Report No. 24234-EGT

Arab Republic of Egypt
Poverty Reduction in Egypt
Diagnosis and Strategy

(In Two Volumes) Volume I: Main Report

June 29, 2002

Social and Economic Development Group
Middle East and North Africa Region
The World Bank

Ministry of Planning
Government of the Arab Republic of Egypt

Document of the World Bank

Currency Equivalents

(Exchange Rate Effective June 13 , 2002)

Currency Unit	= Egyptian pound (LE)
1 LE	= US$ 0.2167
US$ 1.00	= 4.61 LE

Weights and Measures

1 centimeter (cm)	=	0.394 inches
1 meter (m)	=	39.370 inches
1 kilometer (km)	=	0.620 mile
1 square kilometer (km2)	=	0.386 square mile
1 feddan (fed)	=	0.420 hectare, 1.037 acre
1 hectare (ha)	=	2.470 acre
1 cubic meter (m3)	=	35.310 cubic feet
1 liter (l)	=	1.057 quart
1 liter per second (l/s)	=	0.035 cubic feet per second
1 kilogram (kg)	=	2.205 pounds
1 metric ton (t)	=	2,205 pounds
1 kilowatt (kw)	=	1.360 horse power
Ne or Na	=	English count (= 1.7 millimeters)

Fiscal Year

July 1— June 30

Government of Egypt		The World Bank	
Minister of Planning:	H.E. Osman M. Osman	Vice President:	Jean-Louis Sarbib
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Abbreviations and Acronyms

AAS	-	Analytical and advisory services
AIDS	-	Acquired immunodeficiency syndrome
CAPMAS	-	Central Agency for Public Mobilization and Statistics
CG	-	Consultative Group
CO2	-	Carbon dioxide
CPI	-	Consumer price index
EHDR	-	Egypt Human Development Report
EU	-	European Union
FDI	-	Foreign Direct Investment
FHH	-	Female-headed Household
FY	-	Fiscal year
GDP	-	Gross domestic product
GNI	-	Gross National Income
HDR	-	Human Development Report
H.E.	-	His excellency
HIECS	-	Household Income, Expenditures and Consumption Survey
HH	-	Household
HIV	-	Human immunodeficiency virus
IBRD	-	International Bank for Reconstruction and Development
IMF	-	International Monetary Fund
INP	-	Institute of National Planning
Kg	-	Kilogram
LE	-	Egyptian Pound
LFS	-	Labour Force Survey
LFSS	-	Labour Force Sample Survey
mill.	-	Million
NBE	-	National Bank of Egypt
NGO	-	Non-governmental organization
OECD	-	Organization for Economic Cooperation and Development
P0	-	Measure of incidence of poverty
P1	-	Measure of depth of poverty
P2	-	Measure of severity of poverty
PPP	-	Purchasing power parity
PSU	-	Public Sector Unit
SSR	-	Social and Structural Review
TFP	-	Total factor productivity
UN	-	United Nations
UNDP	-	United Nations Development Programme
USAID	-	United States Agency for International Development
Univer.	-	University
WBI	-	World Bank Institute
WDR	-	World Development Report
WHO	-	World Health Organization

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PREFACE

This is a joint report of the Ministry of Planning, Government of the Arab Republic of Egypt, and the World Bank. Its audience is policymakers and advisors in the Government, as well as civil society at large, and partners in Egypt's development process. The report is the first output from an ongoing process of collaboration between the Government and the World Bank to devise a poverty reduction strategy for Egypt. in particular, this report presents a diagnostic of the extent and determinants of poverty in Egypt in the latter half of the 1990s, as a first analytical step in a complex process that devises a more detailed set of local and sectoral strategies required to tackle poverty reduction.

It draws primarily on data from two surveys: the Household Income, Expenditures and Consumption Surveys (HIECS) conducted by the Central Agency for Public Mobilization and Statistics (CAPMAS) in 1995-96 and 1999-2000. in addition, the study uses national accounts data, as well as other secondary data available from government sources.

This report was prepared by a joint team from Egypt and the World Bank. The main investigators from Egypt were Prof. Heba El-Laithy (principal investigator, poverty profile), Prof. Heba Nasser (analysis of informal sector labor activities), and Dr May Saad (junior statistician/poverty profile). The team from the World Bank comprised of Arup Banerji (team leader), Martin Ravallion and Michael Lokshin (poverty profile), Sara Johansson and Sherine Al-Shawarby (macro/labor analysis), Jamal Al-Kibbi (WBI) and Marie-Huguette Osselyn, Alexandra Sperling and Amira Fouad Zaky (coordination and support).

Initial results from the study, and its methodology, was discussed at a workshop, hosted by the Institute of National Planning, held in Cairo on May 20, 2002. Throughout the process of preparation of this report, valuable inputs and suggestions were received from Mahmoud Abdel-Hai, Sultan Abou-Ali, Christine Allison, Claus Astrup, Jo-Anne Bour, Ibrahim El-Essawy, Olaa El-Hakeem, Usaid El-Hanbali, Sameh El-Saharty, Amin Foad, Mostapha Gafar, Nagwa Ismail, Badr Kamel, Hanaa Kheir-El-Din, John MacGregor, Khalid Maher, Roseleen Mba-Kalu, Ahmed Abdel-Aziz Mohamed, Hamed Mubarak, Deepa Narayan, John Page, Setareh Razmara, Christiane Roehler, Sarosh Sattar, Hoda Sobhy, David Steel, and Ghada Youness. Ana Revenga and Radwan Shaban were the peer reviewers from the World Bank.

For the Government of the Arab Republic of Egypt, the report was written under the general guidance of H.E. Osman M. Osman, Minister of Planning.

At the World Bank, the report was written under the general guidance of Mustapha Kamel Nabli, Chief Economist, Middle East and North Africa Region, and Mahmood Ayub, Country Director for Egypt. The sector manager was Pedro Alba.

The team would like to express its thanks to the many officials and institutions in the Egyptian Government, as well as those from Egyptian civil society, whose cooperation made the report possible. In particular, special thanks are due to CAPMAS's President, General Ahab Mostafa Elwy, and his team for excellent cooperation with the data.

POVERTY REDUCTION IN EGYPT: DIAGNOSIS AND STRATEGY

EXECUTIVE SUMMARY

Poverty reduction is one of the major foci of Egypt's development strategy. One of the six 'critical objectives' of the fifth Five-Year Plan for Egypt is to "reduce poverty and to improve equity in the distribution of income." The Plan looks at poverty reduction in the broadest context, but also explicitly ties it down to a diagnosis based on micro-level statistical analysis.

This report, the first in an ongoing program, presents the results of a statistical analysis of household-level data for the periods 1995/1996 and 1999/2000, as a contribution to the preparation of a comprehensive poverty reduction strategy for Egypt. Before designing the strategy, it is essential to understand the many dimensions of poverty, in as much detail and analytical rigor as possible.

This report, for the most part, uses expenditures or income as an indicator of poverty, and thus only partly captures the multi-faceted nature of being poor. Poverty is experienced in ways that go beyond insufficient income, which is the metric used for most of this Report. As the *2000/2001 World Development Report: Attacking Poverty* points out, poverty is as much the lack of opportunity because of inadequate education, nutrition, health or training, or the inability to find a job that can fully reward someone's existing abilities. It is vulnerability, due to inadequate assets, to sudden widespread economic shocks or even individual shocks such as when bread-winners lose their earning ability. And it is the lack of the power to change the economic and social forces that perpetuate vulnerability. Still, low income or spending is often closely associated with these characteristics, and thus as a valid first cut at determining the nature and extent of poverty.

Egypt has made considerable progress towards improving some of the non-income dimensions of poverty. For example, the country is well on its way to meet the Millennium Development Goals targets (Table A), through improving literacy, mortality and health status. The literacy of females, especially younger females, has increased significantly, with the gender gap in literacy among 15-24 year olds dropping from 28 to 18 percentage points between 1990 and 1999/2000. Therefore, women in Egypt are now better equipped than they were to help themselves out of poverty. Over the same period, health status of Egyptians has improved as well – as proxied by under-5 mortality rates dropping from 85 to 52 per 1,000.

Despite the considerable progress, there is more to be done to ease poverty in Egypt. The work in this report, an analysis of two time periods – 1995/1996 and 1999/2000 – is just one input needed to develop a viable, comprehensive and flexible plan to reduce poverty, and it will be followed by detailed analytical investigations and discussions at the sector levels, before constructing the actual detailed poverty reduction strategy.

Table A: Egypt – Progress Towards Selected Millennium Development Goals

	1990	1995	1999	2000
1 Eradicate extreme poverty and hunger	*2015 target = halve 1990 $1 a day poverty and malnutrition rates*			
Population below $1 a day (percent)		1.7		0.4
Percentage share of income or consumption held by poorest 20 percent		9.8		7.7
Prevalence of child malnutrition (percent of children under 5)	10.4	16.8	10.7	4.0
2 Achieve universal primary education	*2015 target = net enrollment to 100*			
Net primary enrollment ratio (percent of relevant age group)		93.0	92.4	
Youth literacy rate (percent ages 15-24)	61.3	65.7	69.0	69.8
3 Promote gender equality	*2005 target = education ratio to 100*			
Ratio of girls to boys in primary and secondary education (percent)	78.1	76.9	87.7	
Ratio of young literate females to males (percent ages 15-24)	72.1	77.3	81.1	82.0
Share of women employed in the nonagricultural sector (percent)	18.7	16.7	17.1	
Proportion of seats held by women in national parliament (percent)	2.2	2.0		
4 Reduce child mortality	*2015 target = reduce 1990 under 5 mortality by two thirds*			
Under 5 mortality rate (per 1,000)	85.0	58.0	54.3	52.2
Infant mortality rate (per 1,000 live births)	67.8	53.4	43.5	41.8
Immunization, measles (percent of children under 12 months)	86.0	89.0	95.0	
5 Improve maternal health	*2015 target = reduce 1990 maternal mortality by three-fourths*			
Maternal mortality ratio (modeled estimate, per 100,000 live births)		170.0	..	..
Births attended by skilled health staff (percent of total)	37.0	46.0	..	..
6 Combat HIV/AIDS, malaria and other diseases	*2015 target = halt, and begin to reverse, AIDS, etc*			
Prevalence of HIV, female (percent ages 15-24)				..
Contraceptive prevalence rate (percent of women ages 15-49)	47.6	47.9	51.7	56.1
Incidence of tuberculosis (per 100,000 people)	..	..	39.0	..
Tuberculosis cases detected under DOTS (percent)	..	..	25.0	..
7 Ensure environmental sustainability	*2015 target = various (see notes)*			
Forest area (percent of total land area)	0.1			0.1
Nationally protected areas (percent of total land area)		0.8	0.8	..
GDP per unit of energy use (PPP $ per kg oil equivalent)	4.1	4.9	4.9	..
CO2 emissions (metric tons per capita)	1.4	1.6	1.7	..
Access to an improved water source (percent of population)	94.0	..	..	95.0
Access to improved sanitation (percent of population)	87.0	..	..	94.0
8 Develop a Global Partnership for Development	*2015 target = various (see notes)*			
Youth unemployment rate (percent of total labor force ages 15-24)	26.4	34.4	..	..
Fixed line and mobile telephones (per 1,000 people)	30.2	46.7	82.7	107.7
Personal computers (per 1,000 people)	..	4.3	12.0	22.1

Source: ***World Development Indicators database, April 2002***

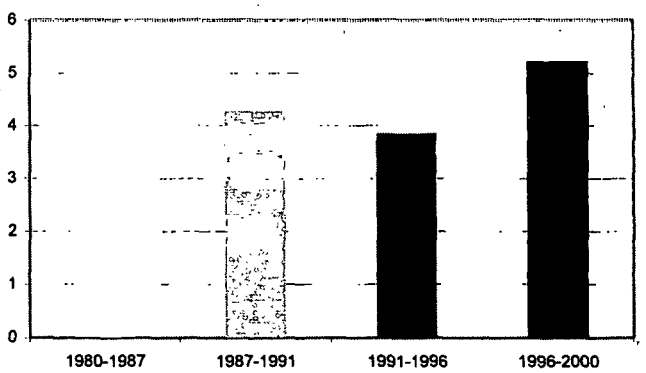
Main Findings: A Changing Picture of Poverty

1. Against the backdrop of rapid economic growth in the second half of the 1990s, average expenditures of households rose, and ***poverty in Egypt fell for the first time since the early 1980s***, to less than 17 percent of the population (10.7 million people).
2. ***Poverty patterns changed from the urban-rural divide that had characterized the past, to a geographical/regional pattern*** – poverty in the four Metropolitan cities dropping to very low levels, poverty high and increasing slightly in Upper Egypt (essentially the governorates south of Cairo) and intermediate levels of poverty in Lower Egypt (the Nile delta region). In the 1995-2000 period, income distribution worsened slightly for Egypt as a whole and in the Metropolitan and Upper Egypt regions, but Lower Egypt actually had pro-poor growth.
3. ***The strongest correlate of poverty was education***, with more than 45 percent of the poor illiterate. Poverty dropped rapidly as education levels improved. Poverty also varied according to sector and type of employment – those working in agriculture and construction had a high chance of being poor, as did seasonal and occasional workers.
4. ***Although Egypt's safety net was helping some of the poor, there is the potential – and the need – for improvement.*** Slowing of growth since 2000 may mean that many of those lifted from poverty have slipped back.

Growth, Opportunities and Poverty

Poverty fell in Egypt during the period 1995/1996 to 1999/2000, by 800,000 people. In terms of percentage of the population, the drop was 2.7 percentage points, for the 'household-specific' poverty line constructed for this report (Box A). The fall was across various measures of poverty – the depth and severity of poverty also fell. It was also across various poverty lines. In fact, the drop was much sharper when the internationally comparable $2/day line is used – from 35.9 percent to 19.8 percent of the population.

Fig A Average GDP growth rates, 1980-2000 (%)



Rapid growth in jobs and incomes in the late 1990s, reversing the patterns of a slowing of growth since 1987, led to the drop in poverty (figure A). This growth was, however, obtained through domestic fiscal and monetary expansion policies that were not fully sustainable. During this period, there was a widening of the budget deficit from 1 to 4 percent of GDP, and credit to the private sector averaged well over 25 percent between 1996 and 1999.

Box A: Determining Poverty Lines in Egypt Based on Household Composition

Many methods have been used to calculate poverty lines for Egypt. This multiplicity of lines (and therefore poverty estimates) can be a cause for controversy. Most of the traditional methods suffer from one or more of four problems: (i) They are calculated for Egypt as a whole, and thereby ignore significant differences in consumption patterns and prices that exist across regions in Egypt; (ii) They do not account for the differing "basic needs" requirements of different household members – young versus old, male versus female; (iii) They use the cost of a hypothetical diet for the poor rather than the actual one; and (iv) They ignore the "economies of scale" within households – the fact that non-food items can be shared among household members (consider items such as electricity, or rent, which are "non-rival" within the household – one person using it does not decrease the consumption of another). Because of this, living in a larger household can result in lower per-person expenditures to maintain a given standard of living.

This study used a methodology that attempts to account for these problems. The estimated poverty lines ensure that regional differences in relative prices, activity levels, as well as the size and age composition of poor households are accounted for.

Using the raw data for 1999/2000, the cost-of-basic-needs method was used to construct absolute poverty lines. The resulting poverty line is household-specific, and is the sum of a food poverty line and a non-food poverty line.

For each household in the sample, the study constructed its own food poverty line, which satisfied the household's minimum nutritional requirements depending on its age, gender composition and location. To define this, a minimum food basket anchored to the minimum requirements of calories for individuals in different age brackets, gender, and activity levels were constructed (using tables from the World Health Organization). Then, food poverty lines were set at the cost of the required calories, by how they are actually obtained in the sample (on average) by the second quintile. This food basket of the second quintile is thus priced using the differing prices for the food in each region. Thus the relative quantities observed in the diet of the poor (here proxied by the second quintile), and the prices they face, were maintained in constructing the poverty line.

The share of non-food expenditure was obtained by fitting Engel's curves of the food share to total expenditure. The food poverty line was augmented by adding, to the food poverty line, the estimated non-food share of those individuals whose total expenditures are equal to the food poverty line.

The recent growth experience was driven equally by the industry and service sectors, and by a strong demand for domestic products – non-tradables (especially construction), tourism, and import-substituting manufactured goods.

Poverty reduction took place through increased productivity and wages in some sectors, and increased employment in others. Although construction was a major provider of jobs, low productivity in the sector meant that these jobs were usually low-paying, and thus poverty was high for workers in the sector. Import-substituting manufacturing, on the other hand, absorbed relatively few new workers, but helped to reduce poverty in the Metropolitan and Lower Egypt areas because of increases in productivity and wages. For seasonal and occasional workers, who were primarily employed in construction as well as in agriculture, poverty headcounts are almost double the national average.

Inequality rose slightly for Egypt as a whole, but the level was still comparable to other middle-income countries. Per capita expenditure of the bottom 20 percent of the expenditure distribution grew at a lower annual rate than the average, indicating that growth in Egypt over this

period was not pro-poor – the non poor benefited more than the poor from economic growth. Yet, Lower Egypt was the only region where growth was pro-poor, both in the rural and urban regions (Figure E later) – the expenditures of the poorer sections of the population grew at a faster rate than did the expenditures of the richest groups.[1] Gini coefficients (measures of inequality) of expenditures for Egypt as a whole increased from 34.5 to 37.8 between 1995/1996 and 1999/2000.

Unemployment was high in urban areas. The survey results show that though only 6 percent of the labor force was unemployed for the country as a whole, the rates were 7.4 percent for Metropolitan, 8.6 percent for Lower Urban, and 10.1 percent for Upper Urban regions.[2] Unemployment among youth (age 15-25) was particularly severe, but this was not correlated with poverty. There was a large gender bias in youth unemployment, with a 4:1 ratio of unemployment to employment for young females, as opposed to a 1:1 ratio for young men.

Gender differences in poverty were small at an overall level, but were significant across regions, particularly in rural areas (Box B).

The slowdown in the Egyptian economy since 2000 raises some concern about the extent of poverty today. Since the time of the survey, growth rates have slumped – a slowdown in domestic stimulus (especially credit) has also slowed the construction industry and tourism has fallen drastically after September 11. Given that poverty in Egypt is shallow, there is a chance that many of those who escaped poverty during the 1995-2000 period may have slipped back into poverty again.

Box B: Gender and Poverty in Egypt

While it is difficult to distinguish between gender differences in poverty at the individual level, female-headed households actually have lower poverty incidence and poverty gaps than male-headed households, especially in rural areas. Female-headed poor households were more likely to be in urban, particularly Metropolitan, areas than were male-headed poor households. This rather surprising result is partly because female-headed households were relatively rare in Egypt – in 1999/2000, just 10.4 percent of Egypt's population lived in households headed by women.

The majority of these poor households, by far, were headed by widows, who may be older and thus with a greater command over assets than the population in general. Widows who had children were even more likely to be poor. For households headed by widows with more than three children, the likelihood of being poor was more than four times the average level in urban areas and more than double the rate in rural areas. Even households headed by widows with one to three children were over-represented among the poor.

There was a gender gap in education, but this was primarily a rural phenomenon. The illiteracy rate for children of age 12-15 years for females was almost twice that of males (15.5 percent and 8 percent), whether the children were poor or not. Yet, in urban areas, illiteracy rates of males were only slightly better than those of females within each poverty group.

On the other hand, there was a strong relation between child labor and the gender of the household head. The share of working children in households with female heads was twice that of those with male heads in urban areas, and 1.3 times in rural areas.

[1] The factors underlying this pattern of pro-poor growth will be investigated in future stages of the activity.
[2] These results, from the household survey, are for those who declare themselves to be unemployed, and so may differ from official unemployment figures.

Regional Disparities

Most of the poor live in Upper Rural Egypt. 5.8 million poor people, out of the 10.7 million, live in this region – and a further 1.4 million poor people live in the urban parts of Upper Egypt (figure B).

The number of poor people, and the share of people who are poor, have gone up in Upper Egypt. This is even as the number and incidence has fallen for Egypt as a whole (figures C and D).

This was the result of a regionally biased pattern of growth during the late 1990s. Most import-substituting manufacturing (which created incomes) and domestic credit-fuelled construction and trading (which created jobs) were in Metropolitan and Lower Egypt, while Upper Egypt had very little manufacturing activity.

Agriculture showed a similar regional bias, with incomes growing and poverty being lowered in Lower Rural Egypt, while the reverse held in Upper Rural Egypt (figure D). This may partly be due to the differing productivity and crop-patterns between the two distinct geographical regions – with Upper Egypt losing production shares in fast growing and high value crops (such as rice) between 1995-1999.

The regional bias may also have been intensified by the effects of initial endowments of human and physical capital in Upper Egypt. Even the returns to capital may have differed – education had relatively low returns in Upper Egypt, where the poor and non-poor had similar educational profiles. And there is a chance of the disparities widening – child labor (measured by children aged 6-15 years not in school) was the

Fig B Distribution of the poor, 1999/2000

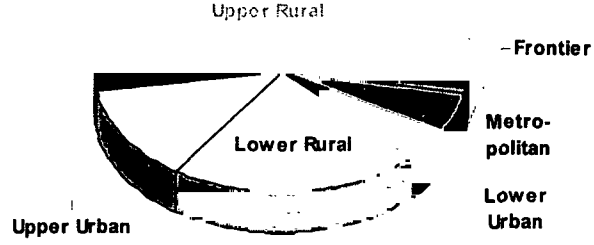


Fig C Number of poor people (millions)

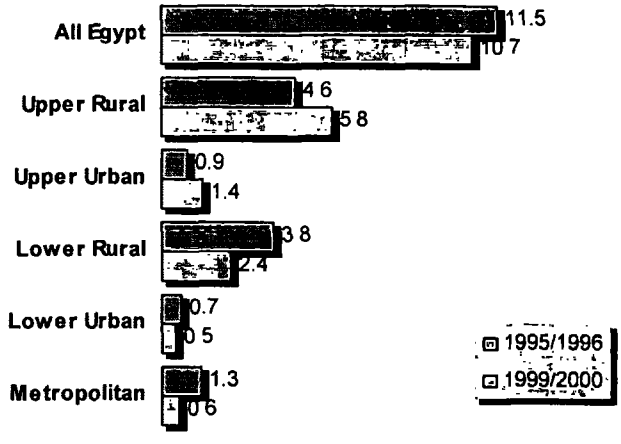
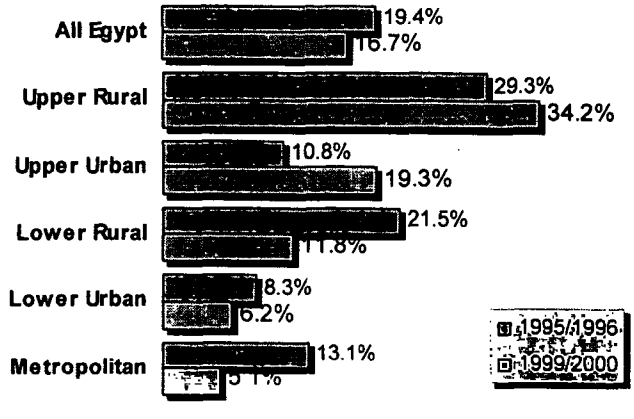


Fig D Share of population that was poor



highest, at almost 8 percent, in the Upper Rural region in 1999/2000.

There were three distinctly different regional patterns in terms of expenditure growth and expenditure distribution between 1995 and 2000, driving the large differences in poverty outcomes among the regions (figure E, next page). Nationally, and in the Metropolitan region, there was an increase in per capita expenditures outweighing a worsening of the income distribution. Essentially, very rapid growth of expenditures – even the poorest decile in Metropolitan Egypt saw their expenditures grow at 6 percent per year – outweighed a small worsening of the distribution.

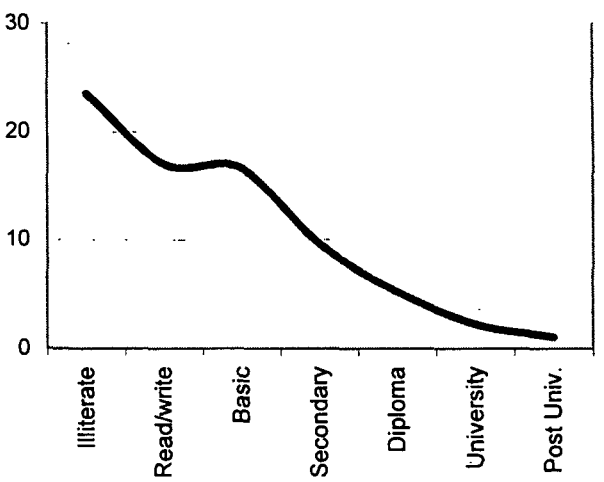
Lower Egypt had a very different pattern of growth, with increases in per capita expenditures going together with a better income distribution to decrease poverty. Growth, therefore, was 'pro-poor', in the sense that the poorer deciles actually gained more in percentage terms than the richest. But in Upper Egypt, a *decrease* in per capita expenditures accompanied a worsening of the income distribution – so that both factors contributed to a worsening of poverty. In general, it was only the very richest people who saw any increase at all in their expenditures over the period.

The Impact of Education

The coverage of education had grown significantly in Egypt by the end of the 1990s – female illiteracy fell by 25 percent since 1980, net primary enrolment was 92.4 percent of the age group in 1999, and youth literacy was 69.8 percent in 2000. But there were still regional differences – in terms of illiteracy, Lower Egypt experienced the largest decline (by over 5 percentage points) between 1995 and 2000, but in Upper Egypt, the drop was just between 1.5 and 3 percentage points. But even there, the improvements in the educational level of the poor were larger than the average.

Educational attainment was the factor that most affected poverty status – more than 45 percent of poor individuals were illiterate. Poverty measures among the urban illiterate persons were about double the rates on average. Differences in poverty headcounts with respect to educational status were wide. In urban areas, it ranged from 16 percent among illiterate people to only 0.4 percent among university graduates. The corresponding rates in rural areas were 26 percent and 6 percent. And households with illiterate heads represented 33 percent of the total population, but accounted for 61 percent of all poor households.

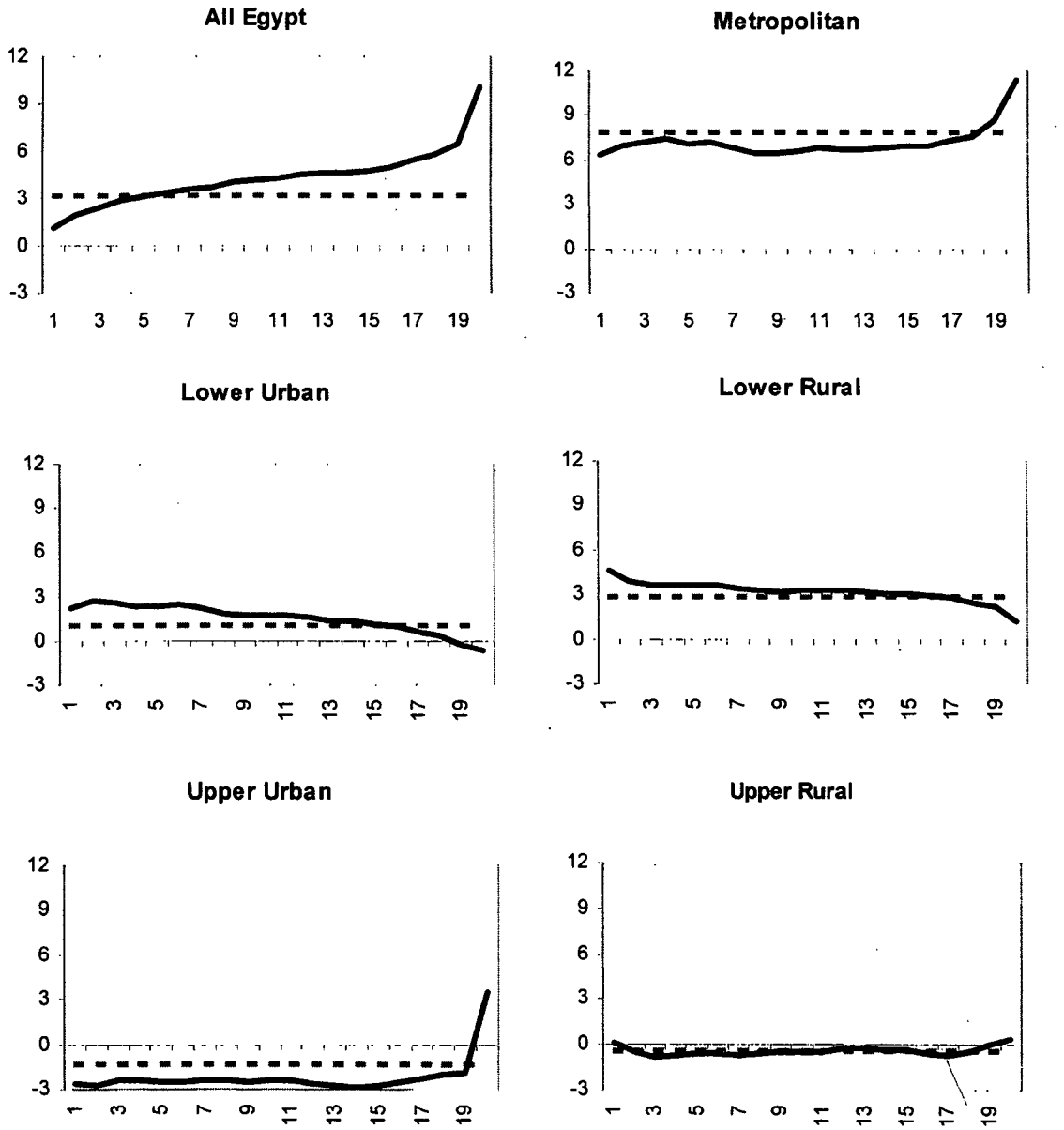
Fig F Poverty incidence by individual education level (%)



Poverty fell sharply as educational attainment grew (figure F), so small improvements in education can lead to large drops in poverty.

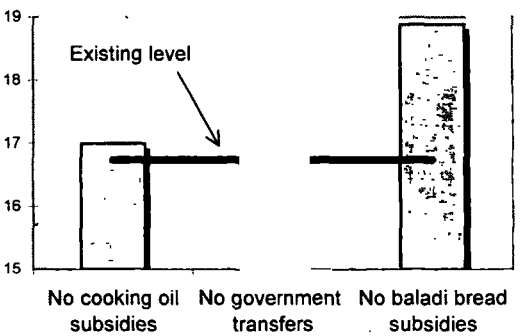
Fig E: Growth in expenditures according to expenditure distribution: 1995-1996 to 1999-2000

Notes: The **horizontal axis** shows the expenditure group arranged in 5 percentile increments from poorest to richest: 1 was the poorest 5 percent of the region's population; 19 was the second richest group, with expenditures between the 90th and 95th percentiles.
The **vertical axis** shows growth in expenditures for the particular expenditure group between 1995-1996 and 1999-2000, in percent.
The **dashed line** shows the mean growth in expenditures between 1995-96 and 1999-2000 for the region.



