fatma and Madiha El Saaid. 2002. "Egypt Household Health Service Utilization and Expenditure Survey: National Survey 2002," for the Ministry of Health and Population, Health Sector Reform Program.
- Galal, Ahmed. 2002. "The Paradox of Education and Unemployment in Egypt," Working Paper No. 67, The Egyptian Center for Economic Studies, Cairo, Egypt.
- Gaumer, Gary, Taghreed Adam, Wessam El Beih, Bhavyalal, Elizabeth Arriaza, and Brad Atkinson. 1998. *Rationalization Plans for Hospital Beds in Egypt*. Partnerships for Health Reform *Technical Report* No. 29, December.
- Institute of National Planning (INP). *Egypt Human Development Report*. Various Years.
- Rannan-Eliya, Ravi P., Claudia Blanco-Vidal and A. K. Nandakumar. 1999. *The Distribution of Health Care Resources in Egypt: Implications for Equity, an Analysis Using a National Health Accounts Framework*: <http://www.hsph.harvard.edu/ihsg/publications/pdf/No-81.PDF>
- Tirole, Jean. 1988. *The Theory of Industrial Organization*. Cambridge, MA: MIT Press.
- United Nations Development Programme, *Human Development Report*, New York: Oxford University Press. Various issues.
- World Bank. 2003a. *World Development Report*. New York: Oxford University Press.
- World Bank. 2003b. *World Development Indicators*, CD-ROM.
- World Bank. 2002. *Egypt - Education Sector Review: Progress and Priorities for the Future*. Volumes 1 and 2, Sector Report No. 24905.
- World Bank. 2001. *Egypt - Social and Structural Review*, Sector Report No. 22397.

World Bank, *Multi-Country Reports by HNP Indicators on Socio-Economic Inequalities*:  
<http://www.worldbank.org/poverty/health/data/statusind.htm>.

World Health Organization, WHO statistics:  
<http://www3.who.int/whosis/country/compare.cfm?language=english&country=EGY&indicator=strOopEOHPctOfTotEOH2000>.