The strength of the effect of education on poverty changed over the period, influencing regional patterns of poverty reduction. The effect of education on reducing poverty in Metropolitan and Lower Egypt was weaker in 1995/1996. In these regions, therefore, better-educated individuals were relatively more rewarded in 1999/2000 compared to 1995/96. In Upper Egypt, however, the opposite was true. The weaker rewards to education in Upper Egypt were partly responsible for its relatively worse performance in poverty reduction over the period.

Fig G Poverty incidence would increase if existing transfers and subsidies were removed



There was a gender gap in education, but this was primarily a rural phenomenon. The illiteracy rate for children of age 12-15 years for females was almost twice that of males (15.5 percent and 8 percent), whether the children were poor or not. Yet, in urban areas, illiteracy rates of males were only slightly better than those of females within each poverty group.

Child labor (and thus lack of schooling) was more prevalent in poorer households. 3.3 percent of all Egyptian children (age 6-15 years) did not go to school, and therefore were working. The share of working children in households with female heads was twice that of male heads in urban areas, and 1.3 times in rural areas. Children in poor households were more likely to work – 6 percent of children in poor households had to work, compared to 2.5 percent in non-poor households. And there were substantial differences between regions for child labor, with the proportion of working children ranging from 1.8 percent for the wealthier Metropolitan region to 4.7 percent for the Upper Rural region.

The proportion of un-enrolled youth (age 15-19, the secondary school age) was much higher, at 24.2 percent. And unemployment among the youth, of secondary school age and new entrants to the labor force, continued to be a problem, although youth unemployment was not very correlated with poverty.

Poverty perpetuates the inter-generational transfer of low education. Less educated household heads were more likely to have poorly educated household members. The proportion of illiterate individuals living in households with illiterate heads was 78 percent for the poor and 69 percent for the non-poor. In contrast, the proportion of those with university education was 24 percent in poor households with heads who have university education, and 72 percent for non-poor ones.

Protecting today's vulnerable

Transfers were an important component of reported income. They were almost 15 percent of household income in 1999/2000, but they were only one-tenth of the income of the poor. By far the single largest component of reported transfers was those from the government (dominated by pensions).

Private transfers and remittances were, on average, not an important source of income. Even allowing for the fact that they are likely to be under-reported, their magnitude was small, and smaller still for the poor.

The existing social safety net did succeed in reducing poverty. Without the poverty-oriented cash transfers from the government, for example, 350,000 more individuals would have been in poverty in 1999/2000 (figure G).

Of commodity subsidies, the subsidy on baladi bread was the most effective, raising over 730,000 people out of poverty. But it is inefficient as a poverty reduction instrument, as it is provided to all Egyptians regardless of their poverty status. On the other hand, the cooking oil subsidy was the least effective mechanism, lifting less than 170,000 people from poverty.

The cash transfer program is more cost-effective as a way of reducing poverty than are food subsidies, but is handicapped by low overall and individual funding levels and inadequate poverty targeting. Improving targeting of existing transfers can have extremely high payoffs – in the ideal, if there is perfect targeting, the poverty reduction effect of existing resources would exceed the impact of a 3 percent annual growth rate. In the absence of perfect targeting, various targeting schemes can considerably improve the safety net, including regional targeting and categorical targeting, such as to households where the heads have no basic education and live in houses without tap water.

Differential access to some public services made a difference in the quality of life for the poor. While there was no significant difference between poor and non-poor groups in access to drinking water in all urban regions (where the main source of drinking water for the poor is the public water network), the differences in indoor access to water between poverty groups were larger (64.2 percent for the poor and 81.8 percent for the non-poor). Differences across income groups were even wider in all rural regions. Access to sanitation was very low for poor households – only 21.1 percent of the poor lived in houses that were connected to the sewerage system, and the proportion of poor households with access to sanitation through a public network was about half that of the non-poor in the Upper Egypt region.

Elements of a Poverty Reduction Strategy

Given the changing and complex picture of poverty in Egypt, a poverty reduction strategy for Egypt will have to be comprehensive yet flexible. The strategy will have to cope with the shallowness of poverty in much of Egypt and its emerging regional dimension, providing the means for generating growth in incomes such as that in the late 1990s, protecting those who cannot avail of the fruits of the growth, and continuing to build the human capital of the population in order to equip them to achieve better welfare in the future.

The major findings of this report suggest a strategy whose preliminary form is one of five pillars:

1. **Job growth:** Set the economic foundations for more sustainable growth in jobs, productivity and incomes for the poorest groups.
2. **Education:** Ensure better incomes and opportunities for the future, for both men and women.
3. **Regional balance:** Ensure that growing regional disparities in incomes, opportunities and services are reversed.
4. **Safety Net:** Better protect the most vulnerable in society, especially those who are unable to obtain sufficient incomes through the labor market.
5. **Monitoring:** Improve the quality and frequency of data collection and monitoring outcomes, especially at the regional level, to update and adapt the strategy.

Box C: Who were the Poor in Egypt in 1999/2000?

Of every 10 people in Egypt	*But ...of every 10 poor people in Egypt:*
❖ 6 lived in a rural area, and 4 in Upper Egypt	❖ 8 lived in a rural area, and 7 in Upper Egypt
❖ 3 had more than three children	❖ 5 had more than three children
❖ 3 were illiterate, and 4 had basic or secondary education.	❖ 5 were illiterate, and 4 had basic or secondary education
❖ 4 lived in a house where the head of household was illiterate	❖ 6 lived in a house where the head of household was illiterate
❖ Every child aged 6 to 15 years was in school, but 2 children aged 15 to 19 years were not.	❖ There was a chance that one poor child was not in school, and 3 children aged 15 to 19 years were not.
❖ 5 were out of the labor force	❖ 5 were out of the labor force
❖ Of those who worked, one did not receive a wage, 3 were self-employed, and 5 were wage earners	❖ Of those who worked, 2 did not receive a wage, 4 were self-employed, and 4 were wage earners
❖ 3 worked in the government and public enterprises, and 7 in the private sector	❖ 1 worked in the government and public enterprises, and 9 in the private sector
❖ 4 worked in agriculture, 2 in services, and one each in trade, manufacturing, and construction	❖ 6 worked in agriculture, one in services, and one each in trade, manufacturing, and construction
❖ 4 were service sector workers, 2 were industrial workers, 2 were professionals, and one was a manager	❖ 6 were service sector workers, 2 were industrial workers, and none were professionals or managers
❖ In the Metropolitan area, 9 owned a stereo and a color TV, and all owned a gas stove and refrigerator, one owned a mobile telephone, and only one owned an air-conditioner	❖ In the Metropolitan area, 7 owned a stereo and 6 a color TV, 9 owned a gas stove and 8 a refrigerator, but no one owned a mobile telephone or an air-conditioner
❖ In the Upper Rural area, 8 owned a stereo and 4 a color TV, 6 owned a gas stove and 6 a refrigerator, but no one owned an air-conditioner	❖ In the Upper Rural area, 6 owned a stereo and 2 a color TV, 4 owned a gas stove and 3 a refrigerator, but no one owned an air-conditioner
❖ 5 lived in an apartment and 4 in a rural house	❖ 2 lived in an apartment and 7 in a rural house, and 1 shared one or more rooms
❖ 5 walked to work, 2 took the public bus, and one drove in a car.	❖ 7 walked to work, 2 took the public bus, and no one drove in a car.

1. INTRODUCTION

This report is the first volume of a study to provide analytical input into the devising of a poverty reduction strategy for Egypt. By design, it is descriptive rather than prescriptive, in order to supply a sound understanding of the nature and dynamics of income (or expenditure) based poverty in Egypt in the late 1990s. The next stage of the work will proceed to detailed sectoral studies that will build on the aggregative results from this report, to evaluate past and future policies that can help to reduce poverty in Egypt through multi-sectoral interventions.

The study covers the period 1995/1996 to 1999/2000, which was a watershed in terms of Egypt's economic performance. After slowing down steadily in the early 1990s, the Egyptian economy recovered in a policy environment that built upon four pillars: building on the reforms of the early 1990s; slowing down further structural reforms and becoming inward-looking; stimulating the economy through expansionary domestic fiscal and monetary policies; and riding the positive external shock of increased foreign earning, primarily through tourism receipts.

This resulted in a growth pattern that was driven by import-substituting manufacturing, construction and tourism. However, the legacy of such a pattern was the emergence of significant regional divergences, with southern Egypt stagnating while the north grew rapidly. The growth also proved to be unsustainable, and the years since the report has seen a drastic slowdown, as the domestic fiscal and monetary stimulus was curtailed and external receipts fell. Therefore, a flexible poverty reduction strategy will have to build on both the lessons from the growth of the late 1990s and devise a more sustainable growth path that lifts more Egyptians out of poverty.

A. Towards Reducing Poverty in Egypt

Poverty reduction is one of the major foci of Egypt's development strategy. In fact, one of the six 'critical objectives' of the fifth Five-Year Plan for Egypt is to "reduce poverty and to improve equity in the distribution of income."[1] The Plan looks at poverty reduction in the broadest context, but also explicitly ties it down to a diagnosis based on micro-level statistical analysis.

This report, volume 1 of an ongoing study, presents the results of a statistical analysis of household-level data for 1995/1996 and 1999/2000, as a contribution to the preparation of a comprehensive poverty reduction strategy for Egypt. Before designing the strategy, it is essential to understand the many dimensions of poverty, in as much detail and analytical rigor as possible. However, the work in this report is just one analytical tool in the array of investigation that is needed to develop a viable, comprehensive and flexible plan to reduce poverty. It is to be accompanied by evaluations of other (that is, non-monetary) dimensions of poverty, and followed by detailed analytical investigations and discussions at the sector levels to evaluate the efficacy of existing programs in reducing poverty and the feasibility of new programs.

Still, an empirical analysis such as that presented in this report has, in the context of Egypt's poverty reduction strategy, three important functions:

- It identifies the overall scope and distribution of the problem of poverty, and thus indicates the direction and magnitude of the work needed to reduce it;
- It isolates key correlates to poverty, and some of the ways in which they determine and affect the dimensions of poverty – and thus provides guidance and testable hypotheses for the detailed sector-level work that needs to follow it;

[1] The other objectives of the Plan are also closely linked to this objective, and are (i) development of human capability; (ii) employment; (iii) provision of quality services; (iv) gender issues and (v) environment. From Ministry of Planning, Egypt: "Social Development: Achievements and Challenges," presented at the CG meeting held in February 2002.

- It provides the analytical base for the evaluation of some of the public programs existing in Egypt today, and can be used to simulate the effects on poverty of introducing many new programs.

That said, there are two caveats as well about interpreting the results from this report: First, the report primarily looks at monetary measures of welfare – that is, poverty as measured by expenditures or incomes. Poverty is also affected, as discussed in Chapter 2 of the report, by non-monetary measures such as education and health status ('capabilities'), and non-economic endowments such as the degree of 'empowerment' – that is, the ability to change one's fortunes through one's own efforts. These are intrinsically less measurable from the available household expenditure data in Egypt, and are thus out of the scope of this report. However, they need to be kept firmly in mind when designing the actual strategy for poverty reduction.

Second, the results of this report are mostly based on non-panel data from two time periods – 1995/1996 and 1999/2000. Therefore, they are only indicative of the actual state of poverty in Egypt in 2002 and beyond, and it is possible that some of the headline numbers have changed quite significantly as a result of the economic slowdown since the time of the last survey. Still, the correlates of poverty, which is the primary contribution of this report, are generally likely to hold even today, and can form firm foundations for detailed sectoral analysis.

Following this report, a series of sectoral reviews (volume 2 of the overall study) will examine the initial hypotheses presented in this report, and be combined with this report to help develop a comprehensive poverty reduction strategy. The sectoral reports will include specific and detailed analyses of existing programs, and recommendations of sector-specific instruments to reduce poverty.

By design, the report attempts not to be normative – it is a descriptive look at what has happened, not necessarily what* should *have happened. It uses rigorous analytical techniques for poverty analysis from household expenditure data, but then leaves much of the burden of explaining the trends, and the detailed policy prescriptions, for the subsequent sectoral analyses that make up the next phase of the program.

This chapter continues by providing some background on the economic developments that occurred in Egypt during and before the period of analysis – 1995/1996 to 1999/2000.

Chapter 2 gives the details of the 'poverty map' – delineanating who are the poor and where they live.

Chapter 3 provides the poverty correlates – looking at the characteristics of the poor, whether they be related to education, employment, gender, age or asset characteristics.

Chapter 4 offers some broad stories to attempt to explain the results.

Finally, Chapter 5 of the report looks ahead at possible areas of policy interventions and change that emerge from the results of this report, and lays the foundations for the ongoing analytical program.

B. The Egyptian Economy in the Late 1990s: An Overview

Fig 1.1 Average GDP growth rates, 1980-2000 (%)

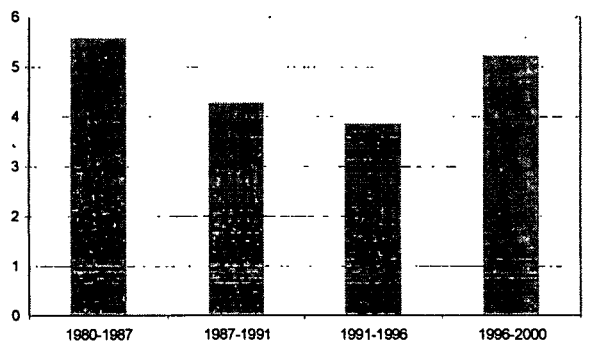
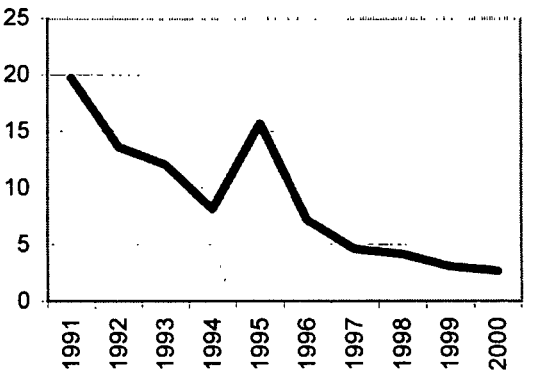


Fig. 1.2 Inflation rate (%)



Egypt experienced rapid economic growth in the late 1990s, marking a trend increase from the end of the 1980s and the early 1990s. Growth averaged over 5 percent per year between 1996 and 2000, with non-oil GDP growth reaching a high of 8 percent in 1999. From the end of the 1980s and the early 1990s, average growth had hovered at only around 3 to 4 percent per year (figure 1.1).[2]

It can be expected that the relative surge in growth rates in the last period would have reduced poverty to a significant extent in Egypt. Generally, *sustained* economic growth results in a reduction of income poverty, with higher growth rates having exponentially greater powers to reduce poverty (Comparator box 1.1). Moreover, for the late 1990s, inflation in Egypt was relatively low and falling, so that the poor were not hit by sharp decreases in real incomes during this period (figure 1.2).

The recent growth performance also displays some specific and interlinked characteristics, which may have played an important role in the resulting changes in the pattern of poverty. Three main points are briefly examined below, and then taken up again in Chapter 4 of the report.

First, underlying the economic growth was a more inward-looking approach to economic policy – and consequently some sectors prospered more than others.

Second, there were also large differences in economic growth at a regional level – with growth centered in northern Egypt and leaving the south – Upper Egypt – lagging.

Third, the growth process slowed considerably

Comparator Box 1.1: Growth and income poverty, 1990-1998

	GDP growth (annual average, %).	Improvement in $1/day poverty rate (% points)
East Asia & Pacific	7.2	12.3
Europe & Central Asia	-2.8	-3.5
Latin America & Caribbean	3.1	1.2
Middle East & North Africa	3.9	0.5
South Asia	5.3	4.0
Sub-Saharan Africa	1.9	1.4

Source: Calculations from World Bank 2000, World Bank data.

[2] Data sources for this chapter, except where noted , are from the World Bank database.

in 2000-2001, with non-oil growth reaching only 2.4 percent in 2000. The impact of September 11 2001 is likely to have further worsened the prospects for a fast recovery.

Sectoral growth patterns

The increase in growth in the late 1990s was, to some extent, the result of a change in the direction of economic policy. In the early 1990s, Egypt implemented a strong stabilization program and took important steps to enhance competition and reduce policy-induced distortions. These policy measures paid off in terms of increased economic growth rates, an initial sharp increase in FDI (foreign direct investment), a reduction in inflation from two to one digit levels, and an easing of tension on the balance of payments.

Fig 1.3 Exports and FDI fell steadily after 1991

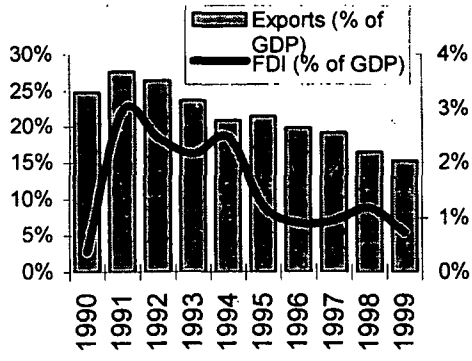
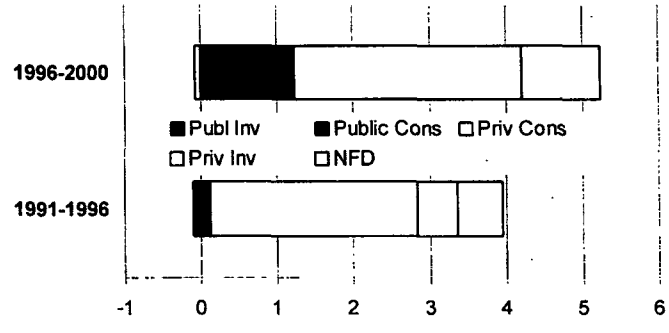


Fig 1.4 The public sector increased its contribution to growth after 1996 (%)



Growth from 1996 onwards, however, was driven by a more expansionary macroeconomic policy, including expansionary fiscal policy (the deficit in the budget sector rose from around 1 percent to 4 percent between 1997 and 2000) and a high rate of growth of credit to the private sector (averaging well over 25 percent between 1996 and 1999, before dropping drastically in 2000). The growth was also helped by favorable external factors such as the effects of the global expansion (resulting, for instance, in higher tourism receipts until 1997). The only counteracting external trend was that of worker remittances, which fell sharply from an average of 6.5 percent of GDP in the 1991 to 1996 period to 4.2 percent between 1996 and 2000.

At the same time, reforms on the structural side slowed, as there were few further steps to reduce trade barriers and liberalize the market more generally. The real exchange rate also appreciated by some 30 percent between 1996 and 2000, as a result of the peg of the LE to the US dollar. Therefore, the Egyptian economy has become more inward oriented – shown by its low and shrinking exports and FDI flows as a share of GDP (figure 1.3).

The public sector increased its contribution to growth, both in terms of investment and consumption, relative to the previous period – reflecting the fiscal expansion (the first two sections of figure 1.4 represent public investment and consumption respectively). Nevertheless, private consumption remained the most important component of growth. In contrast, NFD (net foreign demand) went from contributing positively to growth in 1991-1996 to actually reducing growth in the subsequent period, as the share of exports in GDP fell in response to eroding competitiveness

As a result of the combination of expansionary economic policy in an economy relatively closed to trade, the recent growth was driven by a strong demand for domestic products. These included non-tradables (especially tourism within services, and construction within industry) and import-substituting manufactured goods.

In fact, from the supply side, growth was driven in equal measure by industry (especially import-substituting manufacturing) and services. Compared to the early 1990s, however, the increase in growth rates came from the industrial sector (excluding mining) alone (figure 1.5). This sector expanded at 8 percent per year in real terms, compared to 5 percent in 1991-1996, in effect almost doubling its contribution to total growth. Manufacturing was the by far most important expansionary sector, and accounted for almost 30 percent of total GDP growth. Clearly, however, this was domestically oriented production, as manufacturing exports actually reduced their share of GDP. Finally, the rapid expansion in the construction sector, with growth rates averaging 10-15 percent, mirrored the high growth of credit to the economy.

Fig 1.5 Industrial growth contributed the most to growth since 1996

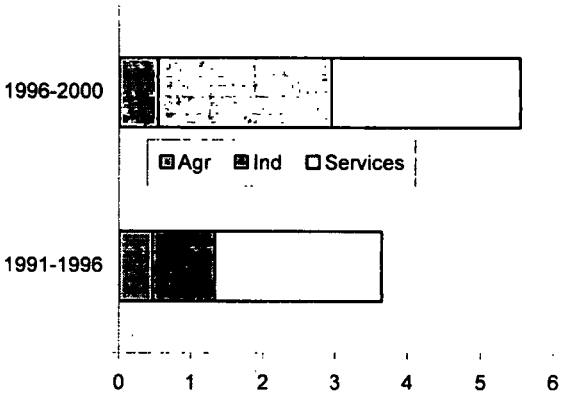
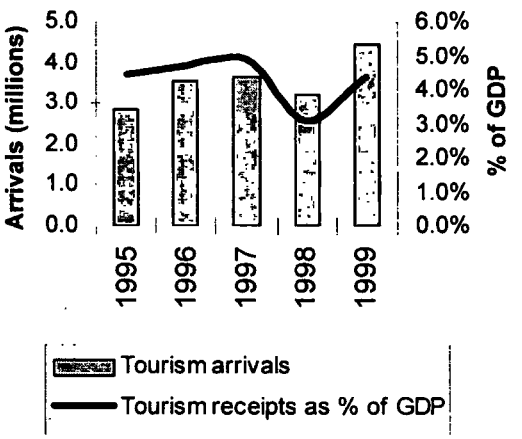


Fig 1.6 Tourism fell after the 1997 Luxor incident, but recovered by 2000



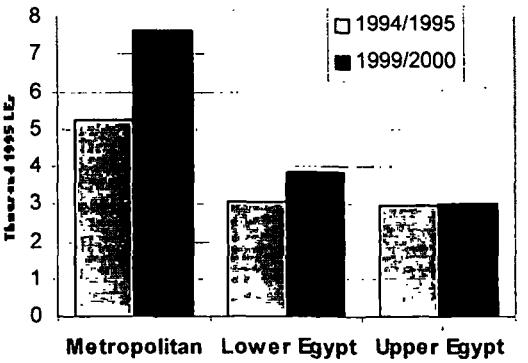
Financial services and tourism drove the growth in services. Its 5 percent per year growth was mostly due to a rapid increase in financial services (by 8.4 percent per year) and in the trade, restaurants and hotels sector (by 5.9 percent per year). Tourism incomes, which are included in the trades sector, saw comparatively good times up throughout the 1990s. Between 1995-1999, foreign exchange receipts from tourism averaged over 4 percent of GDP, and tourism arrivals grew by 11 percent per year. Moreover, European and American high-end tourism accounted for an increasing share of arrivals and tourism nights. The Luxor incident in November 1997 had a strong but relatively short lived impact on tourism income, and appears to have deterred tourists only in the following year (figure 1.6).

Agriculture grew modestly but steadily over the period. It saw annual growth rates hovering around 3 to 3.5 percent. Although this represented a small increase relative to the early 1990s, the agricultural sector lagged decidedly behind the rapid growth of the industry and services sector and contributed only half a percentage point to GDP growth.

Regional divergences

Regional growth patterns varied greatly. Reliable data for GDP across Egyptian regions is not available. However, the estimates done for the Egypt Human Development Report (EHDR) by the INP show a clear pattern of regional inequalities (figure 1.7).[3]

Fig 1.7 Real GDP per capita grew the most rapidly in the Metropolitan region, leading to divergence



During the 5-year period 1994/95 to 1999/2000, four Metropolitan governorates (Cairo, Alexandria, Port-Said and Suez) achieved the most rapid growth rates. Lower Egypt (essentially the region of the Nile delta) saw more moderate growth rates, but vastly outstripped Upper (southern) Egypt.[4] Thus, Upper Egypt's contribution to overall GDP per capita actually fell during this period (see map at the end of the report for locations of the above regions and individual governorates).

Three major results stand out for the 1994-2000 period:

- ***In real terms, there has been almost no growth in Upper Egypt in the period, while growth in the Metropolitan areas has been phenomenal.*** While per capita GNP in the latter grew by 8.9 percent a year, Upper Egypt saw an annual per capita GDP growth of only about 0.5 percent a year. Lower Egypt grew modestly, at a little over 5 percent a year.[5]
- ***Although Lower and Upper Egypt had roughly the same per capita GDP in 1994/1995, stagnancy in Upper Egypt has widened the gap between the two regions.*** In 1994/1995, there were several governorates in Upper Egypt – for example, Giza and Aswan – which were wealthier in per capita terms than all but a few governorates in Lower Egypt. By 1999/2000, although Giza was still relatively well-off, Aswan had been overtaken by a host of Lower Egypt governorates – notably Kafr El-Sheikh and Kalyoubia, which were the fastest growing governorates in Lower Egypt. Per capita GDP in Beni-Suef, in Upper Egypt, actually fell.
- ***Thus, while the Egyptian economy has traditionally been seen in the light of a rural-urban divide, a new regional divergence has emerged in the late 1990s.*** This has important implications for the thrust of both overall development policy and for poverty reduction policies, as programs may need to be re-thought to take this new factor into account.

It should be noted, however, that the distinction between urban and rural areas in Egypt is purely administrative. In reality, with the expansion of cities, there are no clear-cut distinction between urban and rural areas, especially in Lower Egypt.

[3] INP (1996 and 2002). Note that the regional numbers are deflated by the national CPI, because reliable regional CPIs were unavailable. As seen in figure 1.2, for the 1995-2000 period, the national CPI grew by about 24 percent.
[4] Some caution is warranted, however, as the regional GDP numbers from the INP (1996, 2002) suggest a much higher GDP per capita growth rate than do national accounts data.
[5] The magnitude of the differences in the growth rates mean that even if true regional CPIs were significantly different from the national one used for deflating the numbers for figure1.7, the picture of divergence is likely to hold.

Economic Growth and Poverty Reduction Beyond 1999/2000

The economic growth achieved through domestic expansionary policies and external transfers has ultimately proven unsustainable. Since 2000, the economic environment has changed and growth rates in Egypt have plunged. In 2000, credit to the economy was sharply cut in order to defend the exchange rate peg, which was finally relaxed in May. As a consequence, the construction boom ended, with negative growth rates in 1999/2000. Growth in services also slowed down in response to tightening macroeconomic policies.

The prospects for the medium term are now adversely affected by high instability in the region, continuing to affect tourism receipts and FDI. Although there is no final data available for 2001, estimates suggest that a decline in domestic demand will have lowered expansion also in other sectors. In addition, Egypt was particularly hard hit by the aftermath of September 11, 2001, which cut tourism income sharply. In 2002, growth is expected to be around three percent, implying, at best, stagnating per capita growth. In addition, a deteriorating fiscal situation and increasing pressures on the balance of payments has put a limit to degrees of freedom in using an expansionary macroeconomic policy to boost growth.

These reversals in growth trends will undoubtedly have had important effects on poverty and income distribution in 2001 and 2002, the years beyond the results of the household survey. The poverty reduction strategy, therefore, will have to build on the understanding of the patterns that occurred in the late 1990s, and prepare a flexible set of policies that can withstand such economic fluctuations while setting the policy framework for a more sustained, and sustainable, growth path.

2. A POVERTY MAP FOR EGYPT

In 1999-2000, almost 11 million individuals in Egypt (16.7 percent of the population) could not obtain their basic food and non-food needs. The results, using a set of 'household-specific' expenditure poverty lines, are similar for other poverty lines: With the 'per capita' national poverty line traditionally used in Egypt since 1996, 17 percent of the population was poor, and with the $2 a day international measure, 19.8 percent of Egyptians were poor.

While poverty was generally higher in rural Egypt than in urban areas, the greatest differences are geographical. Upper Egypt, both rural and urban, has the greatest incidence, depth and severity of poverty, Metropolitan areas have very low poverty, and Lower Egypt has an intermediate level of poverty.

Poverty decreased between 1995-1996 and 1999-2000 for Egypt as a whole, but regional patterns are significantly different. While poverty declined rapidly in Metropolitan areas, the decline was moderate in Lower Egypt, and poverty actually rose in Upper Egypt.

During the 1995-2000 period, inequality in Egypt as a whole rose slightly (the Gini index rising from 35 to 38), but large increases in per capita expenditure outweighed the effect of this worsening distribution. Once again, the regional variation was significant: In Lower Egypt, growth was "pro-poor" in the sense that both the size and distribution of expenditure improved, lowering poverty; in Upper Egypt, the size and distribution of expenditure both worsened, raising poverty; and in the Metropolitan areas, poverty fell sharply because of large expenditure increases outweighing some worsening in distribution.

Measuring Poverty in Egypt

Poverty trends, 1981-96

Earlier work on poverty in Egypt has shown that poverty levels increased from the early 1980s to the mid 1990s, consistent with the slowdown in growth rates since that time. All these studies used the 'money metric' idea of measuring poverty as the inability to meet a given standard of living, or 'poverty line' (see Tool Box 2.1). They were also all based on the same sets of data – the Household Income, Expenditures and Consumption Surveys (HIECS) conducted by the Central Agency for Public Mobilization and Statistics (CAPMAS) of the Government of Egypt. As shown in table 2.1, there was considerable disagreement among studies about individual headcount numbers (that is, the percentage of the population in poverty), driven by differences in methodologies (including the choice of poverty line)

Table 2.1: Poverty Headcounts in Egypt, various studies (percent of population)

	1981/82	1990/91	1995/96
Urban			
The World Bank (1991)		21.0	
Korayem (1994)	30.4	35.9	
El-Laithy and Osman (1997)	18.2	20.3	22.5
Cardiff (1997)		12.6	30.8
El-Laithy et al (1999)	16.8	26.1	29.0
Rural			
The World Bank (1991)		25.0	
Korayem (1994)	29.7	56.4	
El-Laithy and Osman (1997)	16.1	28.6	23.3
Cardiff (1997)		32.2	55.2
El-Laithy et al (1999)	16.6	34.1	29.0

Tool Box 2.1: Measuring Welfare: Money metric vs. capabilities, and various poverty lines

Measuring the level of poverty in a country or society can be a challenge – if only because of the subjective element involved in determining who was 'poor'. There was a widely accepted idea that for any given society, poverty exists if an individual (or household) was unable to attain a certain standard of living, or 'well-being', that was deemed the minimum acceptable by the standards of that society (Ravallion 1994). But most societies also share a concept of 'absolute' poverty that goes beyond subjective standards. When people lack the basics of nutrition, health, sanitation and housing, they are poor by the principles o any society.

'Well-being' was thus multidimensional, and was driven by multiple deprivations – the lack of food and shelter, but also the lack of incomes and opportunities, of access to services, and of ways to protect themselves against sudden shocks (World Bank 2001). These are, therefore, not driven by purely monetary factors. More broadly, poverty involves the inability to command resources, such as being healthy and literate. Poverty in this latter sense would constitute a lack of 'capabilities', as measured by the UNDP Human Development Index.

The focus of much of this report was on analyzing one dimension of poverty in Egypt – that which can be measured by a 'money metric' indicator. This was defined as the amount of money required – given a set of prices and the assumption of utility maximization – to attain a particular level of utility. In a way, this money proxies for some of the broader dimensions of poverty mentioned above – for example, with sufficient financial resources, households and individuals in Egypt could conceivably purchase better health care and better education for their children.

However, they cannot easily improve their own education or job opportunities, for example, or access good and sufficient public services when they are not provided. Therefore, while the 'money metric' indicator of poverty was a powerful tool to understand the scope of deprivation and allows easy comparison across many dimensions, it should also be recognized that to understand poverty in Egypt in all its complexity, much more work has to be done. At the very least, the money metric welfare indicator needs to be supplemented by other social indicators of well-being, such as infant mortality, school enrolment, and life expectancy at birth.

Absolute poverty lines. By the 'basic needs approach', the poverty line was set as the cost in each sector and at each date of a normative 'basic needs' bundle of goods. For developing countries, a food bundle was typically chosen to reach the predetermined calorie requirement, with a composition that was consistent with the consumption behavior of the poor. This bundle was then evaluated using prices prevailed in each sub group (region) and at each date. The cost of the bundle was known as the food poverty line.

The food poverty line was augmented by an allowance for expenditure on essential non-food goods. Following Engel's law, the non-food allowance can be estimated by identifying the share of non-food expenditure for households whose total expenditure was equivalent to the food poverty line. This defines the total poverty line in terms of those households who had to displace food consumption to allow for non-food expenditures, deemed a minimum indispensable level of non-food requirements.

Relative poverty lines have been more widely used in developed countries. These define poverty in terms of a proportion of the national mean. For instance, the poverty line can be set at 50 percent of the national mean. The poverty line in this sense would be sensitive solely to changes in the relative distribution of welfare.

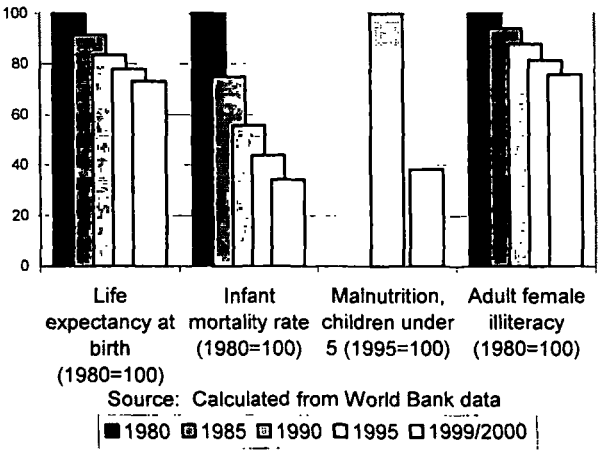
Subjective poverty lines define poverty in terms of individual judgments about what constitutes a socially acceptable minimum standard of living in a given society. This approach was usually based on survey responses to a typical question such as: *"What income level do you personally consider to be absolutely minimal?"* Poverty measures based on the subjective approach tend to be an increasing function of income. That was, the higher the income of the individual surveyed, the higher the standarc of living he or she considers as minimum.

Source: El-Laithy and Lokshin 2002.

and assumptions. But generally, two broad sets of results hold across the studies: One, that there was a difference between the levels of rural versus urban poverty in Egypt, most pronounced in 1990/91;[1] and two, that poverty levels in both rural and urban areas generally showed an increasing trend from 1981 to 1996.

Other non-monetary measures of poverty, however, show deprivation levels for Egypt as a whole improving steadily over time – showing that the government has had more success, over the longer term, in improving non-income measures of poverty. As of 1999/2000, Egypt had achieved major improvements in a range of social indicators (figure 2.1, as contrasted with the worsening poverty indicators until the mid-1990s shown in Table 1.1).[2] Life expectancy at birth, at 67.5 years, was comparable to that in richer countries such as Brazil, Russia and Thailand. The infant mortality rate of 47 per thousand was one-third of 1980 levels. Female illiteracy rate, high at 55.3 percent, was still three-fourth of 1980 levels. Child malnutrition levels had dropped by 60 percent from 1995. In addition, 95 percent of children were immunized against measles, net primary enrollment was 92 percent, and just 4 percent of children were malnourished.[3] On average, Egyptians do not suffer from a lack of food: The average calories consumed per person in 1999/2000 were 2,780 calories per day, which was about 119 percent of the recommended requirements.[4]

Fig 2.1: Non-monetary indicators of deprivation, 1980-2000



Tool Box 2.2: Why use Consumption, not Income?

There are several conceptual and empirical reasons to use of expenditure, as opposed to income, as the basis for the welfare indicator in developing countries like Egypt.

1. Since not all income was consumed, nor was all consumption financed out of income, consumption was arguably a more appropriate indicator if we are concerned with realized welfare. Expenditures better reflect what households can command in terms of current income. They also reflect their access to credit markets or past savings when incomes are low or negative.

2. Whereas poor households are likely to be purchasing and consuming only a narrow range of goods and services, their incomes may well derive from a variety of sources, many of which can be seasonal in nature. Expenditures are therefore a better indicator of longer run living standards than current income, since consumption tends to smooth variability and fluctuations in income streams.

3. A practical problem of using income to indicate welfare lies in the measurement of incomes of people who operate their own business where records of family businesses are often not kept.

4. Survey respondents may be more willing to reveal their consumption patterns rather than their income.

Source: Hentshcel and Lanjouw, 1996.

[1] Except in the work by El-Laithy 1994.
[2] Data for this chapter, except where noted, are from El-Laithy and Lokshin (2002) and background work on the HIECS dataset.
[3] World Bank data.
[4] Calculated from HIECS 1999/2000.

Constructing a Poverty Line for Egypt, 1995/1996 and 1999/2000

The 'money metric' measures of poverty used by the various researchers in Table 2.1 all have used expenditures, as calculated from the various HIECS, to construct a 'poverty line' that differentiates between those who have some adequate level of welfare versus those who do not (see Tool Box 2.2).

All the previous research suffer from one or more of four problems: (i) They ignore the 'economies of scale' within households – the fact that non-food items can be shared among household members;[5] (ii) They are calculated for Egypt as a whole, and thereby ignore significant differences in

Technical Box 2.3: Data and Sampling design for the Report

Egypt has a long history in collecting statistics, dated back to the beginning of the twentieth century. Egypt has conducted household budget surveys since 1957/58, with other surveys being conducted in 1964/65, 1974/75, 19981/82, 1990/91, and 1995/96 and 1999/2000.

This report was based on data from the Household Income and Expenditure Consumption Surveys (HIECS) conducted by the Central Agency for Statistics and Mobilization (CAPMAS, the official statistical agency in Egypt) for the two periods 1995/1996 and 1999/2000. Information was collected from October 1995 to September 1996 for the first survey, and from October 1999 to September 2000 for the second survey. These two surveys present a unique advantage of being comparable and hence the possibility of making relatively robust poverty comparisons, and have a very large sample size, especially for 1999/2000 (Box Table). When necessary, data from these surveys are supplemented by data from the Population Censuses, Labor Force Sample surveys and the Demographic and Health Surveys.

The study has a strong regional focus. Geographically, Egypt was divided into seven regions: Metropolitan, Lower Urban and Lower Rural, Upper Urban and Upper Rural, and Frontier Urban and Frontier Rural (the Governorates comprising each region was listed in the Box Table and shown in the map at the end of the report). Of these regions, results for the two Frontier regions are de-emphasized in the report, because of the small size of both the population and the samples.

Details of the questionnaire and other design elements of the surveys are in Annex 1.

Box Table: Sample characteristics

Region	Governorates	Estimated real GDP per capita, PPP$ (1998/99)*	Sample size (1999/2000)	Sample size (1995/1996)
All Egypt		***4,407***	***47,949***	***14,805***
Metropolitan	Cairo, Alexandria, Port Said, Suez	7,857	14,048	3,095
Lower Egypt Urban	Damietta, Dakhalia, Sharkia, Kalyoubia, Kafr-El Shaikh, Gharbia, Menoufia, Behera, Ismalia	3,974	7,273	1,766
Lower Egypt Rural			10,798	4,570
Upper Egypt Urban	Giza, Beni-Suef, Fayoum, Menia, Assyout, Suhag, Quena, Aswan	3,191	7,034	1,643
Upper Egypt Rural			7,998	3,504
Frontier Urban	Red Sea, New Valley, Matrouh, North Sinai, South Sinai	5,143	399	118
Frontier Rural			399	109

* Real GDP per capita estimates from Egypt Human Development Report 1998/99 (Institute of National Planning, Cairo)

[5] Korayem (1994) and Cardiff (1997), in fact, use the household as the unit of analysis – thus ignoring household size effects altogether. The World Bank (1991), El-Laithy (1994) and El-Laithy and Osman (1997) did not analyze

consumption patterns and prices that exist across regions in Egypt;[6] (iii) They use a hypothetical or 'optimal' cost of the diet of the poor, not the actual expenditure experienced by the poor; and (iv) They do not account for the differing 'basic needs' requirements of different household members – young versus old, male versus female.[7,8]

The 'household-specific' methodology used for this report attempts to account for these problems. For each household in the sample, the report uses the data from the 1995/1996 and 1999/2000 HIECS (Technical Box 2.3) to construct its own food poverty line.[9] This line satisfies the particular household's minimum nutritional requirements depending on its age, gender composition and location. The estimated poverty lines account for regional differences in relative prices, expenditure patterns, activity levels, as well as the size and age composition of poor households (a detailed description of the methodology is in Annex 2). Of course, this also leads to a variation in the appropriate poverty line, depending upon the location and composition of a particular household (table 2.2).

Estimating household- and region-specific poverty lines results in classifying smaller households as non-poor. In general, urban areas in Egypt have smaller household sizes than rural areas, and prices of most non-food commodities and services (and of some food items) are higher in Metropolitan areas. Thus, this set of poverty lines yields wider differences in poverty levels between urban and rural areas

Table 2.2 Estimated poverty lines for 1999/2000 using different approaches (LE)

	Metro-politan	*Lower Urban*	*Lower Rural*	*Upper Urban*	*Upper Rural*
Household specific					
1 elderly	748	690	662	678	665
1 adult male	1,264	1,202	1,155	1,235	1,197
2 adults, male and female	2,242	2,111	2,044	2,153	2,068
2 adults-2 children	4,088	3,747	3,520	3,733	3,487
2 adults-3 children	5,252	4,851	4,647	4,799	4,549
adult female-2 children	3,433	2,933	2,665	2,890	2,691
Average per individual	1,097	1,013	968	1,021	953
Per capita (as used in El-Laithy and others 1999).	1,109	1,015	978	1,031	964
One dollar at PPP/day	515	515	515	515	515
Two dollars at PPP/day	1,030	1,030	1,030	1,030	1,030

Source: El-Laithy and Lokshin (2002). See Annex 2 for detailed methodology of the household-specific and per-capita lines.

within-household scale effects.

[6] All studies except El-Laithy and others (1999).

[7] All studies.

[8] In recent background work for the 2002 Egypt Human Development Report, El-Ehwany and El-Laithy (2001) follow the methodologies in El-Laithy and Osman (1997) to look at the 1999/2000 HIECS data. However, the profile was preliminary work, and thus has major differences with the more comprehensive measures here: (i) it uses preliminary unweighted data; (ii) it does not make regional distinctions in the estimation poverty lines; (iii) consumption patterns for the poor was based on tabulated household-level data; and (iv) a simple model for the estimation of food share was employed to estimate the non food component of the poverty line, without gender and age characteristics.

[9] This household-level data is broadly consistent with the data from the National Accounts. For example, for 1999/2000, per capita consumption, as calculated by the Ministry of Planning from the National Accounts, was 2,998.5 LE (after excluding net imports, government expenditures, investment, taxes etc. from GDP). From the HIECS, per capita expenditures were 2,158 LE.

than do the traditional methods of poverty line calculations.

To illustrate the differences that household composition and location makes, consider a household that spends Egyptian pounds (LE) 1,000 per individual per year. If the household consisted *solely* of an elderly person, this household would not be poor – but if the single person in the household was an adult male, it would be. Again, this level of expenditure would mean that a household of two adults and two children (with total spending of LE 4,000) would be poor if they lived in the Metropolitan areas, but not if they lived in Lower or Upper Egypt. The 'per capita' approach used in earlier work does differentiate between households located in different regions (Annex 2). But it does not account for differences in household composition, and thus would have considered both the elderly person and the adult male with the LE 1,000 expenditure poor in the Metropolitan and two other urban regions, and non-poor in the rural regions.

The 'household-specific poverty line', accounting for essential food and non-food requirements, is used for the analysis of the report. Households consuming at this line would satisfy their essential food and non-food requirements (Tool Box 2.1).

Poverty in Egypt 1995/96–1999/2000

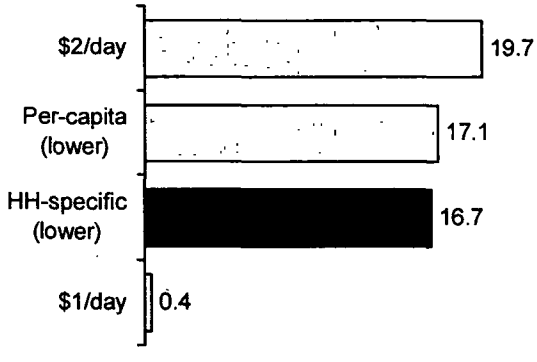
Overall poverty and inequality measurements in 1999/2000

In 1999/2000, the poor in Egypt – those who could not meet their basic food and non-food needs – was 16.7 percent of the population or approximately 10.7 million individuals (figure 2.2). Thus, almost 16.7 percent of the population in Egypt could not obtain their basic food and non-food needs. Using the internationally comparable $2/day measure, poverty incidence was 19.4 percent, relatively low by international standards (Comparator Box 2.5).

Table 2.3 Distribution of expenditures, 1999/2000

Population deciles (poorest to richest)	Percentage of total expenditures
1	3.20
2	4.35
3	5.20
4	6.03
5	6.92
6	8.01
7	9.32
8	11.23
9	14.67
10	31.11

Fig 2.2 Poverty incidence (%), 1999/2000, different poverty lines



Though expenditure distribution among the population was relatively unequal, with a Gini index of 37.8, this is comparable to, or better than, the distribution in other countries at similar levels of per capita national income (Comparator Box 2.5). The bottom 20 percent of the population consumed only 7.6 percent of all expenditure in Egypt, and the richest 20 percent consumed 45.8 percent (table 2.3).

Tool Box 2.4: Poverty Measurements

This analysis uses the standard three Foster-Greer-Thorbecke (1984) decomposable poverty measurements.

The head count index (P0) was a measure of the prevalence of poverty. It denotes the percentage of households who are poor – as defined by the poverty line – as a proportion of total population. This measure was insensitive to the distribution of the poor below the poverty line. This concept can be extended to non-monetary measures as well – e.g., the percentage of the population who are illiterate.

The *poverty gap index* (P1) was a measure of the *depth* of poverty, and it denotes the gap between the observed expenditure (or income) levels of poor households and the poverty line. Assuming perfect targeting of resources (transfers), this poverty gap index indicates the total amount needed to bring all households in poverty up to the poverty line.

The *poverty severity index* (P2) measures the *degree of inequality* in distribution below the poverty line, giving greater weight to households at the bottom of the expenditure (or income) distribution.

To illustrate, consider two hypothetical households – household A, whose expenditure (or income) level places it at 30 percent below the poverty line, and household B, at 50 percent below the poverty line. Suppose that, as a result of a policy change, 10 percent of income was redistributed from household A to household B. P0 would not change, since the redistribution does not allow either household to move up to the poverty line. P1 would not change either, since the redistribution occurred at levels below the poverty line. But P2 would be lowered, as the position of the poorer household would improve.

Comparator Box 2.5: International poverty and inequality comparisons

	GNI per capita 1999 (PPP $)	Poverty survey year	$2/day head-count (%)	Gini coeff.
Kazakhstan	1,250	1997	*15.3*	35
Ecuador	1,360	1995	*52.3*	44
Egypt	**1,380**	**1999/2000**	***19.7***	**38**
Bulgaria	1,410	1997	*21.9*	26
Romania	1,470	1994	*27.5*	28
Algeria	1,550	1995	*15.1*	35
Jordan	1,630	1997	*7.4*	36
Guatemala	1,680	1998	*33.8*	56
Thailand	2,010	1998	*28.2*	41
Turkey	2,900	1994	*18.0*	42

Source: World Bank data

Poverty in Egypt was shallow, with relatively low values of the distribution-sensitive measures P1 and P2. The poverty gap index (P1) was 2.97 percent, implying an annual poverty deficit per capita of just about LE 30 – that is, most poor people were clustered just below the poverty line. This means that if there was perfect targeting of poverty-alleviating transfers, ***it would have required only about LE 350 million per year (about 0.1 percent of GDP in 1999/2000) to lift everyone out of poverty.*** The poverty severity index, P2, was 0.8, which is also relatively low by the standard of middle-income countries.

Table 2.4 illustrates the shallowness of poverty in Egypt, showing the percentage of the population whose expenditures place them within 40 LE above or below the respective poverty lines. For Egypt as a whole, about 2.5 percent of the population was between the poverty line and 40 LE above it. This implies that if the expenditures of these people fell by just 3.3 LE per month, they would drop to below the poverty line (or, put in another way, the overall poverty incidence for Egypt would increase to 19.2 percent). Similarly, if expenditures of those currently within 40 LE below the poverty line increased by 3.3 LE per month, poverty would decrease by 2.3 percentage points, to 14.4 percent of the population.

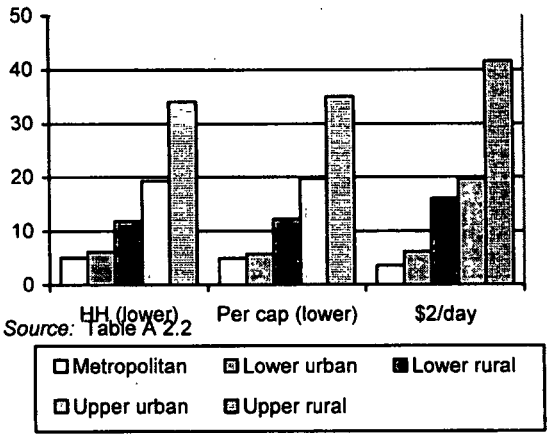
Poverty was the most shallow for the poorest regions in Egypt. Again, Table 2.4 shows that while the Metropolitan area had just 0.5 to 0.7 percent of its population clustered around 40 LE of the poverty line, Upper Rural Egypt, the poorest region, had between 3.8 and 4.3 percent of the population in this range. Therefore, small changes in expenditures can cause potentially large swings in poverty for this region (and, since most of the poor live in this region, for Egypt as a whole).[10]

Using other comparable poverty lines yields consistent results. The 'per capita' poverty line (Annex 2) also gives a headcount figure in the same range, as does the $2/day international measures – all measures of basic deprivation. Finally, there were only about 250,000 people in Egypt in 1999/2000 who were poor by the $1/day standard.

Table 2.4 Population clustered around poverty lines,1999/2000 (%)

	40 LE above poverty line	*40 LE below poverty line*
Metropolitan	0.8	0.5
Lower Urban	1.4	1.1
Lower Rural	2.9	2.2
Upper Urban	2.3	2.0
Upper Rural	3.8	4.3
All Egypt	2.5	2.3

Fig. 2.3: Regional poverty incidence (%): Different poverty lines

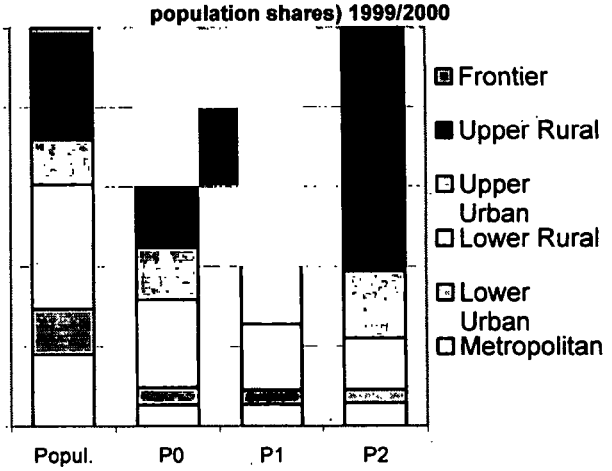


Source: Table A 2.2

Regional Distribution of Poverty in 1999/2000

Poverty in Egypt changed by the late 1990s from an urban-rural phenomenon to a regional one. There were significant differences in poverty and inequality across regions in Egypt, with poverty the worst in Upper Egypt, both rural and urban, and the lowest in metropolitan areas. This holds regardless of the methodology chosen (figure 2.3). These differences in poverty measures across regions are statistically significant, and the ranking of regions remains unchanged for other measures of poverty – depth and severity. Thus, not only do poor households in the Upper Egypt region represent large proportions of their population, but also their expenditure levels, on average, are far below the poverty line. In general, rural areas in all regions have higher poverty measures than their urban counterparts, with poverty incidence being between 77 to 90 percent higher in rural areas.

Fig 2.4 Contributions to poverty (versus population shares) 1999/2000



It is important to note that the picture was similar when using the 'upper' poverty lines, which measure poverty as not having the *average* non-food expenditure of the poor. Again, the Upper

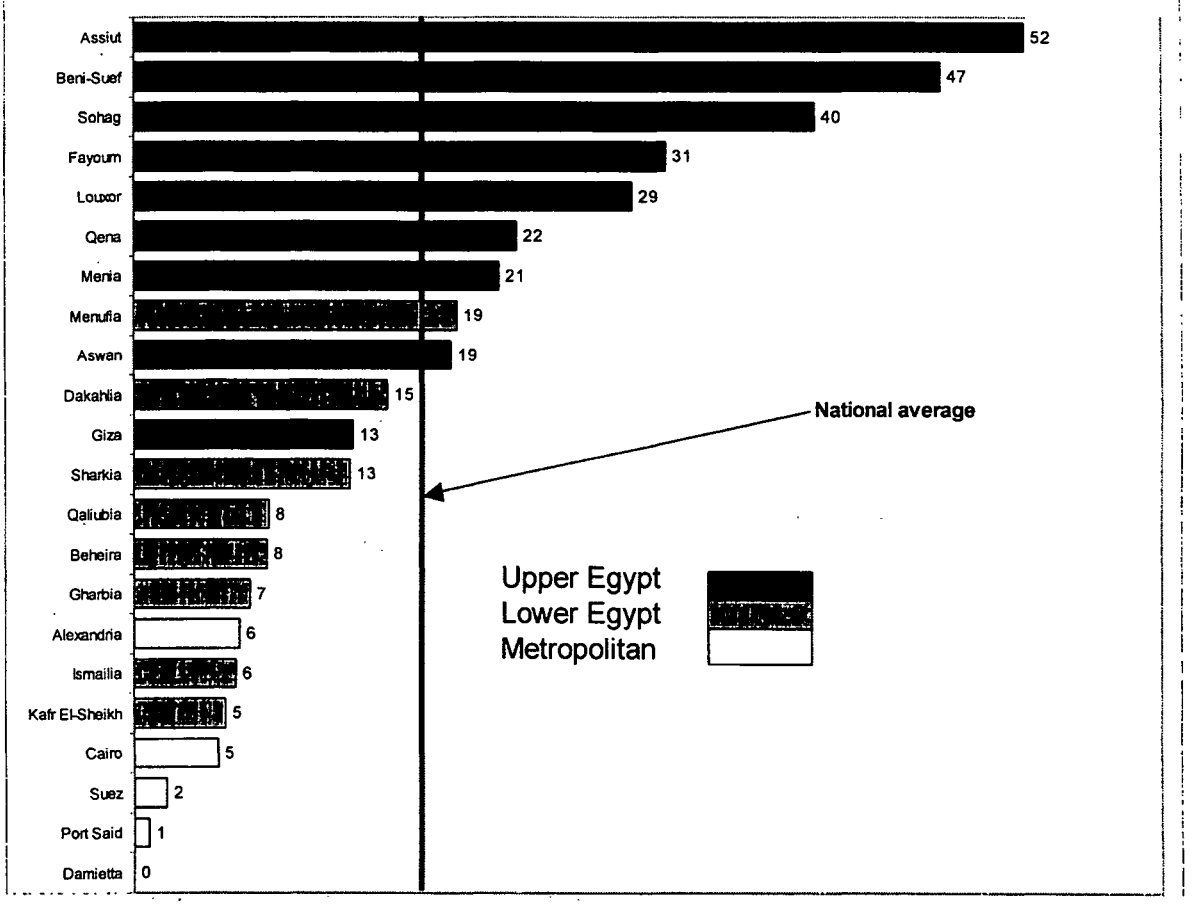
[10] Again, if the value of the poverty line is increased by 5 percent, poverty incidence increased by 3.1 percentage points, with poverty dropping by a greater proportion in rural areas than in urban areas, and in Upper Egypt compared to the other regions (El Laithy and Lokshin 2002).

Rural region has the greatest incidence, depth and severity of poverty – by this measure, 63.5 percent of individuals there were poor. This region also exhibited the highest inequality among the poor, as it has the highest poverty gap and severity indices.

Poverty was still concentrated in rural areas while poverty, particularly extreme poverty, was relatively low in urban areas (figure 2.4 and Annex table A 2.1). 41.5 percent of the population reside in Metropolitan and urban areas, which have just 23 percent of the poor. This goes a long way to explain the relatively low national poverty rate. By contrast, 54.4 percent of the poor in Egypt live in just the Upper Rural region, which has just 26.7 percent of the total population (figure 2.4). Moreover, figure 2.4 shows that the Upper rural region's share increases with the distribution sensitive measures P1 and P2, reflecting the significant depth and severity of poverty in this region compared with the others. Incidentally, this trend, though to a lesser extent, is also shown for poverty in the Upper urban region.

While regional differences dominated the poverty map for Egypt, there were some differences in poverty among specific governorates within each region. For example, while Upper Egypt governorates had generally high incidence of poverty, Giza had a relatively low incidence of 12.9 percent, lower than Dakhalia and Menufia in Lower Egypt (figure 2.5 and Annex table A 2.4). Again, rural Damietta in Lower Egypt had almost no poverty, a lower incidence than even Port Said. The incidence of poverty in Cairo amounts to 5.01 percent, ranking fifth among the urban governorates. All its poverty indices are below the national level. Even though its contribution to national poverty indices was less than its share

Fig 2.5: Poverty Incidence by Governorate, 1999-2000

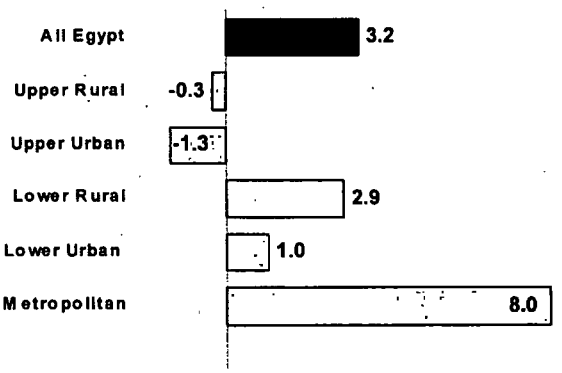


in population, it constitutes 3.87 percent of all poor. By contrast, more than half of the population of Asyut was poor, with correspondingly high measures of depth (P1 of 11.8 percent) and severity (P2 of 3.7 percent) of poverty (Annex table A 2.4).

Changes in Poverty and Inequality: 1995-2000

Poverty decreased for Egypt as a whole between 1995 and 2000, driven by large increases in per capita expenditures, especially in the Metropolitan areas – a break from the long-term trends since the 1980s (shown in Table 2.1). At a national level, the average per capita expenditure in 1999/2000 (evaluated at 1995/1996 Metropolitan prices) was LE 1,599 per year, compared to LE 1,408 in 1995/96 – an annual increase in *real* average per capita expenditure of 3.2 percent (figure 2.6).[11] However, growth was not homogeneous among regions. Average per capita expenditures declined slightly in Upper Rural Egypt (-0.33 percent), while the largest decline was observed in the Upper urban region (-1.32 percent). The annual rate of change in Metropolitan region was remarkable, as average per capita expenditure grew by 7.96 percent.

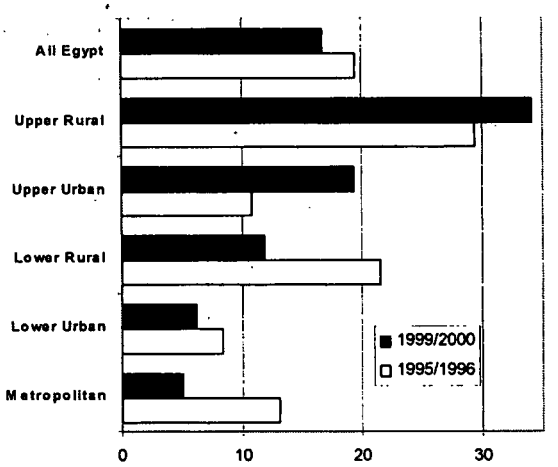
Fig 2.6 Annual real growth in per capita expenditures, 1995-2000 (%)



Changes in poverty

Changes in poverty varied greatly among the regions. The incidence of poverty increased substantially in Upper Egypt over the period, from 29.3 percent to 34.2 percent in rural areas and from 10.8 percent to 19.3 percent in urban areas (figure 2.7). The poverty gap and severity indices followed a similar pattern. On the other hand, both the Metropolitan and Lower Egypt regions saw declines in their poverty measures over the period, with substantial drops in the Metropolitan region (from 13.1 percent to 5.1 percent in terms of incidence) and in the Lower rural region (from 21.5 percent to 11.8 percent).***Within regions, poverty in governorates generally followed the same patterns as the overall region, with a few notable exceptions.*** Two governorates in Lower Egypt – Dakhalia and

Fig 2.7 Regional Poverty Incidence-- 1995/1996 and 1999/2000 (%)



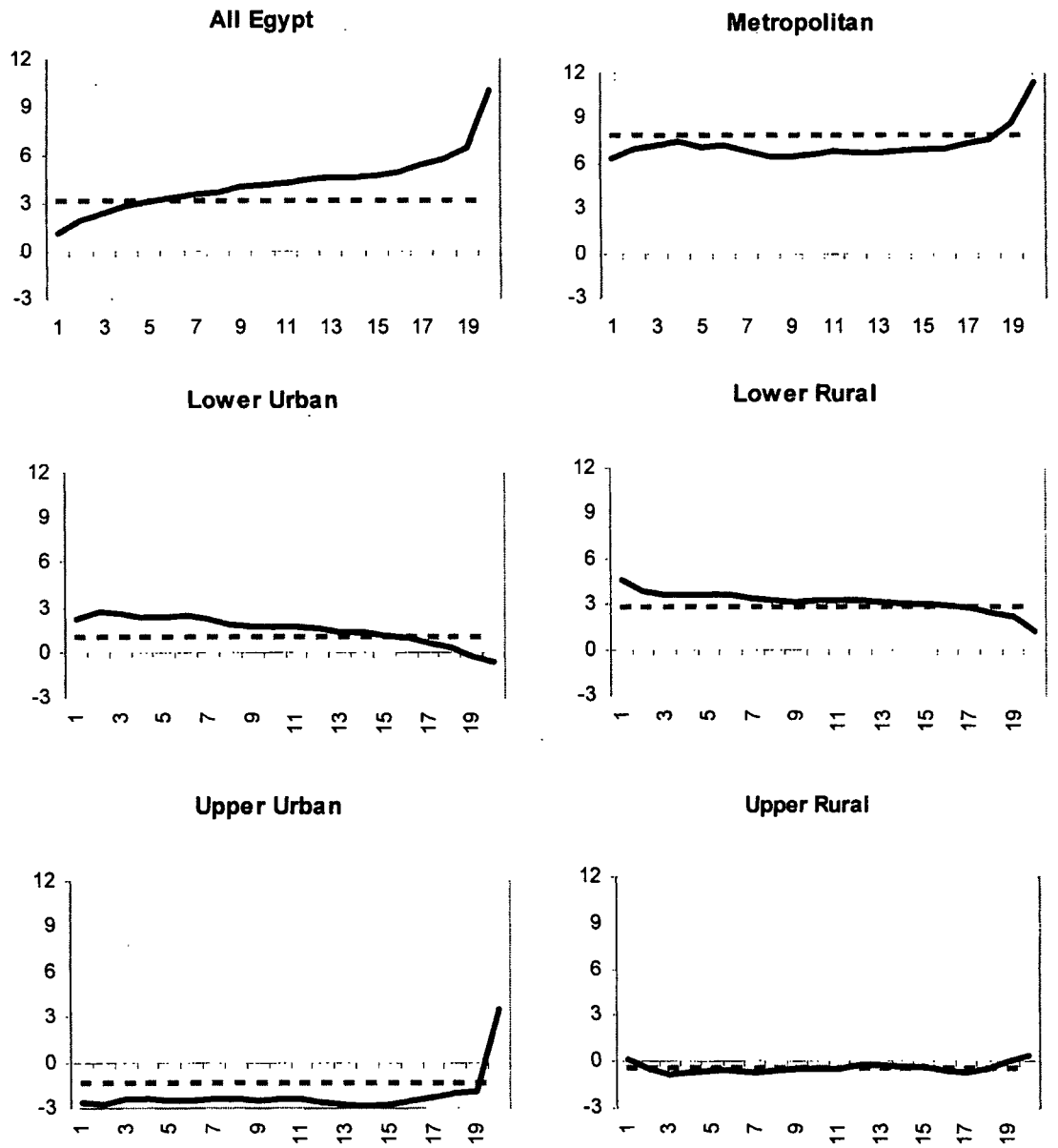
[11] Using HIECS of 1995/95 and 1999/2000, El-Laithy and Lokshin (2002) estimated the cost of the food basket (used to draw food poverty line) and hence evaluated food poverty lines kept constant in real terms. The non-food components of the poverty lines were deflated with the corresponding regionally disaggregated non food CPI, controlling for inter-regional differences in the cost of living and for intra-regional temporal changes in the cost of living.

Figure 2.8: Growth in expenditures according to expenditure distribution: 1995-1996 to 1999-2000

Notes: The **horizontal axis** shows the expenditure group arranged in 5 percentile increments from poorest to richest: 1 was the poorest 5 percent of the region's population; 19 was the second richest group, with expenditures between the 90th and 95th percentiles.

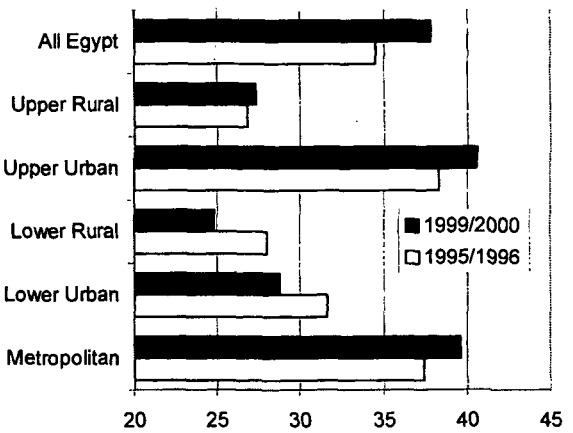
The **vertical axis** shows growth in expenditures for the particular expenditure group between 1995-1996 and 1999-2000, in percent.

The **dashed line** shows the mean growth in expenditures between 1995-96 and 1999-2000 for the region.



Ismailia – saw a worsening of the poverty picture during this period. Again, while most governorates in Upper Egypt had a worsening of their poverty measures, the situation in Menia and Qena improved during the same period (Annex Tables A 2.4). Finally, in the Metropolitan regions, Port Said saw a very small worsening in poverty, but this was outweighed by huge decreases in poverty in Alexandria, where incidence fell from 23.2 percent in 1995/1996 to just 6.2 percent in 1999/2000.

Fig 2.9 Regional Gini coefficients–1995/96 and 1999/2000 (increase=worsening)



Growth and distribution

There were three distinctly different regional patterns in terms of the distribution of this change in expenditures, driving the large differences in poverty outcomes among the regions (figures 2.8 and 2.9). The first was an increase in per capita expenditures outweighing a worsening of the income distribution. At the national level, for instance, growth was not pro-poor – non-poor individuals (above the third decile in the expenditure distribution) benefited more than the poor from economic growth (figure 2.8). Correspondingly, the Gini coefficient increased from 34.5 to 37.8. This was also the pattern in the Metropolitan regions, where the per capita expenditure of those in the lower nine deciles of the expenditure distribution grew at a lower rate than the mean. Still, this relatively unequal picture (with an increase in the Gini from 37.4 to 39.6) was balanced by the fact that even for the poorest decile of the Metropolitan population, per capita increases in expenditure averaged over six percent a year, leading to drastic drops in poverty.

Lower Egypt had a very different pattern of growth, with increases in per capita expenditures going together with a better income distribution to decrease poverty. This pro-poor growth pattern was especially marked in rural areas in the region, where the poorest 5 percent of the population had an annual increase of 4.6 percent in their per capita expenditures, while the richest 5 percent only averaged a 1.2 percent increase. The Gini, correspondingly, fell sharply – especially in rural Lower Egypt, which had a Gini of just 24.8 in 1999/2000, an extremely egalitarian distribution.

The third pattern, found in Upper Egypt, combined a decrease in per capita expenditures accompanying a worsening of the

Technical Box 2.6 Decomposing the regional change in poverty

Over the period 1995/96-1999/2000, the effect of inter-regional population movements was small and caused little reduction in national poverty (-.022 percentage points) (Box Table 1). The reduction of poverty measures in Metropolitan region contributed to the decline of overall incidence (P0) by -1.688 percentage points. However, decreases in poverty measures in the Metropolitan and Lower Egypt regions dominated increases in poverty in the Upper Egypt regions, thereby resulting in a net decline in national poverty. Thus, the reduction in overall poverty was mainly due to the reduction in poverty in Metropolitan and Lower Rural Egypt, and to a smaller extent to reduction in the Lower Urban region.

Box Table 1: Regional contribution to change in poverty between 1995/96 and 1999/2000 (percentage points)

	Intra-region effect	Inter-region effect	Covariance term	Change in poverty
Metropolitan	-1.688	-0.026	0.016	-1.698
Lower Urban	-0.276	-0.001	0.000	-0.277
Lower Rural	-2.911	-0.044	0.020	-2.935
Upper Urban	0.975	0.029	0.022	1.026
Upper Rural	1.135	0.020	0.003	1.158
Total	-2.765	-0.022	0.062	-2.725

Source: El-Laithy and Lokshin (2002)

income distribution – so that both factors contributed to a worsening of poverty. While the average fall in expenditures was low (figure 2.6), the richest groups did have an increase in income, markedly so in urban areas – the richest 5 percent there actually increased expenditures by an average of 3.6 percent a year, while all the other groups saw decreases in expenditures of around 2 percent a year. Correspondingly, the Gini for Upper urban Egypt was the highest in Egypt at 40.6. Rural Upper Egypt, however, continued to enjoy a fairly egalitarian distribution.

Inequality in Egypt, therefore, was mainly the result of inequality within regions rather than between regions. Using the Theil index, 82.1 percent of inequality in 1999/2000 could be explained by within-region variation, while 17.5 percent was explained by between region variation. The corresponding figures for 1995/96 are 87.2 and 13.2 percent.

In summary, the overall decrease in poverty between 1995/96 and 1999/2000 was driven by the sharp decreases in poverty in the northern parts of Egypt, which overwhelmed the smaller increases in Upper Egypt. This is borne out by a regional decomposition of the change in poverty between the two years (technical box 2.6), which shows that inter-regional population changes played a negligible role in lowering poverty.

3. WHO ARE THE POOR?

Education was the single characteristic with the strongest correlation to poverty risk in Egypt. More than 45 percent of the poor population was illiterate, and poverty was highest, deepest and most severe for these individuals. Poverty was inversely correlated with educational attainment, so that even a moderate improvement in education could reduce the ranks of the poor. Differences in poverty headcounts with respect to educational status were wide. In urban areas, it ranged from 16.2 percent among illiterate persons to only 0.4 percent among university graduates. The corresponding rates in rural areas were 26 percent and 6.4 percent. Poverty perpetuated the lack of education, leading to a vicious cycle of poverty and low education. For example, the proportion of illiterate individuals living in households with illiterate heads was 78 percent for the poor and 69 percent for the non-poor.

Occupationally, the highest poverty rates were among those self-employed in marginal and unskilled activities, or those who were unpaid workers. Agriculture and construction were over-represented (compared to their population share) within poor groups. The incidence of poverty among seasonal and occasional workers was more than double the national level. Moreover, the poor were more likely to work in the informal sector, which employed 70.9 percent of them. Unemployment rates were not correlated with poverty for Egypt as a whole, but poverty incidence for the unemployed was higher than average in urban areas.

The incidence of poverty was higher among female-headed households in the Metropolitan and Lower Urban regions. Female-headed households were vulnerable to economic shocks, as their income sources may be irregular or insecure. Widows as heads of household, with children, were very likely to be poor, and thus can be a targeted vulnerable group. Poverty interacted with gender to produce large gaps in educational enrollment among the poor, with poor girls less likely to be in school.

In Egypt, as in other countries, larger families were more likely to be poorer than smaller ones. Child labor was more prevalent in poorer households, and thus in poorer regions. For Egypt, 3.3 percent of children aged 6-15 years were working. Children in poor households were more likely to work, especially in rural regions. Compared to 1995/96, youth labor increased for Egypt as a whole and in all regions except for Lower Urban region.

Poverty status did not greatly affect access to most urban public services. This was, for instance, true for drinking water in all urban regions, where the main source of drinking water for the poor was the public water network. Access to sanitation was very low for poor households – only 21.1 percent of the poor live in houses that were connected to the sewerage system.

Delineating the defining characteristics of the poor in Egypt is an essential first step towards an appropriate reduction poverty strategy. Accordingly, this section provides a profile of the poor – beginning (in section A) with how educational attainment affects poverty, going on to how poverty is affected by employment characteristics (unemployment, type of employment and sector of activity) in section B, household size and composition in section C, followed by the poverty profiles according to gender, and an assessment of the vulnerability of children and youth. The chapter concludes by examining the poverty correlates of access to sanitation and transportation, and housing conditions.

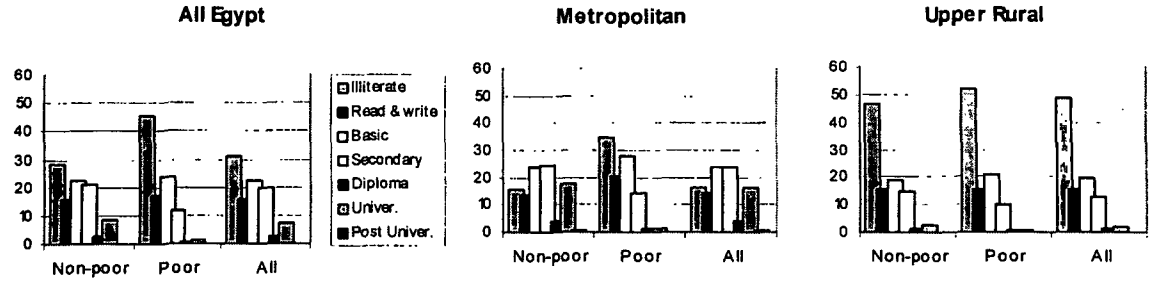
A. Education and Poverty

Education was the strongest correlate of poverty in Egypt, determining the command of individuals over income earning opportunities through access to employment. This correlation between education and welfare has important implications for policy, particularly in terms of the distributional impact. This section discusses the educational characteristics of the poor, focusing on their educational attainment and school enrollment.

Educational Attainment

In 1999/2000, two-thirds of the population in Egypt had basic education or lower. The proportion of illiterate individuals (aged ten years and above) in the total population of Egypt was 31.1 percent, while 38.7 percent had lower and primary education, and only 7.5 percent were university

Fig 3.1 Individual Educational Profile, 1999/2000: Three pictures



graduates (see 'all' in the first panel of figure 3.1, table 3.1a, and Annex table 3.1). This pattern was more pronounced for the education levels of the head of household.

There was considerable progress in reducing illiteracy, with a 4 percent decline in illiteracy rates between 1995/96 and 1999/2000; but the decline was not uniform among regions, or between the poor and non-poor within each region. Lower Egypt experienced the largest decline (by over 5 percentage points), but in Upper Egypt, the drop was just between 1.5 and 3 percentage points. But even there, the improvements in the educational level of the poor were larger than the average. In the Metropolitan region, however, while the number of poor people decreased sharply, the illiteracy rate among those who were poor in 1999/2000 actually increased, by about 5 percentage points.

Poverty was inversely correlated with educational attainment, so that even a moderate improvement in education could reduce the ranks of the poor. The great majority of the poor had only primary level education or no education at all – 86.2 percent of the poor population had basic education or less, while only 1.1 percent had university education. The first panel of figure 3.1 shows that while the profile of the non-poor were similar to that of the entire population, there was a remarkable difference in

Table 3.1a: Educational attainment by poverty status, All Egypt, 1999/2000

	Illiterate	Read & write	Basic	Secondary	Diploma	University	Post University
Individuals							
Non-Poor	28.4	15.9	22.5	21.3	2.9	8.8	0.3
Poor	45.7	17.0	23.4	11.9	0.8	1.1	0.0
All	31.1	16.1	22.6	19.8	2.6	7.5	0.3
Household Heads							
Non-Poor	32.9	23.4	8.4	17.9	3.7	13.0	0.7
Poor	61.1	24.0	5.5	7.4	0.9	1.1	0.0
All	37.6	23.5	7.9	16.1	3.3	11.0	0.6

Source: Annex Tables A 4.1 and A 4.3

Table 3.1b: Poverty Measurements by Educational Attainment, All Egypt, 1999/2000

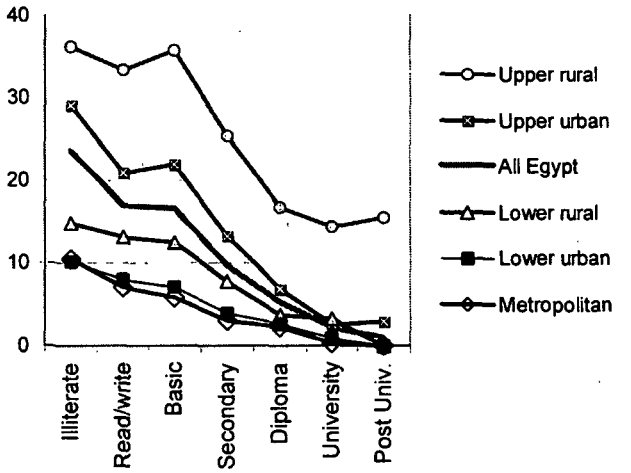
	Illiterate	Read & write	Basic	Secondary	Diploma	University	Post University
Individuals							
P0	27.2	17.1	11.6	7.7	4.6	1.7	1.3
P1	5.1	2.9	1.9	1.1	0.7	0.3	0.3
P2	1.4	0.7	0.5	0.2	0.2	0.1	0.1
Household Heads							
P0	23.6	17.0	16.6	9.7	5.3	2.3	1.1
P1	4.4	2.9	2.8	1.6	0.8	0.4	0.2
P2	1.2	0.8	0.7	0.4	0.2	0.1	0.0

Source: Annex Tables A 4.2 and A 4.4

the picture for the poor.

There were significant regional variations in educational attainment and its correlation with poverty. In fact, the second panel of figure 3.1 shows that the similarity between the general profiles of the non-poor and the entire population also held for Metropolitan areas – with the profile of the poor significantly biased towards lower levels of education. The third panel shows an interesting contrast for Upper Rural Egypt – while there were a higher proportion of illiteracy among the poor, otherwise the general profiles of the poor and non-poor do not differ very much. Essentially, education seems to be a weaker driver of poverty in Upper Rural Egypt.

Fig 3.2 Regional poverty incidence by individual education level (%)



Education played a more important role in urban areas in obtaining adequate income and hence in averting poverty. Poverty was highest, deepest and most severe for illiterate individuals and for those with illiterate household heads (figure 3.2, Table 3.1b) at every regional level. But while poverty incidence for illiterate individuals was almost double average poverty rates in urban regions, in rural regions it was higher by just about three percentage points than average (Annex Table A3.2).

The strength of the effect of education on poverty changed over the period, with significant regional variation. While the general relationship between poverty measures and education levels for 1995/96 was similar to that of 1999/2000, the effect of education on reducing poverty in Metropolitan and Lower Egypt was weaker in the earlier period. In these regions, therefore, better-educated individuals were relatively more rewarded in 1999/2000 compared to 1995/96. In Upper Egypt, however, the opposite was true. The weaker rewards to education in Upper Egypt were partly responsible for its relatively worse performance in poverty reduction over the period.

There was a strong relationship between the education status of the head of household and that of the household members, and the effect was slightly larger for the poor. At the national level, 71 percent of illiterate individuals (and 78 percent of illiterate poor individuals) belonged to households whose head was illiterate. On the other hand, 57 percent of illiterate individuals (and 58 percent of poor individuals) lived in households with illiterate heads. Individuals at every other level of education (except basic education) mostly lived in households whose heads had the same educational attainment (appendix tables 3A and 3B at end of chapter). But there were significant differences in the percentages of matched educational status between the poor and non-poor, with a higher percentage in the illiterate category for the poor vis-à-vis the non-poor, and lower percentages in every other category.

Poverty perpetuated the lack of education, leading to a vicious cycle of poverty and low education. The proportion of illiterate individuals living in households with illiterate heads were 78 percent for the poor and 69 percent for the non-poor – indicating that even if a non-poor head of household was illiterate, household members have a greater chance of being educated than if he or she was poor. In contrast, the proportion of those with secondary education was 21 percent in poor households with heads who have secondary education, and 43 percent for non-poor ones. For university education, the difference in proportions was even larger, at 24 and 72 percent. This shows that poverty inhibits the transmission of education. This can be partly due to malnutrition and poor sanitary conditions, and thus the children's susceptibility to diseases, and partly due to the fact that children may have to drop out of school early to join the labor market.

B. Employment Characteristics

Employment and Unemployment Status[1]

The poor had lower labor participation rates overall than did the non- poor. This result held nationally (34.6 percent versus 37.8 percent respectively) and at every regional level. In fact, differences between the participation rates of the non-poor versus the poor were more than 6 percentage points in every region except for Lower Rural Egypt, where it was still almost 4 percentage points (Annex Table 3.11). This was despite large increases in participation rates from 1995/1996 – by 6.5 percentage points for the poor and 7.1 percentage points for the non-poor. The lack of ability of household members to participate in income-generating activities, therefore, was an important explanation for poverty.

Comparator Box 3.1: International unemployment rate comparisons

	GNI per capita 1999 (PPP $)	Year	Unemployment as % of labor force
Kazakhstan	1,250	1996-98	13.7
Ecuador	1,360	1996-98	11.5
Egypt	**1,380**	**1999/2000**	***6.0***
Bulgaria	1,410	1996-98	14.4
Romania	1,470	1996-98	6.3
Algeria	1,550	1996-98	28.7
Thailand	2,010	1996-98	3.4
Turkey	2,900	1996-98	6.2

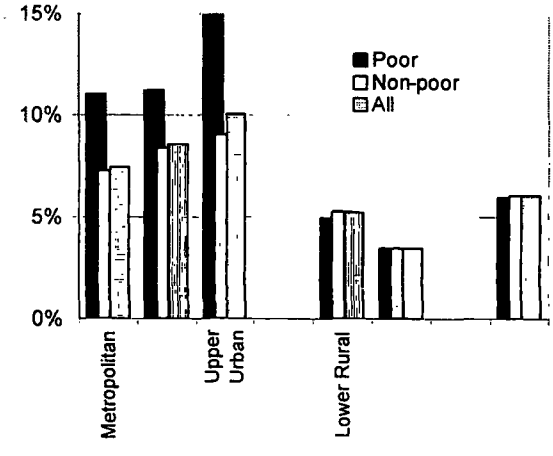
Source: World Bank data. Note: 1996-98 refers to latest available year in the range

Unemployment rates fell between 1995/96 and 1999/2000 for Egypt as a whole, driven by drops in rural unemployment. Overall, the unemployment rate was about 6 percent in 1999/2000, down from 7.8 percent in 1995/1996. This is low by the standard of many middle-income countries (comparator box 3.1). But the rate actually rose in the Metropolitan and Upper Urban regions (from 6.7 to 7.4 percent, and from 8.9 to 10.1 percent respectively), while falling sharply in the rural areas and the Lower Urban region.

Unemployment rates were not correlated with poverty for Egypt as a whole, but this masked urban-rural differences. In rural areas, being unemployed was both much less likely and less of an option for the poor – families usually would have those without work helping in agricultural activities, often as unpaid labor.

The unemployment rate for the poor ranged from 14 percent in Upper Urban region to 11 percent in Metropolitan region in 1999/2000, while the corresponding rates for the non-poor ranged from 9 percent to 7 percent (figure 3.3). The poor versus non-poor differences were similar in 1995/1996. In both years, the unemployed in the Metropolitan area had the highest incidence and depth of poverty, while in the other urban regions, the incidence was the highest

Fig 3.3 Unemployment rates, poor vs. non-poor, 1999/2000

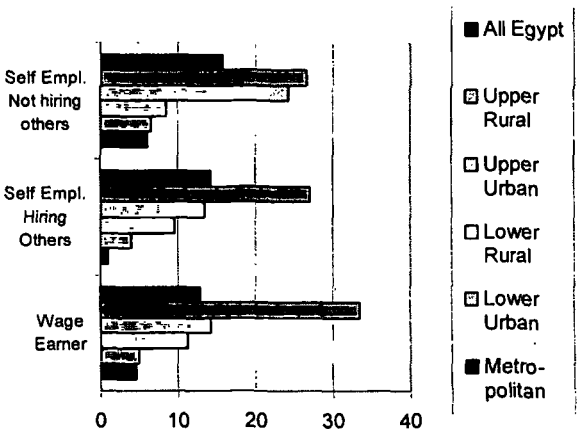


[1] This section is based on results detailed in Annex Tables A3.11 through A3.36 for 1999/2000, and Annex Tables A4.11 through A4.36 for 1995/1996.

among unpaid workers. Rural areas, on the other hand, had much lower unemployment rates for both the poor and the non-poor, and the incidence of poverty among the relatively few who were unemployed was lower than average.

In rural areas, unpaid laborers were a much larger group than the unemployed and the category most stricken by poverty. In Upper Rural Egypt, for example, they were 24.2 percent of the labor force (versus 3.4 percent for the unemployed) and had a poverty incidence of 35.3 percent as against 31.3 percent for the unemployed (Annex Tables A3.11 and A3.12). And, in 1999/2000, 29 and 27 percent of the poor in Lower Rural and Upper Rural regions were unpaid workers, compared to 17 and 24 percent of the non-poor, respectively.

Fig 3.4 Poverty incidence among those earning, 1999/2000



In general, wage earners were less poor. 49.4 percent of employed individuals in 1999/2000, and 54.2 percent in 1995/1996, were wage earners, by far the largest employed group. Yet, the incidence (and, except in Upper Rural Egypt, the depth and severity) of poverty among them was below the average for the given region (figure 3.4). For Egypt as a whole, 12.9 percent of wage workers were poor, compared to 16.7 percent of the population, and the share of wage earners among the poor declined between 1995/96 and 1999/2000.

In urban areas, there was a distinction within the self-employed category – the self-employed but not hiring others were among the poorest workers, and those self-employed who do hire others were among the least poor. The self-employed who did not hire others (usually small traders and unskilled and occasional laborers) had poverty measures above the regional average in urban areas (for example, an incidence of 24 percent versus the average of 19 percent in the Upper Urban region, figure 3.4). The share of this category in the workforce, and among the poor, also increased between 1995/1996 and 1999/2000.

By contrast, those of the self-employed who did hire others (and thus, by implication, were successful enough to run larger operations) were among the least poor in urban areas – with only one percent of them being poor in the Metropolitan region, and 13 percent even in the poor Upper Urban region. In rural areas, the self-employed category in general (whether hiring or not hiring other people) was more common; this was mostly because rural residents were primarily engaged in agriculture, which was recorded as self-employment. For both categories, poverty measures were lower than average in rural Egypt.

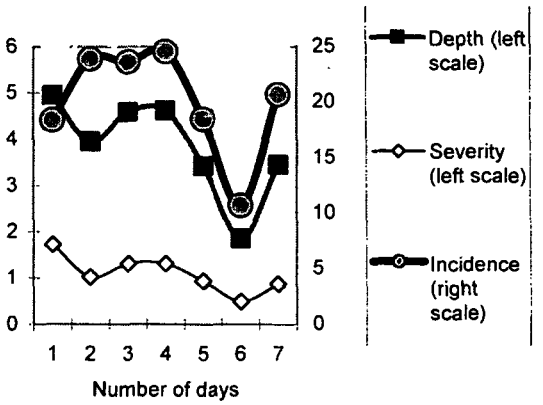
Most household heads in Egypt were employed, with a majority being wage earners, and a further 38 percent self-employed. Individuals who lived in households with working heads represented 90.4 percent of total population in 1999/2000, with the percentage being higher in urban than in rural areas and for the poor compared to the non-poor. The proportion of working heads was the highest in the Metropolitan region and the least in the Upper Rural region. Poverty measures by employment status of the household heads had a similar pattern as among individuals (Annex tables A3.13 and A3.14).

Type of employment, and number of working days

Although, at the national level, 90.5 percent of employed individuals have permanent work, only 83 percent of the poor had permanent jobs. Occasional workers were more represented among the

poor (14.7 percent of the poor versus just 5.8 percent of the non-poor). This pattern held for each region, with wider gaps in Upper Egypt. Seasonal workers, though relatively few in number (0.25 percent of workers), were by far the likeliest to be poor – and in Upper Rural Egypt, over half of them were poor. For every region, the likelihood of poverty for a person engaged in casual or seasonal work was almost double the rate in the population as a whole.

Fig 3.5 Poverty measures by no. of days of work, 1999/2000



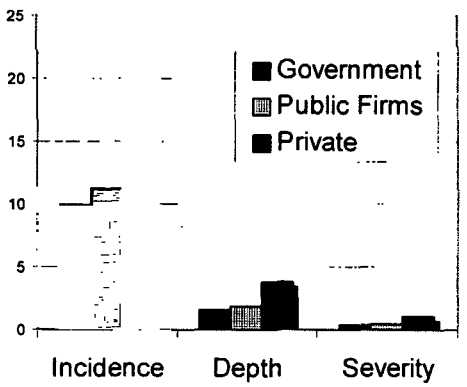
Half of the poor in Egypt worked seven days a week, compared to 35 percent of the non-poor, but poverty was also a result of not finding employment for enough days. But most of the non-poor (54 percent) and most of both the poor and non-poor in urban areas worked six days a week. The poverty incidence, on the other hand, was the highest for those working seven days a week (20.7 percent) or those working two to four days (around 24 percent). But even when working seven days a week, the poor work with low returns; this was reflected in the poverty rate among individuals who work seven days a week, which was higher than the national average by 5 percentage points. Poverty measures were also higher than the average for workers who work less than five days a week (figure 3.5). This corroborates the finding that the poor in Egypt were engaged in low-productivity occasional jobs.

Sector of Employment

While employment was dominated by the private sector in 1999/2000, especially in rural areas, private sector workers were also most likely to be poorer than public workers (figure 3.6). At the national level, 72 percent of employed individuals worked in the private sector, 23 percent worked for the government and 4.5 percent in public sector enterprises. Private sector employment was most prevalent in the Upper Rural region, with 85 percent of employment. By contrast, the Upper Urban region had the highest share of government and public sector work, with 44.6 percent of all employment. Since most government and public sector jobs were in urban areas, government employment was not so relevant for determining (or reducing) the extent of rural poverty.

Between 1995/1996 and 1999/2000, the share of government employees fell by about 2.7 percentage points. This was mostly due to decline in government employees in rural areas, although the share of government employees in urban areas declined slightly as well. The smallest changes in the shares of various sectors were in Upper Egypt and in the poor group within Upper Egypt, indicating less mobile employment in the region.

Fig 3.6 Poverty measures by sector of employment, 1999/2000



At the national level, the poor were over-represented in agriculture, mining and construction. About 57 percent of poor working individuals were in agriculture (as against 39 percent for the entire population) and poverty incidence was by far the highest, at 22 percent, in agriculture. Mining and

Technical Box 3.2: The informal sector and the poor

The poor were significantly more likely to be engaged in informal sector employment in Egypt. This is because the poor cannot afford to stay unemployed, and so have to accept any job opportunity available, even with poor wages and working conditions.

There are many different definitions of informality in the labor market. Banerji (1995) categorizes informal sector workers into three "broad, largely overlapping groups": *evaders*, who work in activities able to avoid government taxes and regulations, *low income workers*, including the self-employed, and *owner-entrepreneurs* with small-scale operations (roughly corresponding to the 'self-employed hiring others' category in this study).

El-Laithy and Lokshin (2002) uses the HIECS data to define informality in this spirit, excluding all individuals who work in the government, public, joint venture or foreign sectors, or who are professionals, have managerial work or are clerks, and who have permanent jobs. The remainder, including all agricultural and casual workers, is deemed informally employed.

They find that 83 percent of the poor were engaged in informal employment in 1999/2000, as opposed to 67 percent of all workers in Egypt. This difference held for all regions, but was especially high in urban regions (for example, 75.4 percent of the poor versus 45.7 percent of all workers in the metropolitan region). Obviously, rural regions had higher shares than do urban regions (as agriculture is included in the informal sector).

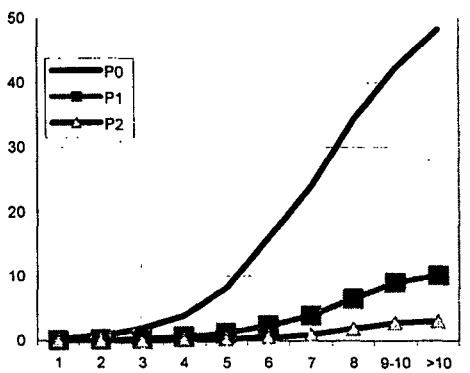
Moreover, poverty measures among informally employed individuals were more than double the corresponding measure for formally employed people. The only exception of this was Upper Rural Egypt, where living standards were the lowest for both formal and informal sector workers.

construction also had a greater share of the poor and a high incidence of poverty (20 and 18 percent respectively). At the other extreme, those working in services and banking had relatively low poverty (Annex tables A3.27 and A3.28).

At the regional level, individuals with low levels of welfare were predominantly engaged in agricultural occupations, even in urban areas. On the other hand, manufacture and services workers had relatively high poverty, and those in white collar or management occupations had the lowest levels of all. In urban areas, however, most of the poor were not in agriculture – for example, in the Metropolitan region, trade, manufacturing and services together accounted for 72 percent of the working poor.

As the poor were mostly self-employed in the agricultural sector, wage policies enacted in the government and public enterprise sectors may have little effect on poverty. Likewise, legislation regarding minimum wages paid by private employers may affect only a fraction of the poor. Still, policies to reduce poverty must be aimed at self-employed workers in agriculture, particularly in Upper Egypt.

Fig 3.7 Poverty measures by household size, 1999/2000



C. Household Size, Composition and Poverty

In Egypt, as in other countries, larger families were more likely to be poorer than smaller ones (figure 3.7). Even though some goods may be shared among household members, in absolute terms larger families have fewer resources per capita. The poor also tend to support a proportionally higher number of the young than do the non-poor.

Poor households had larger dependency ratios than the non-poor. In 1999/2000, every 100 people in poor households supported 89 other people, while every 100 non-poor household members supported only around 69 people. This was partly because a poor person typically lived in a bigger

household than average (7.2 people compared to 4.9) and had more children than average (43 percent of total members versus 35 percent). Yet, the percentage of elderly did not affect the poverty status of a household.

Large numbers of children and small numbers of working household members may provide at least a partial explanation of why particular households were poor, with higher dependency being a cause of poverty. On the other hand, a high proportion of children may also imply high replacement fertility behavior, as infant mortality rate was higher among poor households. In addition, poor children are considered an extra source of income to the household.

Differences in household size and age structure may also explain some of the differences in poverty levels among regions. There were significant regional differences in the dependency ratio, with the Metropolitan and Lower Egypt regions having the lowest ratios. The highest ratios were in Upper Egypt, especially in rural areas, for both the poor and non-poor – poor people in Upper Rural Egypt have to support twice as many peoples as poor people in the Metropolitan region.

Significant differences in household size and composition existed at the regional levels. In all regions, household size was usually larger for the poor compared to the non-poor, and households in rural regions were larger than urban ones. The Upper Rural region had the largest household size for both poor and non poor, while the Metropolitan region had the least. In all regions, poor households tended to have a larger proportion of children among their members, by more than 6 percentage points. The presence of children in a household did increase the risk of poverty substantially. A much higher percentage of children were found in the poor Upper Egypt regions compared to other regions.

Between 1995/1996 and 1999/2000, the average Egyptian household became smaller, with the Lower Rural regions (where poverty remarkably declined) showing the steepest fall. Overall, household size fell from 4.99 members in 19951996 to 4.85 members in 1999/2000. All regions, and both the poor and non poor, experienced this demographic improvement.

Tool Box 3.3: Problems with using standard household surveys for gender analysis

Multi-purpose household surveys such as the HIECS have a potential advantage for gender analysis, since they allow the linkage of topics from various sections of the survey, across different household members.

However, they also have two key limitations, which affect the analysis in this report:

1) They have only a limited ability to obtain information on intra-household distribution of resources. That is, most data is at the household level and it is difficult to determine well the exact consumption level of individual male and female household members. Therefore, even if there were, say, three females and two males in a household, it would probably be inaccurate to assign them each one-fifth of the total consumption. This makes matching of individual characteristics (such as education, sector of employment, employment status etc.) difficult to match with welfare differentiated by gender. Thus, the only clear distinction that can be made in terms of distinguishing welfare by gender is by looking at male- and female-headed households.
2) They usually cannot capture variations in local contexts, including demographic, cultural and religious factors that may affect gender differences in welfare. This is particularly applicable to intra-household sharing of consumables. In many developing country cultures, poor families with limited food and non-food resources give preference in consumption to males (Subsuming and Malacca 1999). However, there is no way to test this from household-level data. Moreover, when information about the needs, attitudes, time-use or consumption patterns of all household members is obtained from a single interview – usually with the often male household head, he may underestimate or under-value the multiple tasks that women in the household carry out. Even if women are asked about sensitive topics in the presence of other household members, they can be unlikely to respond honestly and openly.

Over the medium term, the best way to address this is to have more comprehensive household surveys that are sensitive to these issues. For example, key questions to analyze are the constraints, opportunities, incentives and needs of individual household members, perhaps with the help of special modules directly administered to sub-samples of household members.

Sources: Assad (2002); Bamberg et al (2001)

D. Gender and Poverty

Gender of household heads

It is difficult to distinguish between gender differences in poverty at the individual level, and thus the analysis is carried out by looking at the characteristics of household heads. The problem with individual-level analysis is primarily methodological (Tool box 3.3). But analysis at the level of male and female-headed households can provide some, though very partial, insights to differences across the genders.

For Egypt, female-headed households have lower poverty incidence and poverty gaps than male-headed households. The difference was slight in urban areas, but more pronounced in rural areas (figure 3.8). This rather surprising result may partly be because female-headed households were relatively rare in Egypt – in 1999/2000, just 10.4 percent of Egypt's population lived in households headed by women (this proportion was the highest in Metropolitan areas, at 12.2 percent, and lowest in Lower Rural Egypt, at 9.1 percent). The majority, by far, were widows, who may be older and thus with a greater command over assets than the population in general.

A more nuanced story comes from looking at the relative differences across regions. ***The incidence of poverty was higher among female-headed households in the Metropolitan and Lower Urban regions.*** The poverty gap and severity of poverty indices were generally higher among female-headed households compared to male-headed households, except in the Upper Rural region. Thus, in regions where the percentage of the poor was higher among female-headed households, the poorest of the poor were also found in female-headed households.

While the poor, regardless of the gender of the household head, were still concentrated in rural areas, female-headed poor households were more likely to be in urban, particularly Metropolitan, areas than their male counterparts (figure 3.9). Urban areas had 45.3 percent of population of male-headed households, and 47.3 of population of female-headed households, yet only 22.4 percent and 27.1 percent of the poor in the respective households. Poverty in both types of households was mostly located in the Upper Rural region, with a slightly lower share of the poor female-headed households (52.6 percent as against 54.6 percent for male-headed households) despite their higher population share (28.1 percent as against 26.5 percent for male-headed households). Nevertheless, the poverty figures suggest that in general location outweighs the gender effect.

Female-headed households were

Fig 3.8 Poverty incidence by gender of household head, 1999-2000 (%)

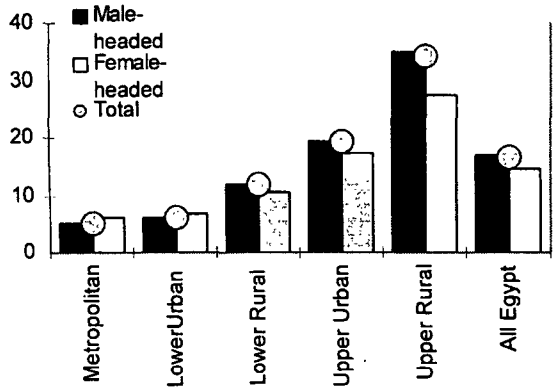
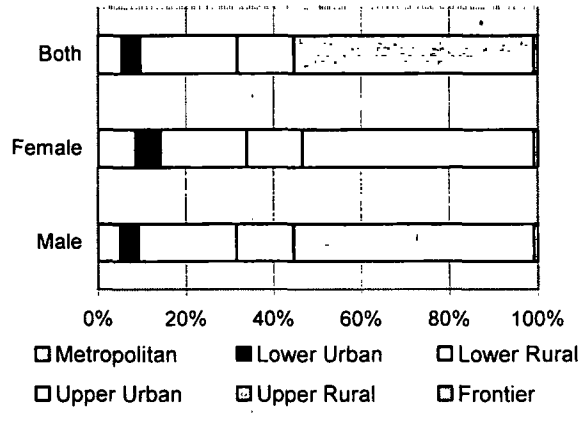
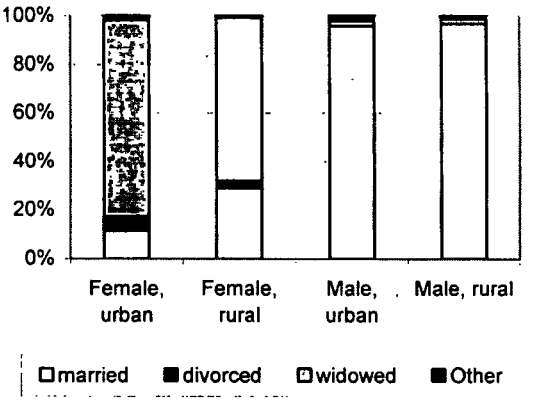


Fig 3.9 Regional distribution of the poor by gender of household head, 1999/2000



vulnerable to economic shocks, as their income sources may be irregular or insecure. Wages, the most important income source for female-headed households, was less important for them in 1999/2000 than for male-headed households. Instead, for poor female-headed households, income from transfers was as high as 36 percent of income in urban areas and 33 percent in rural areas. Overall, about 20 percent of income of poor female-headed households came from government pensions, 2 percent from remittances and 6 percent from private domestic transfers (the proportion of transfers was even greater for non-poor female-headed households – 46 percent and 42 percent of their income was from transfers in urban and rural areas, respectively). Contrast this with poor male-headed households, where income from transfers represented only 12 percent of income in urban areas and 6 percent in rural areas. Overall, the data seems to suggest that many female-headed households in rural areas receive irregular private transfers from a husband or family member who lives in urban areas, or charity transfers from another relative.

Fig 3.10 Distribution of household heads by marital status, 1999/2000



Gender of household heads, marital status and children

Since gender of household head alone does not yield many differences, does the marital status of female household heads in Egypt make a difference to the poverty of the household? If so, this would be useful for targeting assistance to the poor, since it is easy to observe.

Widowhood for household heads is a possible targeting mechanism, especially in rural areas. Most females who head families were widows, for both the poor and non poor, while most male heads were married (figure 3.10). There were no differences in marital status of male heads between urban and rural areas, but widows constituted 81 percent of female heads in urban areas and 67 percent in rural areas. While there were no differences in the marital status between poor and non-poor male heads, the poor were over-represented among widows by one percentage point in urban areas and by 3 percentage points in rural areas.

Widows as heads of household, with children, were even more likely to be poor. A larger number of children, regardless of the gender of household head, increases the poverty of the household by increasing the number of non-earning dependents. This was, for instance, true for male-headed households, where, for married males with more than three children, poverty measures were two to three times the average (in rural and urban areas respectively). But for

Table 3.2: Illiteracy rate for children (12-15 years), 1999/2000 (percent)

	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Male headed						
non poor	2.96	2.80	7.22	15.89	5.41	10.26
poor	13.38	14.71	16.20	37.69	15.58	32.42
total	4.41	4.44	9.91	22.14	7.84	15.35
Female headed						
non poor	5.87	5.74	7.73	17.76	7.04	12.76
poor	16.25	15.71	22.18	35.71	20.87	30.82
total	7.63	7.22	11.51	22.53	10.25	16.76
Total						
non poor	3.27	3.07	7.28	16.10	5.60	10.53
poor	13.68	14.84	16.84	37.52	16.14	32.26
total	4.75	4.70	10.10	22.19	8.11	15.49

households headed by widows with more than three children, the likelihood of being poor was more than four times the average level in urban areas and more than double the rate in rural areas. Even households headed by widows with one to three children were over-represented among the poor, by 23 percentage points for the two categories in urban areas and by 9 percentage points in rural areas.

E. Children in Poverty

Illiteracy among poor children

There was a strong relation between poverty and the educational attainment of children in Egypt, but with large ***gender and sectoral (urban/rural) gaps*** (table 3.2). For this group of children aged 12 to 15 years, the illiteracy rate for females was almost twice that of males (15.5 percent to 8 percent), whether the children were poor or not. Yet, in urban areas, illiteracy rates of males were only slightly better than those of females within each poverty group. The overall results on the illiteracy of female children were driven very largely by the situation in rural Egypt.

On the other hand, the gap between the poor and non-poor was larger than the gender gap among children. Among poor individuals, 16 percent of males of age 12-15 years and 32 percent of females were illiterate, while the corresponding proportions for non-poor children were only one third these ratios. In other words, one poor girl out of three was illiterate, compared to every sixth poor boy – but for non-poor children, only about one in ten girls and one in twenty boys were illiterate.

Poverty interacted with gender to produce large gaps in educational enrollment among the poor. Therefore, there was a disturbingly high degree of female disadvantage in enrollment for poor girls. Female children in poor households living in rural areas had the highest probability of being illiterate, regardless of the sex of the head of the household. Those children, deprived of even a basic education in childhood, have very poor labor market prospects for the future and thus they, and their children, may be doomed to live a life in poverty.

Fig 3.11a Children aged 6-15 years not enrolled in school (%)

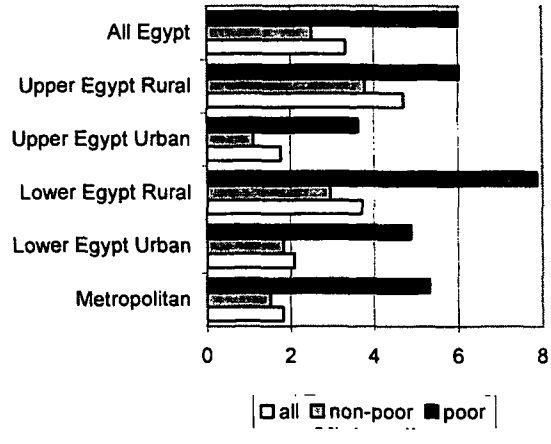
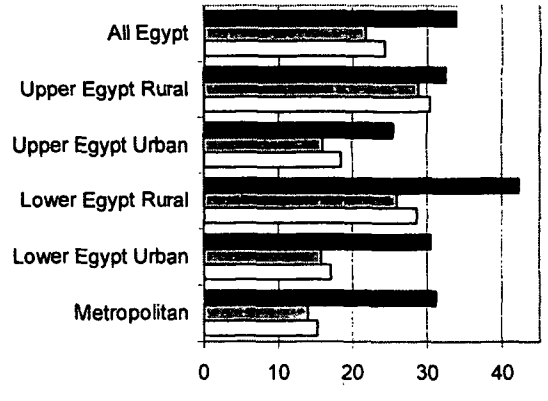


Fig 3.11b Children aged 15-19 years not enrolled in school (%)



Child and youth labor

While, in general, child labor could be a consequence of the low quality and high cost of education, it is also caused by the need for income gained by a working child – and is thus

closely linked to poverty. An equally important aspect of this issue is whether children who come from poor families are likely to be poor when they become adults and have their own families. Given the strong positive correlation between education and levels of welfare in Egypt, the relationship between welfare levels and school attendance of children merits special attention.

In Egypt, a household's poverty level was strongly correlated with the proportion of working

Technical Box 3.3: Youth unemployment: A profile

Although the overall unemployment rate in Egypt is low, the unemployment rate for youth (aged 15 to 25) is much higher. The 1999/2000 HIECS found that there was a clear difference in the unemployment rates in this age group among men and women, by regions, and by the level of education. *The largest impact on reducing unemployment and poverty in this age group was of literacy, especially for men.*

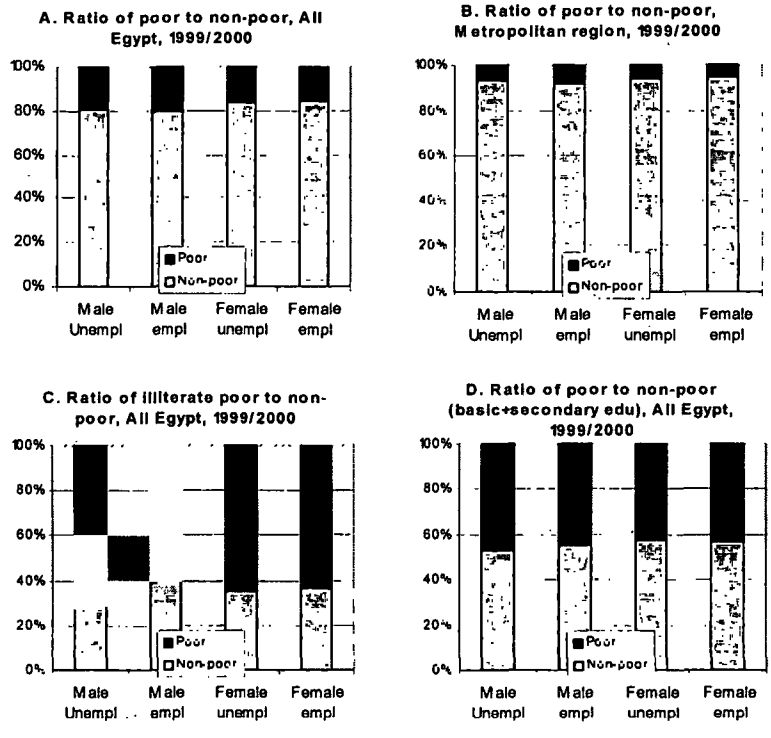
Gender: Young women were much more likely to be unemployed – four times as many females were unemployed as employed, while for young men, the ratio was about one-to-one. The ratio for both sexes was particularly high in the Metropolitan and Upper Urban regions (about 1½ to one for males, and over six to one for females).

For Egypt as a whole, men in this age group were marginally more likely to be poor. But being employed or not did not have a major poverty effect for either gender in this age group – about 20 percent of males and 16 percent of females were poor, regardless of employment status (panel A of Box figure).

Region: Among youth aged 15-25, the poverty rate as a whole is lowest in the Metropolitan areas (panel B of Box figure). As for Egypt as a whole, men were slightly more likely to be poor (regardless of employment status) in every region, with the gender difference being the greatest in the Upper Rural region and the lowest in the Lower Urban and Metropolitan regions.

Education: Most of the young unemployed in Egypt, whether poor or non-poor, male or female, were more likely to have a basic education, secondary education or diploma. Employed individuals, on the other hand, were more likely to be either illiterate or have secondary education. But illiteracy plays a large role in determining poverty in this age group as well – 47 percent of the employed poor were illiterate, compared to 20 percent of the unemployed poor.

Gender does play a role here – among the illiterate, employment lowers the likelihood for poverty much more among young men than among young women (panel C of Box figure). But this difference is greatly reduced when those with basic or secondary education or diploma are concerned (panel D).



children in the household.[2] As shown by figure 3.11a, 3.3 percent of all Egyptian children (age 6-15 years) did not go to school, and therefore were working. The proportion of un-enrolled youth (age 15-19, the secondary school age) was much higher, at 24.2 percent (figure 3.11b). On the other hand, unemployment among the youth, of secondary school age and new entrants to the labor force, continued to be a problem (Technical Box 3.3).

Three factors appear to affect the proportion of child labor: geographical regions, the rural-urban divide and household welfare.

Wealthier regions had a lower percentage of working children than did poorer regions. This probably reflects both demand-side factors (that is, higher household wealth and incomes) as well as supply-side ones (such as better schools, transportation and other infrastructure in the wealthier areas). The overall proportion of children not in school was just 1.8 percent for the Metropolitan region, which was least poor among the regions, and rose to 4.7 percent for the poor Upper Rural region. Similarly, the proportion of un-enrolled youth was the least in the Metropolitan region, and the highest in Upper Rural Egypt. With the exception of the Upper Urban region, which had the lowest overall incidence of child labor and the second-lowest incidence for youth, the ranking of regions by the overall proportion of the un-enrolled matched the ranking by poverty. On the other hand, because education is so strongly correlated with household welfare, the poor Upper Rural region is in need of targeted efforts aimed at enhancing education opportunities.

Percentages of working children were higher in rural regions than in urban regions, and the highest was among poor households in rural regions (7.9 percent in Lower Rural and 6 percent in Upper Rural). Among poor children in Metropolitan region, 5.3 percent were working, the highest among urban regions.

The difference between poor and non-poor households in the proportion of un-enrolled children, in most regions, was more than two percentage points. Children and youth in poor households were more likely to work. As showed by figures 3.3a and 3.3b, 6 percent of children in poor Egyptian households had to work, compared to 2.5 percent in non-poor households. The corresponding figures for those of secondary school age were 33.8 percent and 24.2 percent.

Lower Rural Egypt had the highest proportion of working children among the poor, at 7.9 percent, as well as the largest spread between the proportion of working children between poor and non-poor, at 4.9 percentage points, perhaps reflecting the higher returns to rural work in Lower versus Upper Egypt. But the highest proportion of working youth (that is, early dropouts from school) was in Upper Rural Egypt, at 30.3 percent overall, again consistent with the overall poverty of households there. The largest spread between poor and non-poor working youth was in the Metropolitan governorates, at 17.1 percent.

Gender mattered for child labor, in the sense that more children in female-headed households dropped out of school to work, but overall, fewer girls worked. In urban areas, the share of working children in households with female heads was twice as much as in those with male heads; in rural areas, it was 1.3 times. Yet, regardless of the sex of the head and poverty status, a lower share of working children were female compared to males. Given that the illiteracy rate among children aged 12-15 years was higher for girls than boys (table 3.2), it seems that girls who did not go to school in poor households were kept at home to do domestic work, while boys went to work to help their poor families. This behavior was more pronounced within female-headed households than within male-headed households.

Compared to 1995/96, youth labor increased for Egypt as a whole and in all regions except for Lower Urban region. This unfortunate fact may be among the many reasons behind the large

[2] An in depth study in Greater Cairo revealed that the children's financial contributions represented on average between 30.7 percent of their household' income (the children's estimates) and 22.8 percent (the mothers' estimates) (cited in El-Laithy and Lokshin 2002)

deterioration in poverty levels in the Upper Urban region. Here, the percentage of individuals not attending schools and work dropped from 37 percent in 1995/96 to 25 percent in 1999/2000.

F. Access to Public Water, Sanitation and Transport

Access to public services can greatly affect the welfare of households, with the effect being particularly large for poor households who cannot as easily purchase the services in the market, even if they are privately provided. Of course, education and health services are probably the most significant services provided by the government. However, the available HIECS data alone does not permit a thorough investigation of these two social services (although education *outcomes* were reported, discussed earlier in this chapter, there were no detailed questions dealing with health use and outcomes). Therefore, a more detailed analysis of these two key services will be carried out in the next phase of this activity. Government social transfers are also a 'service', which will be discussed in the following chapter. This section concentrates on access to water and sanitation services – which are central inputs to health and well-being – and transportation, which is critical for both access to the workplace and to other public and private services.

Fig 3.12 Access by poor to indoor potable water, and gap with non-poor

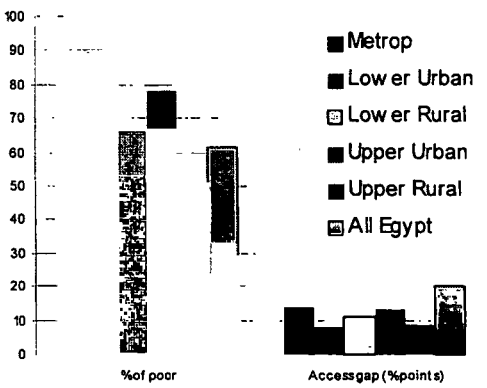
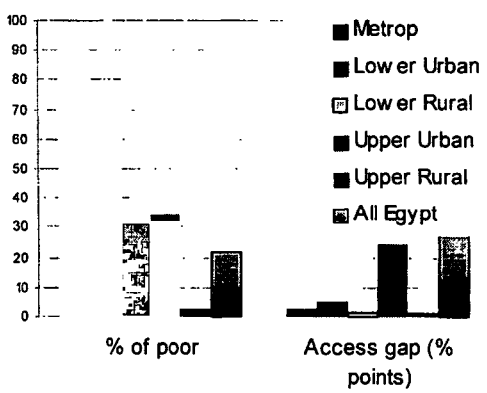


Fig 3.13 Access by poor to public sewerage, and gap with non-poor



Although there has been a considerable improvement in Egypt between 1995 and 2000 in terms of access to indoor drinking water, and almost half the population was connected to the public sewerage system, there were marked differences between the access for the poor and non-poor. Overall, 78 percent of Egyptians had indoor drinking water supply in 1999/2000 (up from 65 percent in 1995/1996), and 45 percent (up from 44 percent) were connected to the public sewerage network. However, there was a marked 'access gap' between the poor and the non-poor (figures 3.12 and 3.13). For indoor drinking water, for example, while 81.8 percent of the non-poor had access, 60.5 percent of the poor did – a gap 20 percentage points. For sewerage, the gap was larger, at 28 percentage points.

Again, the regional variation was marked, with the access gaps being the largest in the Upper Urban areas, and among the lowest in the Upper Rural areas (where neither the poor nor the non-poor had much access). In general, urban areas had higher levels of service, with the urban-rural difference being especially high for sewerage (figure 3.13).

Still, given the concentration of the poor in Upper Rural Egypt, and the low levels of these public services there, the access gaps for Egypt as a whole were higher than those for individual regions. This was compounded by the fact that regions – such as the Metropolitan or Lower Urban areas, where there

were relatively high levels of access for the poor – also had correspondingly lower numbers of the poor. In fact, between 1995/1996 and 1999/2000, the access gap in sewerage for Egypt as a whole widened (from 20 to 28 percentage points), driven mainly by a widening gap in Upper Rural Egypt.

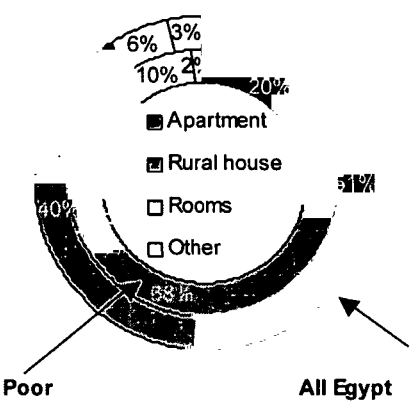
In urban areas, more of the poor than the non-poor used public garbage boxes, while there was a large gap in garbage collection between the non-poor and the poor. The use of public boxes was the highest in Lower Urban Egypt, with over half the population, and 60 percent of the poor, using them. In the Metropolitan areas, 56 percent of the poor used the public boxes, but most (64 percent) of the non-poor had their garbage collected. Even in Upper Urban Egypt, slightly more of the poor than the non-poor (37 to 36 percent) used public boxes. In rural areas, of course, the use of public garbage boxes was very low (around 5 percent of the population used them).

Most of the poor traveled on foot, but 16.5 percent of them (almost half in the Metropolitan areas) availed of public buses. Overall, a quarter of Egypt's population, or about 16 million people, regularly could avail of, and afford, to use the public transportation system. However, except in the Metropolitan area (where 49 percent of the poor versus 41 percent of the non-poor used public transport), use of public buses by the poor was lower than that of the non-poor. The gap was made up by walking – 65 percent of the poor in all of Egypt, and over 70 percent in Lower Egypt, walked instead of taking motorized transport. Poverty indicators among those who walked were exceptionally high – 22 percent of them were poor, with an average poverty gap of 4 percent.

G. Housing

Over half of all Egyptians in 1999/2000 lived in apartment (up from 41 percent in 1995/199) – but only one in five among the poor were able to afford them (figure 3.14). Apartments were the dwelling of choice for 90 percent of those who lived in the Metropolitan areas – but just 63 percent of the poor lived in apartments there, opting instead to live in shared or independent rooms (35 percent). Apartments were also prevalent in the urban areas of Lower and Upper Egypt, but once again, less of the poor used them – 18 percentage points less in Lower Urban, and 32 percentage points less in Upper Urban regions.

Fig 3.14 Housing type, 1999/2000

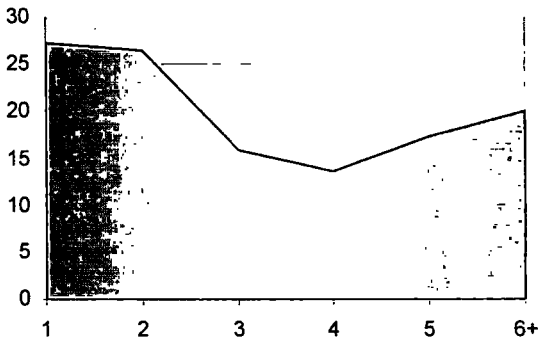


Poverty indicators were very high for those sharing rooms – as many as 45 percent of those who shared rooms in Upper Urban Egypt were poor, and 35 percent of those who had independent rooms. For the Metropolitan area, the corresponding incidences were 24 percent and 17 percent (much above the region's overall poverty rate of 5 percent).

Most of the poor lived in rural houses – an artifact of the preponderance of poverty in rural Egypt, especially in Upper Rural Egypt. The incidence of poverty was the highest for those in rural houses – 29 percent of them were poor. Still, even in urban parts of governorates, many of the poor lived in rural housing – suggesting that they were unable to afford housing near the urban centers. In Upper Urban Egypt, for example, 43 percent of the poor (the largest group) lived in rural houses. For Lower Urban Egypt, the figure was 13.5 percent.

Although most of the poor lived in dwellings with 3 to 4 rooms, the poverty measures were the highest for those who lived in one-room dwellings. For Egypt as a whole, 58 percent of the poor (as opposed to 50 percent of all Egyptians) lived in 3 or 4-roomed dwellings in 1999/2000. This may partly be a consequence of the larger families of the poor, and the need to share housing with others. However, there was an unequivocal correlation between the number of rooms in the dwelling and poverty measures (figure 3.15). The measures – severity and depth as well as incidence of poverty – fell as the number of rooms increased from one to four. The rise after that was probably again due to the need to share housing, and was most pronounced in the rural areas.

Figure 3.15 Poverty incidence (%) by number of rooms in dwelling, 1999/2000



Appendix table 3A: Distribution of individuals by their own education, versus education of household head: All Egypt, 1999/2000 (%)

	Education of household head							
Education of individual ↓	Illiterate	Read & write	Basic	Secondary	Diploma	University	Post University	Total
				Non-poor				
Illiterate	**69**	18	5	6	1	1	0	100
Read & write	18	**58**	6	10	2	6	0	100
Basic	25	23	**21**	16	3	12	1	100
Secondary	18	16	7	**43**	4	12	1	100
Diploma	10	10	6	14	**43**	16	1	100
University	6	7	4	8	2	**72**	2	100
Post-univer.	1	2	1	2	1	10	**84**	100
Total	**31**	**23**	**9**	**17**	**4**	**15**	**1**	100
				Poor				
Illiterate	**78**	15	3	3	0	0	0	100
Read & write	40	**48**	4	6	1	1	0	100
Basic	51	27	**12**	8	1	2	0	100
Secondary	43	26	7	**21**	2	1	0	100
Diploma	32	26	9	9	**22**	2	0	100
University	30	25	9	9	3	**24**	0	100
Post-univer.	50	0	0	0	0	0	**50**	100
Total	59	26	6	7	1	1	0	100

Appendix table 3B: Distribution of household heads by their education, versus education of household members: All Egypt, 1999/2000 (%)

	Education of household head							
Education of individual ↓	Illiterate	Read & write	Basic	Secondary	Diploma	Univer.	Post Univer.	Total
				Non-poor				
Illiterate	**57**	20	14	8	6	2	1	**25**
Read & write	9	**38**	11	9	7	6	5	**16**
Basic	18	22	**53**	21	20	19	17	**23**
Secondary	13	15	17	**55**	23	19	15	**22**
Diploma	1	1	2	3	**38**	3	2	**3**
University	2	3	4	5	7	**50**	24	**10**
Post-univer.	0	0	0	0	0	0	**36**	**0**
Total	100	100	100	100	100	100	100	100
				Poor				
Illiterate	**58**	27	23	19	12	12	9	**44**
Read & write	12	**33**	13	14	11	17	9	**17**
Basic	21	26	**48**	26	29	32	27	**24**
Secondary	9	13	14	**38**	24	14	36	**13**
Diploma	1	1	1	1	**20**	2	0	**1**
University	1	1	2	1	4	**23**	0	**1**
Post-univer.	0	0	0	0	0	0	**18**	**0**
Total	100	100	100	100	100	100	100	100

Source: El-Laithy and Lokshin (2002)

4. GROWTH PATTERNS AND POVERTY

High and sustainable output and employment growth rates, together with a shift into formal sector employment in sectors with higher productivity levels and growth, will be key to reducing poverty over the long term. Between 1995/96 and 1999/2000, Egypt experienced high growth rates in both output and employment but also saw slower overall productivity development, especially in the nonagricultural sectors. In addition, employment creation was not linked to sectors with productivity growth that effectively limited the potential for sustained income increases. Growth contributed to lowering poverty levels at a national level, but at the same time (i) left the poorer regions behind, and (ii) proved unsustainable as it ended in 2000. This was the result of a more inward oriented growth policy focusing on construction and services as well as protected manufacturing industries, and centered in or around Metropolitan areas.

The poor in Upper Egypt were most at disadvantage during the second half of the 1990s, for several reasons. Growth sectors, in particular manufacturing, were less present in the region. The population in rural Upper Egypt also remains locked into lower productivity agriculture compared to Lower Egypt. And importantly, lower levels of human capital and higher levels of income disparities prevented the poor as a group from participating in the growth process.

To prevent a reversal of poverty results in the wake of a slowdown in growth, the Egyptian economy will now need to move towards increasing productivity in order to ensure sustained growth rates and real wage increases. There also needs to be a focus on regional disparities in endowments and access to public services.

A. Introduction

In the late 1990s, the Egyptian economy experienced higher output growth rates than during the earlier part of the decade or during the late 1980s, and was also successful in creating employment. As shown in chapter 2, the improved growth performance was reflected in reduced poverty levels at the national level. But the particular growth pattern of the latter part of the 1990s was also characterized by regional divergence in both output and employment growth. At an overall level, poverty worsened in the poorer regions. Moreover, the economic boom ended in 2000, and by 2002, per capita growth is expected to at best stagnate, which in turn may have adverse effects on poverty.

Growth driven by productivity improvements will be essential to make a durable dent in poverty. However, Egypt may have fallen behind in this respect during 1995-1999. This chapter will examine, from a sectoral and regional perspective, how output, employment and productivity developments in Egypt between 1995/1996 and 1999/2000 can explain the developments in poverty observed in the household surveys. The specific characteristics of the Egyptian growth performance in this period – most notably, the strong growth in protected manufacturing industries and construction – are likely to have been instrumental in leading the large regional variations in growth. But these growth characteristics also explain, to some extent, why the boom ended. International experience shows that for growth to be long lasting, it will need to be accompanied by productivity increases together with a shift towards job creation and labor absorption in high productivity sectors. Increases in formal sector employment with productivity gains sustaining real wage increases are critical to raising living standards over time. Against this background, the chapter will also reflect on the effects of the recent economic downturn from 2001 onwards and its potential implications for poverty developments.

Before proceeding, however, it is important to emphasize the constraints put to the analysis by the limited availability of data. Unfortunately, data is limited in Egypt, and especially so on a regional basis (see Technical Box 4.1). ***Data constraints seriously limit the type of growth and productivity analysis that can be undertaken in the context of this study, and to some extent affect the reliability of the results obtained.***

Technical Box 4.1: Data Issues in Egypt

Access to reliable and consistent sources of data presents some difficulties in the case of Egypt. A first problem, specific to this study, is the short time period, which does not permit an analysis of the role of longer-term trends in growth for poverty reduction. In the absence of earlier poverty data consistent with the definitions and methodologies used in this study, the study can only make limited inferences on what changes in the 1995/1999 period might have driven the poverty outcomes (a more thorough analysis of sources of growth in Egypt during the 1990s can be found in World Bank 2001).

A second and more general issue is the very availability of data even for the period under focus. Perhaps most importantly, data constraints do not permit a comparative analysis of productivity developments in the different regions. For example, employment and wage data exist at a regional level but are inconsistent between different sources. While there are estimates for regional GDP per capita, the absolute growth levels reported are inconsistent with national accounts data (though the relative divergence in regional trends appears reasonable). And finally, the study did not have access to regional output data broken down by sector of activity, nor to data on internal migration, both of which would have been key to explaining regional growth and income divergence.

B. Poverty Divergence in Egypt

The focus of this section is on providing a framework for understanding some key results that emerge from the poverty analysis in chapters 2 and 3:

i. ***The reduction, albeit limited, in poverty rates at a national level***, from 19 to 17 percent of the population (lower poverty line).

ii. ***The distinct regional divergence in poverty outcomes.*** Metropolitan areas saw a dramatic drop in poverty, as did Lower Egypt, especially in rural areas. In contrast, poverty increased in both rural and urban Upper Egypt. While the divergence between the Metropolitan areas and Upper Egypt could be analyzed in the traditional rural-urban light, the divergence between two rural and largely agricultural areas – rural Lower Egypt and rural Upper Egypt – is raising new questions.

iii. ***The regional divergence in poverty rates for household heads engaged in different economic activities, especially between rural Lower and rural Upper Egypt.*** For example, poverty among households headed by agricultural workers fell markedly in rural areas in Lower Egypt but not in Upper Egypt; poverty among manufacturing sector workers fell in Lower Egypt, especially so in rural areas, but increased sharply in Upper Egypt, and the same pattern holds for construction sector workers.

While a complete explanation of these phenomena is beyond the scope of this study (partly de to data constraints explained in Technical box 4.1), this chapter advances some propositions regarding output, employment and productivity patterns in Egypt over 1995-2000 in relation to their implications for poverty developments. ***The overall guiding theme is the role played by employment creation in combination with productivity improvement***, i.e. that sustained employment growth in activities where labor productivity gains are also supporting wage increases will be key to reducing poverty over the longer term. Each of the three hypotheses is discussed in turn in the following three sections.

A first hypothesis is that overall poverty reduction was mostly due to employment creation and to a lesser extent to productivity improvements, which in turn raises questions about the path for further poverty improvements. In 1995-1999, the services sector created most jobs but saw little productivity growth, while the sectors with higher productivity growth, especially manufacturing, generated virtually no employment, except in Lower Egypt. Although employment creation may have lowered poverty, the limited overall level of productivity growth suggests that, if growth rates are not sustainable, poverty results may be fragile.

Poverty is relatively shallow in Egypt (Chapter 2), which implies that even small changes in growth may have very important effects on poverty numbers. An increase in growth will propel a large number of people above the poverty line, but likewise, a reduction in growth risks pushing a significant share of the population below the poverty line, leading to significant swings in the poverty headcount index. Thus,

with a comparatively high elasticity of poverty to growth, the fall in economic growth post-1999 may have affected poverty adversely. Employment creation and productivity developments in Egypt at an economy wide level are dealt with in the next section.

A second hypothesis is that regional poverty divergence may be driven by regional differences in production and employment, both in overall structure and within sector categories. The growth pattern that took place – in terms of key growth generating sectors – must have been such that the Metropolitan areas as well as Lower Egypt benefited, while Upper Egypt could not participate to the same degree. The level of growth was different: Metropolitan areas grew fast, followed by Lower Egypt, but with Upper Egypt lagging behind.

Growth driven by construction and manufacturing and centered on Metropolitan areas would be less favorable to Upper Egypt than to Lower Egypt, due to the geographical location of these sectors and due to the relative proximity of Lower Egypt to Metropolitan areas. Moreover, productivity differentials within sectors, particularly in agriculture, are also key. The fact that agricultural labor poverty fell sharply in Lower Egypt but increased in Upper Egypt points to a divergence in agricultural sector productivity in the two regions over the period 1995/1999. Unfortunately, this hypothesis can only be partially tested due to lack of regional value added data as well as migration data.

A third hypothesis is that a different set of regional characteristics, especially those related to human development levels, could also explain the regional divergence in growth as well as poverty reduction. Compared to Lower Egypt, Upper Egypt is disadvantaged in several respects – education and health levels, access to public services, etc.. These differences are likely to have shaped regional growth divergence, but may also influence the capacity of a given growth rate to lower regional poverty, that is, the elasticity of poverty to growth. The third section following this looks at potential determinants of regional growth and of poverty elasticities in this light. Again, regional data is scarce and only limited evidence can be put forward to support the case.

C. Growth, Employment and Productivity.

As outlined in chapter 1, growth in the period 1995/1999, compared to the early 1990s, was driven by non-tradables and import substituting manufacturing; thus, it was entirely driven by domestic demand, and with public sector demand playing a more important role than in the previous five-year period. ***The sectoral growth pattern was reflected in poverty developments at an aggregate level:***

- ***Clearly, the construction sector boom had beneficial spillover effects on workers in the sector.*** Hence, it is not surprising that poverty fell in the category of households where the household head was engaged in the construction sector. Similar evidence emerges if we look at poverty by employment status. Typically, the construction sector would depend largely on occasional workers, often migrants from surrounding areas. Although occasional workers remain the poorest, poverty fell quite significantly in this category, too.
- ***Poverty among workers in the manufacturing sector was already, in 1995, the lowest among all sectors of activity – and fell even lower.*** Manufacturing work generally implies formal wage employment, which, compared to informal sector work or subsistence agriculture, will provide higher incomes. And indeed, the rapid growth in the manufacturing sector at the end of the 1990s lowered poverty among its workers even further.
- ***Although the tourism sector expanded in the period, there was no discernable reduction of poverty among workers in the trade, hotel and restaurants category.*** The Luxor incident in 1997 cannot quite account for this paradox, as its effects in terms of tourism arrivals and receipts appears to have been very limited after 1998. Of course, the trade, hotel and restaurants sector

does not depend on tourism alone, especially since it includes retail and wholesale trade. Unfortunately, data are not available to provide a more detailed understanding of what role the sector has played for this category of workers.

Employment creation

High growth rates also translated into employment creation. Employment numbers on a sectoral/regional basis from the CAPMAS Labor Force Survey by Sample (LFSS) suggest that employment grew by some 2.7 percent per year between 1995-1999, keeping up with the very high labor force growth that characterizes the Egyptian labor market.[1] With value added growth reaching 5.5 percent, the elasticity of employment to growth was around 0.5 over this period.

In other words, growth was fairly employment intensive. In fact, when compared to a set of OECD and non-OECD countries, Egypt had higher employment elasticity than any of the countries that achieved similar or higher growth levels (Comparator Box 4.2).

Comparator Box 4.2: Employment elasticities and selected international comparators

	Empl. Growth	VA growth	Elasticity
Egypt 1995-1999	**2.7**	**5.5**	**0.5**
1970-1990			
Ireland	0.5	4.5	0.1
Italy	0.5	2.9	0.2
Korea 1/	3.1	8.4	0.4
1990-2000			
Mexico	6.0	3.4	1.8
Turkey	0.0	3.0	0.0
Poland 2/	0.7	6.2	0.1

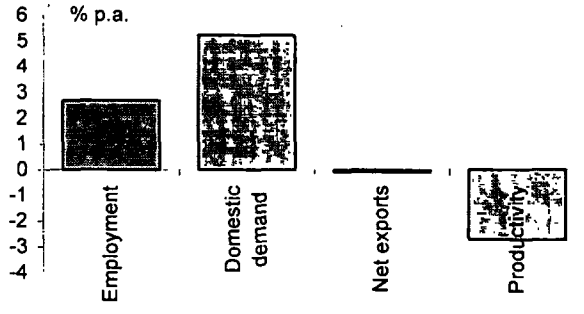
Source: World Bank data, CAPMAS LFSS, OECD National Accounts, OECD LFS

1. 1972-1990. 2. 1993-1998

These aggregate employment gains were, as in the case of output growth, very unevenly distributed among different sectors:

- ***Agricultural employment, which accounts for some 30 percent of the employed work force, fell by 1.1 percent per year.*** This could be a sign of a modernization process in the economy, as labor is moving away from low productivity agricultural activities to higher paying jobs elsewhere.
- ***Employment in services, where almost half of the labor force is employed, grew at 5 percent per year,*** driven by the very rapid expansion of employment in trade, restaurants and hotels sector, by over 18 percent per year. In contrast, the transports and storage sector appears to have collapsed during this period, although it is not quite clear what accounts for this development.
- ***Overall industrial employment grew slowly, at 1.7 percent per year.*** As could be expected, employment in the construction sector expanded rapidly (over 8 percent per year). The manufacturing sector, however, accounted for virtually no employment growth.

Fig 4.1 Employment creation was entirely a product of domestic demand.
(Contributions to employment growth, 1995-1999)
Source: LFSS and World Bank data



While growth in this period created employment, it may not have created sustainable sources of income growth. The employment growth pattern above has some important implications. First, nontradables sectors accounted for essentially all employment growth – and thus is automatically constrained by the size of Egypt's domestic purchasing power spent on these nontradables. And second,

[1] For example, over 1988-1998, labor force growth is estimated to have reached 2.7 percent. These calculations are based on an extended definition of the labor force (see Assaad 2000).

Tool Box 4.3. Employment gains, output and productivity decomposition

The respective importance of domestic demand, net foreign demand and labor productivity growth can be investigated more formally by using the definitions of output growth as:

Output growth = (employment growth + productivity growth) =

(the contribution of domestic demand + the contribution of net foreign demand).

Employment growth is then the result of the growth contribution of domestic and net foreign demand reduced by labor productivity growth.

It is important not to misinterpret the negative effect of labor productivity growth, since it merely reflects the need to sustain both high growth rates and high productivity growth in tandem order to raise employment as well as wage earnings. For a given growth rate, the definition of labor productivity implies that higher labor productivity growth must accompany lower employment creation. In a more dynamic context, however, labor productivity growth will give an important positive contribution to employment creation as it will be important to sustain growth rates over time, as well as ensure increased income earnings associated with growth.

Source: World Bank. 2001. *Poland's Labor Market: The Challenge of Job Creation*

as will be described below, although the low productivity agricultural sector freed workers for other sectors, these workers did not get jobs in sectors with either high levels of productivity or with substantial labor productivity growth.

Domestic demand was the only driving force in employment creation. The role of domestic demand in generating employment is evident in employment growth in the nontradables sector. A decomposition of employment gains into output gains and productivity gains for Egypt is shown in figure 4.1 (see Tool Box 4.3 for method). As can be seen, total value-added growth in Egypt was split equally between employment growth and labor productivity gains at around 2.7 percent growth per year each.

The employment effect of net exports was instead negative, due to weak exports developments and a rapid increase in real imports to meet domestic demand. In fact, Egyptian exports account for a small and shrinking share of GDP, falling from 21 percent in 1995 to 15 percent in 1999, and their contribution to employment generation will therefore be weak by definition. Moreover, there is also evidence that exports became more capital intensive during the 1990s, suggesting a loss in competitive advantage vis-à-vis other countries with cheaper low skilled labor.[2] Instead, the nontradables sectors had to provide employment creation.

The trend towards total reliance on domestic demand for economic growth and job creation questions the sustainability of value added and employment growth over the medium term. The increased role of domestic demand, partly driven by increases in public consumption and investment (see chapter 1) may have increased the vulnerability of the Egyptian economy to sudden reversal in growth and employment gains. The growing trend towards a loss in the competitiveness of labor-intensive exports is also a troubling trend.

Productivity

Moreover, job creation was not related to formal employment in high productivity growth sectors. In fact, sectors with high levels of labor productivity, or with high growth rates of labor productivity, did not generate employment. Table 4.1 below shows labor productivity growth and the relative level of productivity in 1999 for the different economic sectors in Egypt. In 1999, manufacturing had the highest level of productivity, followed by the category 'other services'. Labor productivity grew most in the agricultural sector, which was shedding labor during this period, and in the manufacturing sector, with minimal employment creation.

[2] Between 1990-1999, the share of unskilled labor intensive products in merchandise exports fell from 31 percent to 24 percent, while capital intensive products grew by almost 200 percent. See Egypt SSR, World Bank (2001).

In contrast, labor productivity in the highly employment generating trade, restaurant and hotel sector fell during this period, and dramatically so. Part of this development may be due to hidden numbers – the trade, restaurants and hotel sector is where value added as opposed to employment survey data is likely to be most underestimated due to a large presence of the informal sector. But clearly, informal sector employment growth is not the solution to income growth in the long run.

Table 4.1. Egypt: value-added, employment and productivity growth per year 1995/1999, and productivity level index 1999.

	Growth 1995-1999			Productivity index 1999 1/
	Value added	Employment	Value added per worker	Value added per worker
GDP AT FACTOR COST	5.5	2.7	2.7	100
Agriculture	3.5	-1.1	4.6	52
Industry	5.2	3.4	1.7	141
Industry excluding mining	8.5	3.4	4.9	121
o/w manufacturing	8.3	0.7	7.6	145
construction	11.3	8.4	2.7	79
Services	6.3	5.0	1.3	109
o/w trade	7.3	18.4	-9.3	101
other services 2/	5.6	3.9	1.6	114
GDP outside oil and agriculture	7.0	4.5	2.4	113

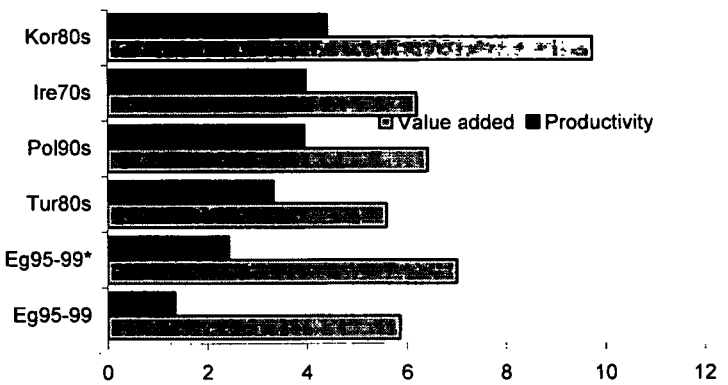
Source: National accounts, CAPMAS LFSS
1. Total value added per worker 1999=100.
2. The category other services includes business and household services and public administration

Productivity developments in the different sectors are consistent with the poverty results. Manufacturing sector productivity increased, and poverty fell among workers in this category – the incidence of poverty for manufacturing workers fell by 3.7 percentage points between 1995-1996 and 1999-2000. The trade sector appears to have had negative productivity growth, and poverty incidence actually increased slightly, by 1.9 percentage points, among trade sector workers. The agricultural sector saw, overall, substantial productivity growth in this period, consistent with the fall in poverty incidence among agricultural workers, by 5.2 percentage points (annex tables A3.28 and A4.28).

During this period, Egypt appears not to have made the labor productivity gains that would build the basis for long-term growth and poverty reduction. In view of the contribution of productivity growth in the agricultural sector to total productivity growth, productivity developments in the non-agricultural sector during the 1995-1999 period, even excluding the mining sector, are less encouraging.

The relatively slow productivity growth in the non-agricultural sector is particularly evident when comparing Egypt to other countries that have experienced periods of growth at similar levels as Egypt (Comparator Box 4.4). In fact, during the 1970s and 80s, countries such as Turkey, Ireland and Korea experienced growth rates similar to those of Egypt but with higher productivity growth levels. More

Comparator Box 4.4. Value added and productivity growth in the non-agricultural sector (excluding mining), Egypt and international comparators.



Source: Author's calculation, based on OECD (National Accounts and LFS data), CAPMAS LFSS, World Bank data;
Note: Kor=South Korea; Ire=Ireland; Pol=Poland; Tur=Turkey; Eg=Egypt

recently, the same has been observed for Poland. These results are also consistent with previous findings on total factor productivity (TFP) growth in Egypt that suggest that the contribution of TFP to overall economic growth was negligible in the period 1995-2000.[3]

One way to assess how Egypt has fallen behind in terms of productivity growth is by distinguishing between ways in which productivity growth takes place. Comparator Box 4.5 provides an overview of total productivity growth in Egypt – separated into productivity growth within sectors and across sectors, and contrast these to the cases of Ireland and Portugal.[4] The method, which draws on a similar exercise recently undertaken for Turkey, is described in Tool Box 4.6. The *within sector* productivity gains are the productivity gains which would have occurred had all sectors' employment share been constant in Egypt over the period 1995-1999. Conversely, the *across sector* productivity gains are due only to the flow of labor from agriculture to the services and industry sectors where productivity levels are higher.

In Egypt, the industrial and services sectors showed two distinct productivity patterns, with productivity gains in industry more due to 'within sector' productivity growth and thus low absorption of labor. Overall, there were little productivity gains from reallocation, as the share of employment in

Comparator Box 4.5. Productivity decomposition for Egypt, Ireland and Portugal.

Ireland and Portugal were clearly already substantially wealthier than Egypt in the 1970s and 1980s. However, they are also countries where agriculture has traditionally absorbed a large share of the employed workforce, and where the sectoral dynamics therefore could be comparable. Over time, both Ireland and Portugal have seen a substantial reallocation of labor. In Ireland, agricultural employment went from 25 to 16 percent of the employed workforce between 1970-1980. In Portugal, the agricultural employment share went from 20 to 12 percent between 1986-1996. If Egypt had reduced the employment share of agriculture at the same speed (annual growth rate), it would have reached 26 percent by 1999.

Yet, compared to Egypt, Portugal and Ireland registered more important *within sector* productivity gains in the non-agricultural sector amounting to 68 and 76 percent of total productivity gains -- compared to just 59 percent (the total of industry and services) for Egypt. Importantly, these gains were made in spite of the relatively rapid labor reallocation between sectors. An interpretation of this is that Portugal and Ireland managed to create productivity gains that could be sustained even after labor reallocation has taken place. In fact, in Ireland, labor productivity growth in the non-agricultural sector remained as high in the 1980s as in the 1970s.

Egypt 1995-1999, excluding mining	**Within Sector Effect (%)**	**Across Sector Effect (%)**	**Total (%)**
Agriculture	22	-19	3
Industry excl. mining	38	5	42
Services	21	36	54
Total excl mining	***81***	***22***	***100***
Ireland 1970-1980	**Within Sector Effect (%)**	**Across Sector Effect (%)**	**Total (%)**
Agriculture	18	-17	1
Non-agricultural	76	23	99
Total	***94***	***6***	***100***
Portugal 1986-1996	**Within Sector Effect (%)**	**Across Sector Effect (%)**	**Total (%)**
Agriculture	11	-12	0
Non-agricultural	68	33	100
Total	***79***	***21***	***100***

[3] See World Bank (2001), *Egypt: Social And Structural Review.*

[4] For Egypt, industry excludes the mining industry, which accounts for a negligible share of employment but whose importance in value added tends to skew productivity results. When the mining industry is included, total productivity gains are even lower.

Tool Box 4.6. Within versus across sector productivity gains.

Total improvements in labor productivity in an economy can be seen as the combined effect of improvements within the differen sectors on the one hand and improvements in productivity levels due to the reallocation of labor from low to higher productivity sectors on the other.

The *within sector effect* is typically a result of technological, organizational or managerial improvements which have augmented labor productivity in a particular sector. The *across sector effect* generally involves a reallocation from agriculture to the more productive non-agricultural sectors. In a developing economy, reallocation dynamics should be important as the economy moves from an essentially agrarian society to a more diversified one. However, labor reallocation needs to be accompanied by *within sector* productivity growth, or else, once the sectoral employment structure of the country has stabilized, global productivity growth will slow down fast.

For an overview of the methodology, see Filiztekin (1999), "Convergence Across Turkish Provinces and Sectoral Dynamics", background paper for World Bank (2000), *Turkey: Economic Reforms, Living Standards and Social Welfare Study.*

agriculture just changed from 32 to 29 percent of the population. In the industrial sector, the within sector effect being stronger than the across sector effect is consistent with the modest employment gains there.

In contrast, the contribution of services to total labor productivity growth was mostly due to the rapid absorption of labor in this sector, with little productivity gains within the sector itself. Again, this is consistent with the rapid employment gains in low productivity services sectors.

To ensure higher and sustainable growth in overall labor productivity, Egypt also needs to achieve both labor reallocation and higher productivity growth within sectors. The comparison to Ireland and Portugal in Comparator Box 4.5 suggests that there are productivity gains to be made on several accounts in Egypt. Given the large productivity differentials between agriculture and other sectors, there is clearly still scope for substantial reallocation of labor from low productivity agricultural activities to the services and industry sectors in Egypt – if the economy is to move towards a more modern economic structure and if poverty is to be reduced through the generation of employment and income. However, for these productivity, employment and poverty gains to prove sustainable, it will also be essential to increase productivity growth within sectors.

Productivity improvements will in turn depend on increasing the level of human capital. The transition in Ireland was facilitated by a well-educated workforce that could move out of the agricultural sector and contribute to the labor productivity increases in the new sectors. Educational attainments saw an increase in Egypt between 1995 and 1999, as reflected in the household survey. Yet, the divide between rural and urban areas remains very high, and may pose an important obstacle to the flow of agricultural labor into higher productivity, higher skills sectors.

D. Regional Divergence and Sectoral Growth Patterns

The regional divergence in poverty between two largely rural areas - Lower Egypt and Upper Egypt – suggests that growth patterns have moved beyond a more traditional urban-rural growth divergence. That is, it isn't just a story of low productivity agriculture is keeping the labor force locked into poverty. First, agriculture plays an important role in both Lower and Upper Egypt areas, employing a large share of the labor force. And second, aggregate numbers indicate that overall agricultural labor productivity, although still at a lower level than for other sectors, increased above the economy wide average between 1995-1999. This section explores two possible and complementary explanations for the regional divergence, within the data limitations discussed earlier.

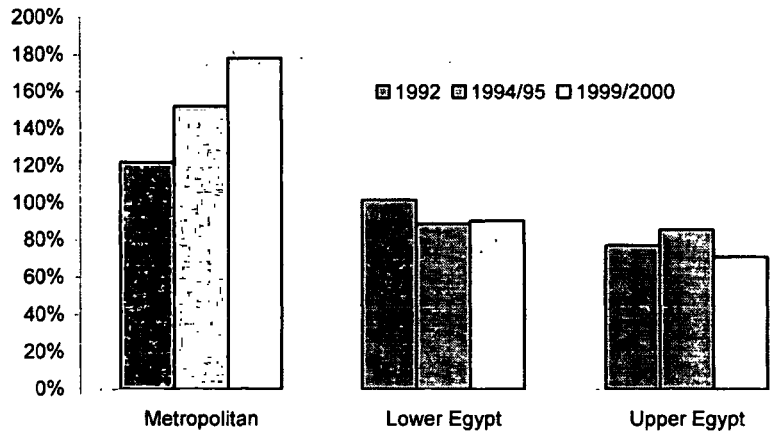
First, the sectoral composition of the growth pattern of the late 1990s as well as locational advantages may be driving the divergence. Since the poverty divide is regional rather than rural/urban, the fact that Upper Egypt (with the exception of the Giza governorate) is farthest from the large metropolitan areas (see map at end of report), is likely to have placed it further from the epicenter of growth. Growth driven by construction and manufacturing and centered on Metropolitan and Lower Egypt areas would be less favorable to Upper Egypt. For one, the region had less representation of these growth sectors in the economy at the outset. On the other hand, workers in the region cannot take advantage of the same proximity (and networks of family and friends) as workers in Lower Egypt to temporarily migrate to neighboring urban/metropolitan areas for work.

Second, the agricultural sectors in the two regions are different in terms of composition and output, and there was a divergence in agricultural sector productivity over the period 1995/1999. This would explain why agricultural labor poverty fell sharply in Rural Lower Egypt but remained stagnant in Rural Upper Egypt.

Sectoral/locational patterns of growth

The overall level of growth appears to have been much slower in Upper Egypt than in other regions. According to estimates by the INP Egypt Human Development Report (EHDR), GDP per capita in Upper Egypt as a share of total Egypt GDP per capita fell between 1994/95 and 1999/2000, while that of Metropolitan areas increased rapidly and that of Lower Egypt remained the same (figure 4.2). A combination of lower aggregate growth rates combined with higher population growth rates compared to other regions (at 2.5 percent per year compared with 2.1 for Lower Egypt and 1.7 or Metropolitan areas, again according to the HDR numbers) accounts for the regional lag.

Fig 4.2 Upper Egypt lagged behind in economic growth.
GDP per capita as percent of total Egypt GDP per capita, 1992, 1994/95, 1999/2000.

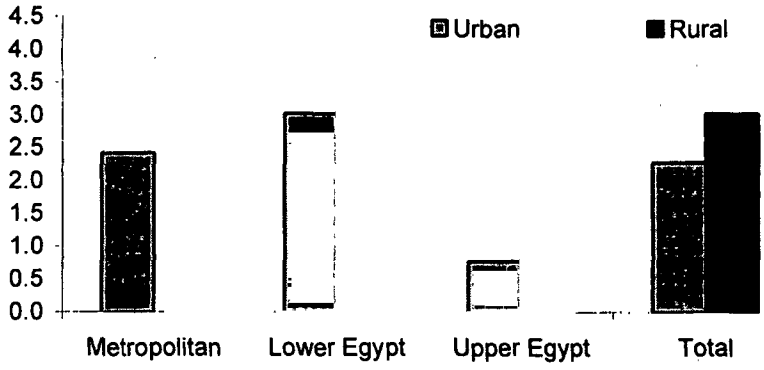


Source: INP HDR

Slower economic growth rates were also reflected in much slower rates of job creation in Upper Egypt than in the rest of the country, in particular in urban areas. Employment growth was moderate in Metropolitan areas, and the highest in Lower Egypt. Employment growth in Lower Egypt was in fact considerably higher than in the rest of the country, and especially so in rural areas (figure 4.3). These developments support the role employment creation has played in lowering poverty, as they are consistent

with the strong improvement in poverty in Lower Rural Egypt and the deterioration in Upper Urban Egypt.

Fig 4.3 And Upper Egypt also saw much less job creation
Employment growth 1995/96 to 1999/2000, percent per year.



Source: CAPMAS LFSS

The presence of fast growing, high productivity industry or services sectors in the Lower Egypt region is likely to have lowered poverty there, but data constraints do not permit a regional productivity analysis. Another way of looking at the growth and employment divergence would be to look at productivity differentials at a regional level in a similar way to the sectoral decomposition done at a national level above. Ideally, productivity gains within different sectors in different regions would have been investigated and related to poverty and growth developments. Again, lack of data stand in the way of more rigorous productivity analysis. Instead, the report uses regional/sectoral employment data to try to infer something about different sectors' importance in different regions.

Upper Egypt had less representation of employment in the key employment and/or productivity generating sectors. The differences between Lower Egypt and Upper Egypt cannot be explained by aggregate level employment shares. In terms of employment in different sectors, the Metropolitan areas stand apart, with, as expected, virtually no workforce in agriculture and a higher share in industry and services than the other regions. For Lower and Upper Egypt, this is not the case – the shares of employment in agriculture, industry and services are generally quite similar between the two regions (table 4.2), but Lower Egypt had more of the workforce in the high productivity and high growth manufacturing sector than did Upper Egypt.

Table 4.2 Shares in total regional employment by sector, 1999

	Agr	*Ind*	*Services*			
			o/w Constr.	*Manuf.*		*o/w Trade*
Metropolitan	1%	34%	10%	22%	65%	30%
Lower Egypt	32%	21%	7%	13%	46%	16%
Upper Egypt	39%	18%	8%	9%	43%	15%
Egypt	29%	23%	8%	13%	49%	18%

Source: CAPMAS LFSS

There are regional differences at the more disaggregated level, however. The Metropolitan areas had the highest share of employment in high growth sectors, namely the construction sector and in particular in the high productivity manufacturing sector.

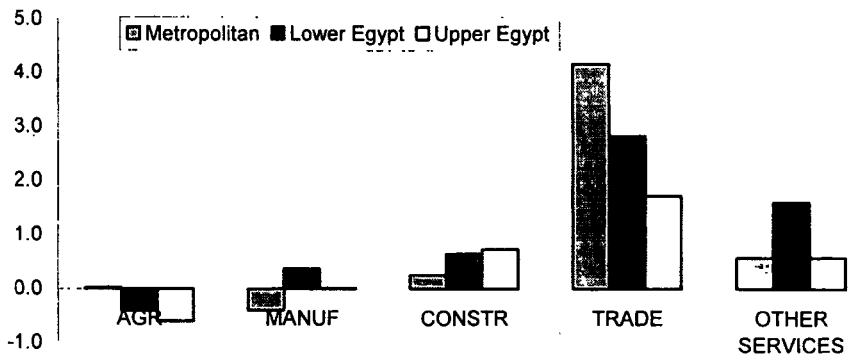
Also, ***some employment generating sectors were more important in Lower Egypt while employment-shedding sectors were more important in total employment in Upper Egypt.*** Relative to its share in total non-agricultural employment, Upper Egypt was under represented in 1995 in manufacturing and in trade, restaurants and hotels (fast-growing sectors in the 1995-200 period), and over represented in the transports and storage

sector (which shrunk rapidly over this time). Lower Egypt, in contrast, was under represented in transports and storage and over represented in the trade, restaurants and hotels sector.

All manufacturing sector employment growth, and possibly the largest growth in public administration workers, took place in Lower Egypt, contributing to lowering poverty rates among workers there. According to the findings in Chapter 3, low poverty rates were found among those who worked in the manufacturing and government sectors. And Lower Egypt was the only region that saw positive employment growth in manufacturing and higher employment growth in the category of 'other services' (figure 4.4). 40 percent of 'other services' was public administration in 1999. In fact, according to the CAPMAS employment data, 50 percent of the public administration workers were employed in Lower Egypt in 1999, a surprisingly high figure.[5]

The manufacturing growth, however, appears to be a clear Metropolitan/Lower Egypt phenomenon, with the majority of the faster growing manufacturing production is the two regions. While nothing can be inferred about productivity developments without appropriate regional output data, manufacturing growth clearly benefited Lower Egypt as far as employment growth is concerned. Manufacturing employment growth in Lower Egypt was, in turn, entirely due to a boost in manufacturing employment in rural areas, which, given the higher productivity levels in this sector, is also likely to explain the sharp reduction in poverty rates among these workers in Lower Egypt.

Fig 4.4 Only Lower Egypt saw positive employment growth in the manufacturing sector.
Contributions to employment growth by region, selected sectors, 1995/1996 to 1999/2000



Source: CAPMAS LFSS
Note: 'Trade' includes trade, restaurants and hotels. 'Other services' includes business and household services and public administration.

Lower Egypt is also likely to have profited from closer access to temporary work in fast growing Metropolitan areas, especially in the construction and trade sectors, which have a high share of informal workers. The construction boom between 1994 and 1999 was primarily centered on Metropolitan areas and the Northern coastal areas. Given the important role of temporary workers in construction as well as the rapid expansion in this sector, however, the boom may have relied not only on workers in the cities but also on workers in surrounding areas – effectively benefiting Lower Egypt more than Upper Egypt. In fact, the ability to take advantage of the Metropolitan construction boom could be an important factor in explaining the divergence in poverty rates for occasional workers in Lower and Upper Egypt. As evident in figure 4.4, the construction sector also created jobs in Upper Egypt, but given

[5] Unfortunately, since the 1995 employment data are less disaggregated it is impossible to tell whether the increase in employment in 'other services' is due, as hypothesized, to an expansion in public administration or to growing business services.

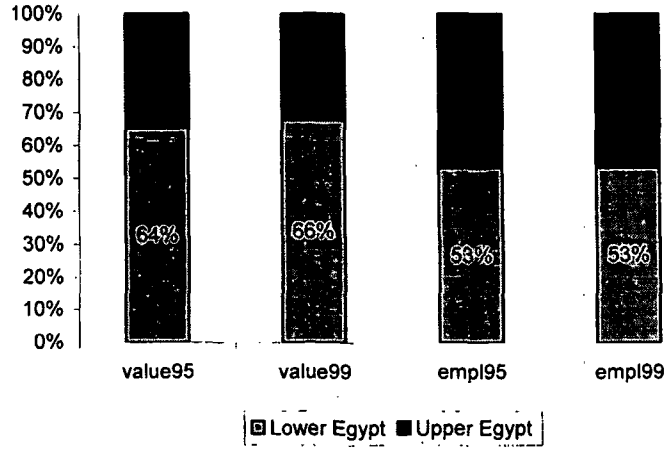
that the actual construction boom took place elsewhere, this is likely to have represented a more local building phenomenon, most likely with less growth and earnings potential.

Agricultural divergences

Given the importance of the agricultural sector in the rural regions, different outcomes in agriculture between Upper Rural and Lower Rural Egypt are a major explanation for the divergence between them. The impact on growth and poverty comes not only because of the importance of the agricultural sector in employment, but also because a more productive/income generating agricultural sector has important spill-over effects into local non-farm income by increasing local demand.

In fact, agricultural growth and productivity levels are likely to have been very different between the two regions. Total agricultural growth increased slightly in 1995-1999 compared to 1991-1995 (from 2.8 to 3.6 percent). Yet, there are reasons to suspect that the gains of this agricultural growth were not evenly distributed. Since the report did not have access to comprehensive agricultural data sets by region, it cannot distinctly measure output and productivity differentials in the agricultural sector. Instead, based on available data, this section looks at some structural and trend differences between Lower and Upper Egypt, based on statistics for ten important crops, namely beans, wheat, barley, rice, tomatoes, maize, fine maize, peanuts, sesame, and onion.[6]

Fig 4.5 Lower Egypt produces more agricultural output, given its share in employment.
Regional share in crop output value * and in agricultural employment, 1995, 1999.



Source: Production Bulletin, Ministry of Agriculture, 1999, 1995, CAPMAS LFSS.
* Includes beans, wheat, barley, rice, tomatoes, maize, fine maize, peanuts, sesame, and onion

Lower Egypt produces more agricultural output value than Upper Egypt relative to the share of the agricultural workforce, and may have a higher productivity of agriculture. While Lower and Upper

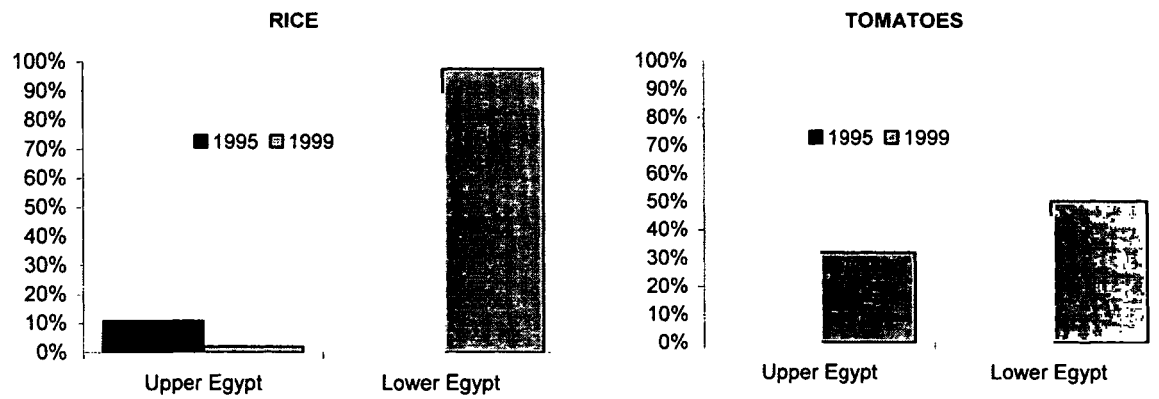
[6] Unfortunately, only production (volume) data, not price data, was available for potatoes, citrus fruits, cantaloupe, strawberries and sugar cane. Yet, sugar cane is an important product in Upper Egypt (99 percent of sugar cane is produced in Upper Egypt). Similarly, fruits and vegetables belong to high-value crops that are likely to have been increasing in demand over time, and for which it would have been useful to see the value added developments by region.

Egypt have similar shares in total agricultural employment (53 vs. 46 percent), Lower Egypt produces two thirds of the value of the main agricultural crops (figure 4.5). This is obviously an imperfect measurement of productivity – there was no value information available on sugar cane (a key produce in the Upper Egypt region), on the share of the workforce employed on each crop, or on value-added rather than total output value numbers. Yet, the differences hint at large productivity differentials between the regions.

There appears also to have been some divergence in agricultural developments over the 1995-1999 period between the two regions, although no strong pattern emerges. For example, the ratio of output value (for the ten crops for which there is data) per employee in Lower Egypt was already 66 percent higher than in Upper Egypt in 1995, and grew to become 80 percent higher in 1999.

Upper Egypt lost production shares in fast growing and high value crops between 1995-1999. The fast growing crops, in terms of their contribution to overall value growth, have been wheat, maize, rice and tomatoes in this period. Importantly, in the case of both rice and tomatoes, the Upper Egypt region lost production shares between 1995-1999 (figure 4.6). By 1999, Lower Egypt accounted for 97 percent of all production of rice, which is a high value crop, and which is likely to have contributed to raising the value of agricultural output and income. Among other things, the flooding of the Nile delta region in recent years appears to have favored rice production in this region.

Fig 4.6 Upper Egypt lost production shares in high-value, fast growing crops.
(Regional share of total production (volumes), selected crops.)



Source: Production Bulletin, Ministry of Agriculture, 1999, 1995.

Wheat is predominantly (60 percent of total value) grown in Lower Egypt, where production volumes, as well as wheat prices, also increased faster than in Upper Egypt over 1995-1999. Although not a high value crop (wheat prices are around a sixth of those of rice per ton), wheat prices are supported by the Egyptian State as part of the procurement process for subsidized bread (Chapter 5). The price guarantee may have supported agricultural income in this sector, as well as encouraged its expansion.

Production of sugar cane also fell in Upper Egypt. Unfortunately, there is no price data available for sugar cane, grown exclusively in Upper Egypt. However, the production numbers suggest that sugar cane volumes fell by ten percent between 1995-1999 in Upper Egypt, in all likelihood with important effects on rural incomes.

Although climate related factors are likely to explain most of the regional differences in cropping patterns, some of the divergence in trends may be related to the structure of land ownership. Small-scale farming is somewhat more common in Upper Egypt than in Lower Egypt, with owners of less than

two feddans accounting for 79 versus 86 percent of total cultivated land. Small farmers face different production constraints than do larger landowners. In particular, they are often constrained by lack of economies of scales, and do not have access to credit to the same degree. For example, the transition to higher value crops such as fruits can be undertaken only by more prosperous peasants – first because fruit cultivation, for technical reasons, requires a relatively large scale of land, and second because the production of fruits is normally associated with long gestation periods that cannot be born by poor small landowners. Small landowners also lack assets that could be used as credit guarantees for more technology intensive ventures.

The scant evidence at hand, therefore, points to the low level and growth in productivity in the agricultural sector in Upper Egypt as a key explanatory factor for poverty developments. This is due to the type of crops that are and can be growth in the region, and due also, perhaps, to technological constraints. Rural incomes in this region have stagnated owing to low productivity in agriculture combined with a large share of agricultural employment, which in turn will have constrained overall demand in rural areas, thereby affecting also other sectors negatively. Lower Egypt has experienced the opposite. With a much higher share of high-value crops, the region has been able to reduce agricultural labor and increase output, while surplus labor was absorbed in other vibrant sectors, including manufacturing, and in the service sector catering also to a more buoyant local demand.

E. Regional Divergence and Growth Elasticity

The Determinants of Regional Growth

What can explain Upper Egypt's slowdown in growth rates and in employment creation compared to other regions? Lack of growth and employment creation in Upper Egypt has left the region with increased poverty. Although a full analysis of regional sources of growth is hampered by lack of data – and beyond the scope of this study – basic factors that could influence the regional capacity for generating growth can be identified. These would include labor, human capital, and investment levels. Some indicators relating to these variables and comparing the regions are displayed in table 4.3.

Table 4.3 Potential growth determinants by region.

	Population (% of total)		Ratio of investment to pop. share 1/	Labor force as share of total pop. 2/		Employed Labor Force with at least intermediate level of education	
	1996	**2000**	**1998-2001**	**1995/1996**	**1999/2000**	**1995/1996**	**1999/2000**
Metropolitan	18	19	153	28.8	31.7	31	38
Lower Egypt	43	44	50	30.2	31.3	17	23
Upper Egypt	37	36	56	26.2	25.8	14	17
Total	100	100	100	29.1	28.8	18	23

1. Ratio of regional investment as share of total investment over regional population as share of total population. 2. Labor force 15+ as percentage of total regional population, 1999.
Source: INP HDR (population and labor force), Ministry of Planning (investment), El-Laithy and Lokshin, 2002 (level of education).

Investment levels do not fully explain the growth divergence. At the end of the 1990s, investment was predominantly allocated to the Metropolitan areas, probably related to the construction and manufacturing booms. In the fourth plan, for instance, the Metropolitan areas were allocated half of investments in industry, and over a quarter of investments in services. But Upper Egypt was allocated a small percentage of investments compared to its population size, especially in industry (6.3 percent of investments) and services (13.6 percent). However, in agriculture, Upper Egypt's share was 44.5 percent.

But 28 percent of agricultural investment went to just two governorates – Giza and Aswan – the latter probably due to Toske project and the high dam, both located in this governorate.[7]

Without further disaggregation into type of investment (public vs. private, type of sectors, etc.), it cannot be concluded that investment levels *per se* was the major reason for growth divergence between these two regions, although it may well explain the growth spurt in Metropolitan areas.

Table 4.4 Elasticity of poverty measures to mean expenditures and inequality, 1999/2000

Region	Poverty Measure	Expenditure Elasticity	Gini Index Elasticity
Metropolitan	P0	-5.5	11.6
	P1	-6.6	17.0
	P2	-7.1	21.1
Lower urban	P0	-5.9	6.4
	P1	-5.8	8.4
	P2	-5.1	9.7
Lower rural	P0	-5.8	3.5
	P1	-7.0	5.8
	P2	-7.3	7.6
Upper urban	P0	-3.2	3.2
	P1	-4.2	6.2
	P2	-4.7	8.7
Upper rural	P0	-2.7	0.8
	P1	-4.1	2.6
	P2	-5.1	4.2

Source: El-Laithy and Lokshin, 2002

But lower levels of human capital and lower participation rates have put Upper Egypt at a disadvantage. The share of labor force in total population is the lowest in Upper Egypt, where labor participation also fell, albeit marginally, between 1995-1999, possibly reflecting discouraged workers quitting the labor force. Lower Egypt, in contrast, has as high a labor force participation as Metropolitan areas and participation also increased slightly in the period 1995-1999. The workforce in Upper Egypt, hence, had to provide for more people than the workforce in Lower Egypt. Similarly, the workforce in Upper Egypt remains less educated than the workforce in Lower Egypt, and much less so than in Metropolitan areas, although the level of education improved over time. The education gap is even more marked for the rural areas in Lower and Upper Egypt respectively. These two factors taken together – a lower level of human capital and a lower participation rate – are strong candidates for explaining the growth divergence.

The response of poverty to aggregate growth

However, even if Upper Egypt could have achieved the same growth rates as Lower Egypt or Metropolitan areas, poverty would not have been reduced to the same degree. The two regions differ not only in their levels of growth, but also in how much a given growth rate can reduce poverty levels. In fact, calculations of the elasticity of poverty to growth – i.e., the percentage change in the poverty rate given a percentage change in

Table 4.5 Potential determinants of poverty-growth elasticities, Lower and Upper Egypt

1996	Lower Egypt	Upper Egypt
Infant mortality rate (per thousand live births)	20.4	37.6
Female literacy rate (percent, rural areas)	35.1	20.4
Initial income disparity rural-urban ([percent) 1/	76.2	55.7
Consumption disparity rural-urban (percent) 2/	71.0	59.6
Share of small farmers 3/	78.8	85.7

Source: INP HDR, Calculated from El-Laithy and Lokshin, 2002, CAPMAS Statistical yearbook

1. Ratio of rural mean income to urban mean income
2. Ratio of rural mean consumption to urban mean consumption
3. Share of owners with less than 2 feddans in total cultivated land area

[7] El Hakim (2002)

Tool Box 4.7 Determinants of poverty-growth elasticities: The case of India

Despite economic growth, the rate of poverty reduction in India has benefited the poor unevenly across Indian states – that is the elasticity of poverty reduction to economic growth (or non-agricultural output) has varied. One possible explanation, which has support from some cross-country regressions, is that certain types of initial inequalities can severely impede the prospects for growth-mediated poverty reduction (Ravallion, 2001). The factors identified by these studies are pervasive credit market imperfections, greater initial inequality of assets (particularly of land) and low basic education attainments. Moreover, initial income disparity between urban and rural sectors can also limit poverty reduction if growth occurs in a dualistic labor market environment.

For India, Ravallion and Datt (2002b) show that initial conditions in 1960 were significant predictors of the elasticity of poverty with respect to growth. These conditions included the average farm yield, the ratio of urban to rural average consumption, the share of the rural population that is landless in the state, the state's infant mortality rate and, especially, the literacy rate – particularly the literacy rate for women. For example, more than half of the difference between the elasticity of the headcount index of poverty to non-agricultural output for Bihar (the state with the lowest absolute elasticity) and Kerala (the highest) was attributable to Kerala's substantially higher initial literacy rate.

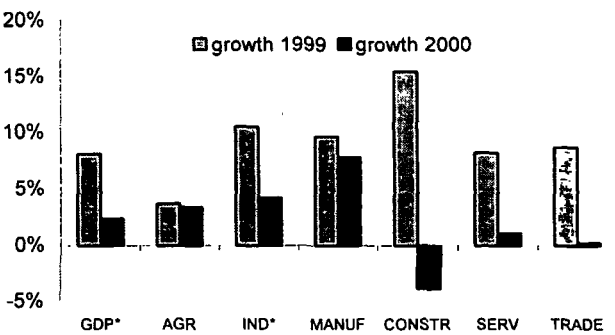
Sources: Datt and Ravallion (2002a and 2002b); Ravallion (2001)

mean regional consumption levels – show that poverty in Upper Egypt is considerably less sensitive to growth, especially in rural areas (table 4.4), consistent with the finding that poverty is deeper in this area.

Regional characteristics – mostly related to human development levels and inequality – could explain the lower elasticity of growth to poverty. There are several potential explanations for why poverty-growth elasticities differ, based on how well placed the poor are to take advantage of economic growth. Recent research on India (see Tool Box 4.7) has identified the degree of inequality in the structure of land ownership, rural-urban income and consumption disparities and basic health and education indicators among other things as key factors (as seen in table 4.3 above, many of these determinants could, of course, also be explaining differences in growth rates). Using some of the same indicators which proved important in the case of India, it is clear that Upper Egypt is disadvantaged compared to Lower Egypt (table 4.5). Infant mortality rates are almost twice as high and female literacy rates only 60 percent of those in Lower Egypt, and urban-rural income and expenditure disparities are larger. There is also some, although less blatant, difference in land ownership structure. Taken together, weaker health, lower levels of education, and a stronger initial dualistic economic structure may have prevented the poor in Upper Egypt from taking advantage of economic opportunities.

In conclusion, the combination of lower regional capacity to generate growth, and lower capacity of the poor to participate in fast growing activities, left Upper Egypt behind in the latter half of the 1990s. Clearly, the status of Upper Egypt relative to other regions needs to become a focus for continued poverty reduction over the longer term. In particular, improvements in education and health could greatly contribute to improving the region's capacity to participate in economic growth, and the capacity of the poor to benefit from it.

Fig 4.7 Growth rates in 1999 vs. 2000



Source: World Bank data
* Excluding mining

Growth Beyond the Year 2000

As of the year 2000, the economic situation has changed in Egypt and economic growth rates have dropped quite significantly, especially in the construction and services sectors (figure 4.10). Inasmuch as nontradables were driving growth and poverty developments between 1995-1999, the collapse in construction and services will have had important effects on employment, income and poverty. There is a risk that the poverty reduction, perhaps particularly in Lower Egypt areas, has slowed down significantly. First, the former beneficiaries of the growth boom will be worse affected by its collapse. In addition, the elasticities of poverty to expenditure growth were the highest in this region, and even a small reduction in average output may have affected them considerably.

Recent developments thus point to the importance of increasing the level of growth and reducing its volatility over the long term. While the nontradeables sector boom may have contributed to poverty reduction in the second half of the 1990s, it has proven less capable of providing a solution for further poverty reduction beyond 2000. Instead, continued improvements in poverty will require a new emphasis on encouraging productivity growth.

5. TOWARDS A POVERTY REDUCTION STRATEGY FOR EGYPT

The safety net is a key element of a poverty reduction strategy for Egypt, protecting those who are unable to receive sufficient income through their own efforts.

In Egypt, the largest and most effective safety net program is the bread subsidy, the operation of which lifted 730,000 people out of poverty in 1999/2000. It is, however, quite inefficient as a poverty-targeted intervention, since subsidized bread is available to all in the population. On the other hand, the subsidy on cooking oil was much less effective -- only easing poverty for 170,000 people. The resources used for the oil subsidy, therefore, would be much more useful in poverty reduction if diverted to better-targeted programs such as the social security transfers. These transfers are effective in reducing poverty, but suffer from being underfunded. Increasing the per-household amount and further increasing coverage would be the most effective short-run strengthening of the safety net.

Detailed sectoral analysis for Egypt remains to be done, but the analysis in this report, which only covers the period 1995-1996 to 1999-2000, points to five preliminary *elements of a poverty reduction strategy for Egypt. They are: Setting the economic foundations for more sustainable growth in jobs, productivity and incomes for the poorest groups; Ensuring better incomes and opportunities for the future through education; Ensuring that growing regional disparities in incomes, opportunities and services are reversed; Better protecting the most vulnerable in society, especially those who are unable to obtain sufficient incomes through the labor market: and Improving the quality and frequency of data collection and monitoring outcomes, especially at the regional level.*

A. Protecting the Most Vulnerable

The existing safety net

While a prime goal for the poverty reduction strategy is to enable Egyptians to have sufficient income and other assets to move out of poverty, the 'safety net' to protect those who are unable to do so is also a key component. The safety net is especially important for transitional periods – either of short duration (that is, preventing starvation or school drop-outs when a primary earner in the household loses his or her job), or for longer durations (such as, for example, the period between when investments in a region is made and when growth and employment increases actually occur). While in Egypt, as in other developing countries, families and communities provide a large part of help to those in need, the state also has a role in providing for such an eventuality (Tool Box 5.1).

The existing government-provided safety net is targeted to various groups – including the poor, the unemployed, and the elderly.[1] The are three main social safety net programs – the consumer food subsidy program, the cash transfers from the Ministry of Social Affairs, and the Social Fund for Development (SFD, which spent 0.23 percent of GDP). In addition, there is the social insurance system, which is the Government's program to help combat poverty among the elderly (although only those elderly who had worked in the formal sector and thus contributed to the scheme are eligible). These safety net programs can be categorized into two groups: welfare and developmental programs. The food subsidy programs and the cash transfer programs fall under the welfare category, representing cash and in kind assistance to the population. The Social Fund (and microcredit programs) are supported by the

[1] This section relies on the "Report to the Social Safety Nets Task Force: Arab Republic of Egypt," The World Bank, 2001.

Tool Box 5.1: Public versus private provision of safety nets

Despite the development of formal social protection systems in developing countries, families and communities are still the major providers of social security. Incomes of those who are unable to make a good living are, especially in developing countries, often supplemented by family and kin, through gift exchange or community support.

Informal transfers have two advantages over more arms' length (public) assistance. First, it is likely that families or communities are better able, compared to the State, to get information about who among them is suffering from poverty. If the onset of poverty is sudden, they are also arguably better able to respond quickly to meet their need. Second, in many cases, they may also be better at enforcing the implicit assistance contract—recognizing when the recipient is no longer in distress and breaking off assistance.

Yet, state-directed income transfers to poorer groups form an important part of the "safety net" in most industrialized countries and transition economies, as well as in many developing countries. But the origins of such public assistance schemes are recent, beginning in Western Europe in the early part of this century, adopted in the United States during the "New Deal" years and in other countries later on.

Are public schemes necessary? There are two major arguments for government intervention in developing countries. The first is that aging populations, growing urbanization and the rising number of nuclear families has raised the need for formal provision. Community and family ties are weakened by these forces, and mutual aid and mutual insurance mechanisms, strongly establishec in small village or tribal groups, become easier to circumvent. A second argument is that family and community resources may be insufficient when it comes to major shocks—and thus the resources of the state may be necessary to adequately protect the populace from deprivation. For one, an economic shock may affect everyone in the family (if it is a macroeconomic downturn) or community (if it is localized, such as a drought or flood). Moreover, if shocks are frequent, the resources of the family or community may be eroded quickly, leaving no surplus to share with the least fortunate among them.

There is, however, cause for concern that competition by the government in providing social transfers may drive out such private arrangements as family transfers (Morduch 1999). For example, a simulation study from the Philippines shows a stark picture – it simulated the results of the introduction of an unemployment insurance scheme and found that net private transfers to the unemployed would fall by 92 pesos for every 100 given by the government (Cox and Jimenez 1995). While this does not argue that public transfers would lower social welfare – rather the contrary – the impact of public transfer programs would be much smaller than would have been expected otherwise.

Source: Banerji (2002)

Government primarily for their development impact, including their contribution to employment generation.

The food subsidy program reaches the largest share of the Egyptian population and is one of the oldest in terms of continuity of assistance delivered to the population. It provides all the population with a subsidy on *baladi* (or indigenous) bread, which is provided at about one-third the cost of production. Subsidies on sugar and on cooking oil are more restricted, and are given out through a two-tier system of ration cards that are based on incomes and need. This is by far the largest safety net program, spending 1.5 percent of GDP (or about LE 70 per capita per year) in 1999.

The cash transfer programs from the Ministry of Social Affairs are less effective suffer from low total funding for the programs, and a low per-family transfer amount. They include 'social security' payments, and Sadat and Mubarak pensions. They are made to poor families who do not have recourse to the labor market for income whether due to old age, disability, or because the family is headed by a woman with limited employment opportunities. But total funding was only 0.04 percent of GDP in 1999; actual receipts (from the HIECS) were LE 3.50 per poor person per month.

Technical Box 5.2: Sources of Income of the Poor

Income statistics from household surveys are liable to be somewhat misleading, for the reasons mentioned in tool box 2.2 of this report. Yet, while the precise numbers for income can be misleading, the general pattern of distribution of income sources can be more reliable and informative.

In Egypt, as elsewhere in the world, **wages** are the main source of income – 40 percent of total income (43 percent for the poor in 1999/2000. Wages are more important for the poor than for the non-poor, and for those in urban regions than those in rural regions. Given the large differences in human capital (education and skills) between the poor and non-poor, there is a correspondingly discrepancy between wages of the poor and the non-poor. Although poor individuals are 17 percent of all individuals in the sample, they receive only 7 percent of total income, and 8 percent of total income from wages.

Income from **transfers** (including government transfers – government pensions, social insurance pensions, Sadat pensions anc social security benefits – private transfers, and remittances) provided 10 percent of the income of the poor (compared to 15 percent for the non-poor), yet the poor received only 5 percent of all national transfers. There were large regional differences – income from transfers was 22 percent of the income of the poor in Metropolitan regions, but only 9 percent of income of the poor in the Upper Rural region.

Farm income is the second important source of income of the poor, accounting for 29 percent of their total income. The next most important source of income is non-farm (or **self-employment**) income, 20 percent of all income sources.

Non-wage income drove the decrease in poverty between 1995/1996 and 1999/2000. During the period, while the average income gap between the poor and non poor widened by about 4 percentage points, the wage gap rose by 9 percentage points, and the income transfers gap by 3 percentage points.

The Social Fund for Development aims to create sustainable employment opportunities for groups at risk. The targeted groups include new graduates, unemployed youth, displaced public enterprise workers and female-headed households. The main programs it supports are the Small Enterprise Development Organization, the Public Works Program, Community Development Program, and the Human Resources Development Program. The program was designed to enhance these groups' opportunities for gainful employment, increase their access to basic services, and to improve their productivity.

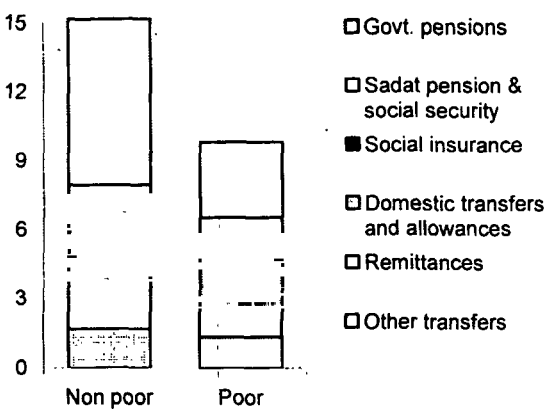
Government and private transfers as a share of income

Transfers were an important component of income reported in the HIECS in 1999/2000, being almost 15 percent of household income – but they were only one-tenth of the income of the poor (technical box 5.2). By far the single largest component of reported transfers were those from the government – and these, in turn, were dominated by pensions (figure 5.1).

Private transfers and remittances were, on average, not an important source of income. Even allowing for the fact that they are likely to be under-reported, their magnitude was small, and smaller still for the poor (figure 5.1).

Transfers did not greatly affect the welfare of the poor, partly because as a whole they were unequally distributed between the non-poor and the poor. The largest single transfer from the government were the pensions, and these were extremely unequally distributed, with the non-poor, representing 83 percent of the population, receiving almost 97 percent of government pensions. This is, of course, not surprising, as most of the poor do not work in the regulated sector and hence are not covered by any type of social insurance schemes. While remittances and private transfers to the poor accounted for 4.4 and 5.3 percent of total income

Fig 5.1 Transfers as share of reported income (%), 1999/2000



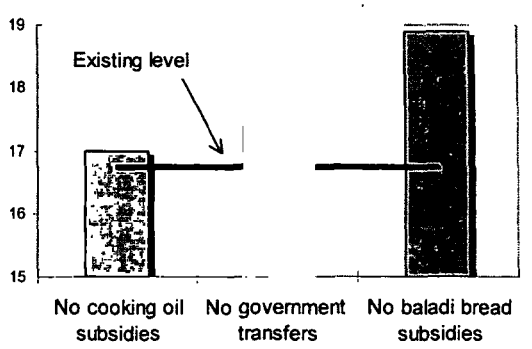
transfers respectively, they represented only 1.2 and 2.2 percent of total income of the poor.

Simulating the effect of various targeting mechanisms

The poverty-targeted government transfers are somewhat targeted to the poor, although the non-poor still receive the majority of resources. As mentioned earlier, non-pension government transfers – social security, Sadat pensions and social insurance – were not very significant in terms their impact on household incomes of either the poor (1.7 percent) or non poor (1.3 percent), but they did make up a marginally greater share of the incomes of the poor. Their share of income for the poor was higher in poorer regions – 2.2 percent in Upper Rural Egypt, versus 0.9 percent in the Metropolitan areas. Still, the poor received only 13.9 percent of all Sadat pensions and 16.1 percent of all social security benefits (figure 5.1). Although, in general, per recipient transfers received by the non-poor were about double that received by the poor, there were no differences on Sadat and social security transfers between the poor and non-poor – both received almost L.E. 858 per year in 1999/2000.

The subsidy on baladi bread was the most effective at lifting people out of poverty. Without the bread subsidy, 730,00 more people would have been in poverty (18.9 percent in poverty in total) in 1999/2000 (figure 5.2). However, since all Egyptians, rich and poor, can avail of the subsidy, the efficiency of the scheme as a poverty-targeted measure was low – essentially, although only about 11.5 million would have been poor without the bread subsidy, all 64 million people in Egypt were enjoying the subsidy. So targeting the subsidy more directly to the poorest, perhaps through 'self-targeting' mechanisms, can continue its poverty-reduction effect while vastly lowering its cost.

Fig 5.2 Poverty incidence would increase if existing transfers and subsidies were removed



On the other hand, the subsidy on cooking oil was far less effective or efficient, only easing poverty for 170,000 people. ***The resources used for the oil subsidy, therefore, would be much more useful in poverty reduction if diverted to better-targeted programs such as the social security transfers*** (below).

Although social security transfers were very small in absolute terms or as a percentage of total income of the poor, they have had some effect in reducing poverty. In 1999/2000, if there were no government transfers, the poverty rate would have increased by 0.55 percentage points, from 16.7 to 17.4 percent. Thus, under this scheme, almost 4 percent of the poor came out of poverty. Although these changes in poverty were small, this was partly because the total size of government social assistance received was small – just LE 449 million in 1999/2000.

Better targeting can greatly improve the impact of government transfers on poverty reduction. If, for instance, all the poor could somehow be identified and assistance provided to them (so-called 'perfect targeting', which is unattainable in practice but an useful benchmark), even a small amount of resources could have been helpful. If, for instance, the 449 million LE were distributed equally among the poor, the poverty rate would have been 14.25 percent, and 18 percent of the poor would come out of poverty. This points out to the impact of better targeting to poverty reduction. Thus if even this small amount were distributed perfectly, *the poverty reduction effect would have exceeded the impact of a 3 percent annual growth rate.*

Clearly, perfect targeting is not feasible – but targeting based on the characteristics of the poor are a more effective measure. Table 5.1 shows the result of several alternative characteristic targeting simulations – all under the assumption that the level of direct transfers is raised to LE 1200 instead of the

current average of about LE 890 per household. For example, the table (line 4) shows the results of targeting all households that were headed by a person with lower than basic education that lived in household without running water. If only they were given the LE 1200 transfer, the poverty rate would have declined by 2.9 percentage points, and accordingly almost 1.8 million of the poor in 1999/2000 would have come out of poverty. At the same time, this increase in coverage would have meant that the total cost would be significantly higher – of the order of three times the 1999/2000 outlays, or a little less than LE 2 billion. But the efficiency of this scheme, as measured by the cost per person lifted out of poverty, would have improved – from the LE 1096 it took under the existing scheme to LE 1049.

Table 5.1 Alternative targeting measures

		P0 (Poverty incidence, %)	Change in P0 from no transfers	Number of poor lifted out of poverty (mill.)	Cost efficiency (cost/ person lifted out of poverty, LE)
0	No transfers	17.38			0
1	**Existing targeting**	**16.74**	**-0.64**	**0.410**	**1,096**
2	**Existing targeting with higher transfer (LE 1200)**	**16.52**	**-0.86**	**0.550**	**1,139**
3	**Target only households without tap water**	**14.17**	**-3.21**	**2.054**	**1,124**
4	**Target only HH heads w/ no basic education in houses without tap water**	**14.52**	**-2.86**	**1.830**	**1,049**
5	Target only households in houses without sewer connection	10.72	-6.66	4.262	13,727
6	Target only HH heads w/no basic education in houses without sewer connection	11.87	-5.51	3.526	11,403
7	Target only illiterate HH head, out of labor force or without permanent job	15.88	-1.50	0.960	19,047
8	Target only HH head w/ less than basic education, out of labor force or without permanent job	15.53	-1.85	1.184	22,087
9	Perfect targeting	8.43	-8.95	5.728	145

Source: Calculations from El-Laithy and Lokshin (2002)

As the poor have larger households, increasing coverage of the poor can have escalating costs. For example, because only 21 percent of the poor live in houses connected to sewerage network, targeting household living in houses not connected to sewerage network (line 5 in table 5.1) will reduce poverty by 7 percentage points. But the total cost will be huge, at LE 58,512 million, and so will the efficiency as measured by the cost per person lifted out of poverty.

Experiments that use the Egyptian household data, especially at the regional levels, to simulate the effect of characteristic targeting can yield a substantially better targeting of government transfers, and thus a more efficient and effective safety net. Given the correlates of poverty described in Chapter 3, combinations such as the ones in Table 5.1 should be tried at the level of each region, to find the most appropriate targeting measure. In practice, such targeting would be supplemented by more subjective evaluations of household poverty by regional social workers, as is currently the case, to improve the effectiveness of government transfers even further.

B. An Agenda for Poverty Reduction

The detailed poverty map and profile for Egypt is just the first stage towards devising an effective, dynamic and comprehensive poverty reduction strategy for Egypt. However, the major findings from the analysis in the report can form the basis for setting the priority areas for deeper analysis for a comprehensive poverty reduction strategy for Egypt.

The major thrust of the strategy would have five pillars, which flow from the major findings of this report that are summarized in Technical box 5.5 at the end of the chapter. They are ***job growth, education, regional balance, safety net and monitoring.*** Further and deeper analytical work will need to be done to develop these pillars, and are part of the agenda for further work on the strategy.

Elements of each of these pillars are set out below:

1. **Job growth:** Set the economic foundations for more sustainable growth in jobs, productivity and incomes for the poorest groups:
   - ❖ A more sustainable growth path would involve relying more on productivity growth and less on pure domestic expansionary policies.
   - ❖ The analysis in this report (also see the policy simulations in Technical box 5.4) shows that the sectoral balance will matter, with a continuing move away from the low-wage sectors such as agriculture and a towards manufacturing and high-end services.
   - ❖ Given that many of the poor are going to continue to be employed in agriculture, productivity and flexibility in agriculture has to be improved, with agricultural extension services being made available to the poorest farmers. The effects of the reform of the land tenure system on the poorest farmers will also need to be investigated.
   - ❖ More openness to productive international investment and exports would be the most effective way to achieve these large productivity gains. Once again, an increasing reliance on the exports of manufacturing goods and high-end services (and thus a lowering of domestic protectionary policies) would both impel productivity (and thus wage) gains, while expanding employment to meet the needs of the larger international market.
   - ❖ Given that the lowest poverty rates are in the 'non-agricultural self-employed hiring others' category, continue the concerted push to improve entrepreneurial activity. For this, seed money and training in management and accounting practices are necessary, but so is the systematic lowering of barriers to entry, especially in the poorer areas.
2. **Education:** Ensure better incomes and opportunities for the future:
   - ❖ Given the enormous return that lowering illiteracy has on reducing poverty in Egypt (technical box 5.4), continue the expansion to universal primary education, especially in rural areas and to girls.
   - ❖ Lower child labor (and thus school drop-outs) through direct interventions – for example, a school lunch program in poor areas can both increase attendance and lower deprivation.
   - ❖ Provide high-quality and market-relevant secondary education to the youth. Secondary education also increases earning power, but only if the skills imparted by school are demanded by the job market.
3. **Regional balance:** Ensure that growing regional disparities in incomes, opportunities and services are reversed:
   - ❖ Upper Egypt in general, and Upper Rural Egypt in particular, needs a continued push in terms of effective development investments (see locational effects in Technical box 5.4) . This can include increasing entrepreneurial and employment options, improving educational opportunities,

Tool Box 5.3: Elements of a good self-targeted "workfare" program

"Workfare" programs attempt to reduce poverty by providing low-paid work to those who need it. They are also flexible, in the sense that as the labor market improves, the demand for such work, and thus the cost, falls. But for such programs to be effective, Ravallion (1999) suggests that they have to be designed with some essentials in mind:

- To ensure that *only* the poor avail of the program, wage rates should be below market wages for unskilled manual labor in agriculture or the informal sector wage--so that people do not leave existing work to avail of higher-paid public employment;
- If fiscal constraints mean that more people are likely to apply than can be funded, the program should be focused on just the poorest areas (e.g., rural areas with limited agricultural reform)
- The actual work done should be more labor intensive than in similar projects in the area
- The assets created should be chosen to be of most benefit to the poor; if they benefit the non-poor, the beneficiary group should share in the cost, with the funds going back to the workfare program.

mitigating the health effects associated with poverty, or improving the coverage of sanitation and water supply systems.

- Poverty reduction strategies – and associated policy instruments – need to be developed incorporating the particular poverty profile of the region, governorate or district, using the analysis from household surveys as well as other non-income indicators.
- Community-level participation in the development of poverty reduction strategies is an additional way to ensure that the strategies are tailored to the individual community's needs.

4. **Safety Net:** Better protect the most vulnerable in society, especially those who are unable to obtain sufficient incomes through the labor market:
   - Improve the size of the existing government transfers, so that the poorest families get a more useful level of transfer (beyond the LE 70 or so a month received in 2001-2002). Moreover, adjust the level for increases in the cost of living.
   - Improve the targeting of transfers by increasing the eligibility criteria to other variables – such as literacy level of household head and presence of sanitary facilities – and combine that with subjective evaluation of poverty status by social workers.
   - Target transfers regionally, with higher allocations to poorer governorates (along with, perhaps, more social workers for outreach and evaluation).
   - Consider introducing a broader public works program than that run by the Social Fund, aimed specifically to poverty alleviation rather than the creation of infrastructure (Tool box 5.3).
5. **Monitoring:** Improve the quality and frequency of data collection and monitoring outcomes, especially at the regional level.
   - Consider introducing annual household surveys with a smaller sample size (e.g., an annual HIECS with a randomly selected sample of 10,000 households, which would be statistically representative and valid, rather than a 48,000 household survey every 5 years).
   - Continue ensuring that the sample is regionally representative.
   - Initiate a small panel survey to better track changes in living conditions.
   - Revise the questionnaire to add questions in under-represented analytical areas, such as healthcare use and outcomes, and time use by family members.
   - Improve the quality and regional coverage of labor, agricultural, industrial and macroeconomic data.
   - Make them freely available to researchers, to substantially increase the volume and quality of analysis that would feed back into effective and dynamic policymaking.

Technical Box 5.4 Multivariate analysis of the determinants of expenditure

A multivariate analysis of expenditures can be used to assess the impact of a change in a particular factor (affected by a policy variable) on the probability of an individual being poor, with all other factors are kept constant.

El-Laithy and Lokshin (2002) used the HIECS data for 1995/1996 and 1999/2000 to perform such an analysis. First, they modeled the determinants of expenditure per person, used to define poverty measures. Then, they estimated the expenditure per person when certain factors change, keeping other factors constant, and finally used these model estimates to predict poverty levels (reported in the following Technical box).

From the analysis of the cross-tabulations, the determinants of poverty were grouped into three areas: *demographics* (household size, age of head of household, and gender of household head), *education* (the share of literate persons and of university graduates, and the education status of head of household), and *employment* (the share employed persons, and some combined employment characteristics of the head of household). The effect of *location* was analyzed through regional dummies, to capture any region-specific factors not due to differences in education, employment and demographics. The analysis found that most of the chosen variables were highly significant (except the gender and out of human force variables) and adjusted R^2 exceeded 50 percent. The results below are for 1999/2000, but were similar in 1995/1996.

* Demographics. Household size here had a significant *positive* coefficient with the log of total household expenditure, with the elasticity of total household expenditure to household size at about 0.45 (comparable with other studies –Datt et al (1998) found a elasticity of about 0.55 for 1997). In other words, when household size increases by 1 percent, total household expenditure would increase by 0.45 percent. Note that by this analysis, the inverse relation between poverty levels and household size (as in Lipton and Ravallion 1993 and Lanjouw and Ravallion 1995) is preserved, as the household-specific poverty line (which takes economies of scale into account) will also become higher.

Household composition also matters. For instance, controlling for household size, the share of children of less than six years of age and between 6-14 years of age had a significant negative effect on household expenditure. One percentage change in these shares reduced household expenditure proportionally by 0.25 and 0.16 percent, respectively. This was also true for the share of elderly and share of adult females. The age of the head of the household had a significant positive effect on living standards, but, after controlling for other determinants, female headship did not have a significant effect on expenditures.

* Education. Educational variables were the strongest determinants of living standards. Keeping household size constant, the share of literate persons and the share of university graduates had significant positive effects on the expenditure level; the implied rate of return of a larger share of educated individuals on log expenditure were 0.49 and 0.28 percent, respectively. The head's education also had a significant effect on household living standards – relative to a post graduate level for the head, all other (lower) levels had a negative effect on household expenditure, with the largest negative effect for illiterate household heads. Thus, as the education of the household head rose, so did household living standards. Given that the cross-tabulation also indicated that the education of the head also affects the educational attainment of the other income earners in the household, this indicates the importance of inter-generational human capital effects on living standards.

* Employment. Relative to the omitted 'out of labor force' category, the largest positive impact on expenditure level were from non-agricultural self-employment, hiring others. The smallest significant effect was for wage workers in agriculture. In part, this reflects wage and productivity differentials across the sectors. Rates of return in non-agricultural activities were about double those for agricultural ones, especially for self-employed hiring others or wage workers.

* Location. As expected, relative to the Metropolitan region, being in all other regions had a negative effect on expenditure. The largest negative effect on living standards was in the Upper Rural region, followed by the Upper Urban region. To illustrate, it was estimated that the expenditure level of a household who live in the Upper Rural region would be only 63.6 percent of that of a household living in Metropolitan region. The corresponding figure for Upper Urban was 71.2 percent. The rank of regions with respect to their impact on expenditure levels agreed exactly with their order according to their poverty levels.

* Changes over time. Comparing regression results of 1995/1996 with those of 1999/2000 explain some of the observed differences in living standards between the two years. For example, the rates of return on human capital variables (share of educated people and of employed) and demographic characteristics decreased between the two years (e.g., the coefficient of the share of literate is 0.36 in 1995/1996 compared to 0.28 in 1999/2000, and that of the share of children 6-14 fell from –0.22 to -0.16). This might explain the increasing poverty in Upper Egypt regions, despite the improvements there in human capital and demographic profiles.

Technical Box 5.5 Major analytical findings

❖ **Growth, opportunities and poverty**

- Rapid **growth** in jobs and incomes in the late 1990s led to a drop in poverty *(Chapter 2)*.
- This growth was, however, obtained through policies that were **not fully sustainable** – domestic fiscal and monetary expansion and reliance on foreign tourists *(Chapter 1)*.
- Although construction and agriculture provided jobs, low productivity meant that these **jobs were usually low-paying**, and thus poverty was high for workers in these sectors – and for seasonal and occasional workers, also primarily in these two sectors *(Chapters 3 and 4)*.
- **Unemployment** was high in urban areas – though only 6% of the labor force was unemployed for the country as a whole, the rates were 7.4% for Metropolitan, 8.6% for Lower Urban, and 10.1% for Upper Urban regions. Unemployment among youth (age 15-25) was particularly severe, but this was not correlated with poverty. There was a large **gender bias** in youth unemployment, with a 4:1 ratio of unemployment to employment for young females, as opposed to a 1:1 ratio for young men *(Chapter 3)*.
- **Female-headed households** received a third of their income from transfers, but were not particularly poor unless the household head was a widow *(Chapter 3)*.

❖ **Regional disparities**

- The pattern of **growth was regionally biased**, since most import-substituting manufacturing (which created incomes) and domestic credit-fuelled construction and trading (which created jobs) were in northern (Metropolitan and Lower) Egypt. *(Chapters 1 and 4)*.
- For both incomes and poverty, the **regional divergence grew** greatly during this period, with Metropolitan areas growing incomes and reducing poverty the fastest, followed by Lower Egypt. Upper Egypt, especially rural Upper Egypt, languished, with the number of the very poor actually growing slightly *(Chapters 1, 2, 3 and 4)*.
- **Agriculture showed a similar regional bias**, with incomes growing and poverty being lowered in Lower Rural Egypt, while the reverse held in Upper Rural Egypt *(Chapters 2 and 4)*.
- **Education did not have high returns in Upper Egypt**, where the poor and non-poor had similar educational profiles. Child labor (measured by children aged 6-15 years not in school) was the highest, at almost 8%, in the Upper Rural region *(Chapter 3)*.
- **Household size**, significantly correlated with poverty, was highest in the poorest Upper Rural region *(Chapter 3)*.
- The Metropolitan and Lower Urban areas were more likely to have **female-headed households** *(Chapter 3)*.
- The Upper Rural region had the lowest rate of **access to sanitation** services *(Chapter 3)*.

❖ **The impact of education**

- The **coverage of education had grown** significantly in Egypt by the end of the 1990s – female illiteracy fell by 25% since 1980, net primary enrolment was 92.4% of the age group in 1999, and youth literacy was 69.8% in 2000 *(Chapter 2)*. But there were regional differences (above).
- Education was the factor that **most affected poverty status** – more than 45 percent of the poor were illiterate. Poverty fell as educational attainment grew, so small improvements in education can lead to large drops in poverty *(Chapter 3)*.
- There was a **gender gap in education** – the illiteracy rate for children of age 12-15 years for females was almost twice that of males (15.5 percent and 8 percent). This was also true for the poor and non poor *(Chapter 3)*.
- **Child labor** (and thus lack of schooling) was more prevalent in poorer households. The share of working children in households with female heads was twice that of male heads in urban areas, and 1.3 times in rural areas *(Chapter 3)*.
- Poverty perpetuates the **inter-generational transfer** of low education – less educated household heads were more likely to have poorly educated household members *(Chapter 3)*.

❖ **Protecting today's vulnerable**

- In the existing social safety net, **cash transfers had some impact on reducing poverty** – without them, 350,000 more individuals would have been in poverty in 1999/2000 *(Chapter 5)*.
- Of commodity subsidies, **the subsidy on baladi bread was the most effective**, raising over 730,000 people out of poverty. On the other hand, the **cooking oil subsidy was the least effective** mechanism, lifting less than 170,000 people from poverty *(Chapter 5)*.
- The cash transfer program is more cost-effective as a way of reducing poverty than food subsidies, but is handicapped by **low overall and individual funding levels** and inadequate poverty targeting *(Chapter 5)*.
- **Improving targeting** of existing transfers can have extremely high payoffs – in the ideal, if there is perfect targeting, the poverty reduction effect of existing resources would exceed the impact of a 3 percent annual growth rate. In the absence of perfect targeting, various targeting schemes can considerably improve the safety net, including regional targeting and categorical targeting, such as to households where the heads have no basic education and live in houses without tap water *(Chapters 3 and 5)*.

❖ **Monitoring and data issues**

- The **HIECS is one of the best sources** of data for poverty monitoring in Egypt *(Chapter 2)*.
- It has the great advantage that the **large sample size** allows effective poverty monitoring at governorate and district levels, not just the national level *(Chapter 2)*.
- However, its **infrequency** (every 5 years) also limits its efficacy as a flexible policy tool – and so smaller samples over more frequent intervals should be considered. In addition, some of the areas of the questionnaire can be strengthened, including, for example, questions on time use by women and health indicators *(Chapters 2 and 3)*.
- The greatest disadvantage to effectively monitoring poverty reduction in Egypt is the relatively **poor quality and availability of other data**, both at household level and, at macro level, data disaggregated by region. Improving the quality, coverage and accessibility of data should be an integral part of the poverty reduction strategy *(Chapters 2,4 and 5)*.

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ANNEX 1: DATA AND SAMPLING DESIGN

The 1999/2000 HIECS was based on the 1996 Population Censuses sample frames of 600 area sampling units distributed between urban and rural areas. The master area sample units are distributed as 360 in urban and 240 in rural areas. The area sample consists of a number of neighboring blocks contains 1500 households in urban and rural area. The frame of the 1995/96 survey is based on an updated frame of 1986 Population Census of 503 areas of 276 in urban and 227 in rural areas.

The samples of both surveys are stratified multistage random samples. The sample designs of both surveys were nationally representative and the size for both surveys is large enough to allow for inferences at the regional and governorate levels, with the exception of Frontier governorates where the sample size is small. Levels of bias and imprecision for both surveys are within statistically acceptable margins. Using the variance and mean expenditure of the 1995/96 survey, it was estimated that the sampling errors in the 19999/2000 survey were .7 percent in urban areas and .9 percent in rural areas, with 95 percent confidence level.

CAPMAS's stratified, multistage design can be explained as follows: The master sample is stratified such that urban and rural areas are self-independent strata. Each stratum (urban or rural) is divided into internal layers (being the governorates), with probability proportion to size from an updated population Census of the closest year. PSU's (areas) were systematically selected, using sampling interval and a random start. Using maps, these areas were further subdivided into a number of chunks of about 1500 households each and one chunk is chosen randomly from each area. Household lists for the selected chunks were prepared. Finally, 80 households for the 1999/2000 sample or 30 households for 1995/96 survey were selected randomly from each chunk.

Sample Size of the 1995/96 and 1999/2000 HIECS

	1995/96		1999/2000	
	Households	Individuals	Households	Individuals
Urban	6,622	28,911	28,754	125,287
Rural	8,183	45,028	19,195	100,830
Total	14,805	73,939	47,949	226,117

One interesting characteristics of the sample selection method for 1999/2000 comes from the third stage of the sampling, the systematic selection of 80 households are randomly divided into four quarters, so that 20 of households are enumerated in the one quarter of the surveyed year. Thus, all areas are represented in each quarter; therefore, no seasonal bias can be detected in any areas.

The questionnaire:

The survey was administered over 12 months, with 10 visits to each household over a period of one month.

Data of the recent survey was collected from October 1999 to September 2000. This is the largest survey ever conducted in Egypt. The last three surveys of 1990/91, 1995/96 and 1999/2000 are highly comparable in terms of sampling procedure and data collection. The measure of total consumption used in this report is quite extensive and draws upon responses of several sections of the survey. Two survey forms were used in HIECS, a diary and a main questionnaire. Each household was visited ten times over the course of one month. The enumerator gave the household a diary in the first visit and asked the respondent to report all food expenditures which the household makes every day, for a period of one month. The sum of the daily expenditure was then recorded in the main questionnaire at the end of the interview cycle. Expenditure of non-food items was collected for the previous three months or the previous year depending on the type of commodity. The annualized sum of monthly or quarterly household expenditures was then used to construct the consumption basket for total annual household expenditures. Interviewers took down household demographic information at the first interview and household income at the last two interviews. In brief, consumption is measured as the total sum of food consumption (home produced and markedly purchased), total non-food expenses, an actual or imputed rental value of housing.

The questionnaire consists of seven sections on a series of topics that integrate monetary to non-monetary measures of household welfare and a variety of household behavioral characteristics. The first section is concerned about the basic information of all household members such as age, sex, and relation to head of household, education and employment status. In the second section information on housing and basic amenities are collected. Possession of durable goods is reported in section three. Food consumption includes food that the household has purchased, grown and received from other sources for 279 items, where these data are reported in section four. Non-food consumption is the sum of expenditure of 298 non-food items, including expenditure on fuel, clothing, schooling, health, and several miscellaneous items. Information on consumption on non-food goods and services are registered in section five. Section six is concerned with Transfer and credit expenditure, while income by detailed income sources is obtained from section seven.

The 1999/2000 survey follows the 1995/96 format almost exactly, and total consumption definitions and recall periods are similar in both survey years. However, four food items and 38 non-food items were added in the 1999/2000 questionnaire. The survey methodology appears to have stabilized since the 1990/91 survey.

ANNEX 2: "HOUSEHOLD SPECIFIC" AND "PER CAPITA" POVERTY LINES

(Source: El-Laithy and Lokshin 2002)

The report follows the cost of basic needs methodology to construct household region-specific poverty lines. The food poverty line varies for each household and for each of the seven regions.

Household-specific poverty lines

Differences in poverty lines reflect variations in the food and non-food prices across the seven regions. They also incorporate household differences in the size and age composition, and their food and non-food consumption preferences.

Stage 1: An initial step in defining the **food poverty line** is the construction of a minimum food basket, which can be anchored to some normative nutritional requirements. We first estimate minimum caloric requirements for different types of individuals. Using tables from WHO, caloric needs are separately specified for urban and rural individuals, by sex and 13 age categories. For individuals over 18 years of age, WHO's recommended daily allowances are differentiated by weight and activity levels. The estimates used in this paper assume the average weight of men over 18 years of age is 70 kg and 60 kg for women. Urban individuals are assumed to need 1.8 times the average basal metabolic rate and rural individuals are assumed to need 2.0 times average BMR. Thus, each household has its own caloric requirements depending on its location, age, and gender decomposition.

Stage 2: Once the minimum caloric needs have been estimated, the next step is to determine how costly it is to obtain the minimum level of calories. We determine the cost of the calories by how they are obtained on average by the second quintile, rather than by pricing out the cheapest way of obtaining the calories or following a recommended diet. For the second quintile of households, ranked by nominal per capita consumption, average quantities of all food items is constructed. Total calories generated by this bundle are calculated using calories contents in every food items. These quantities represent the bundle used to estimate the food poverty lines, which reflect consumption preferences of the poor. This bundle was augmented/deflated to meet food requirements for each household. Then the bundle is priced using prices prevailed in each region to obtain household specific poverty line.

This stage can be explained mathematically as follows: let Zr denote the actual food consumption vector of the reference group of households who are initially deemed poor. The corresponding caloric values are represented by the vector k, and the food energy intake of the reference group is then $k_z = k.Zr'$. The recommended food energy intake for

household h is k_h. The reference food consumption bundle used in constructing the food poverty line for household h is then given by z_h, where z_h. is obtained by multiplying every element of Zr by the constant k_h/k_r. Thus, the relative quantities in the diet of the poor are preserved in setting the poverty line.

Having selected the bundle of goods, we then value it at local prices each region. Here, average unit values revealed by the households in the second quintile, for each region, were used as estimates for local prices. Unit values were obtained by dividing the reported value by its corresponding quantity.

The reference food bundle is given in Annex Table A 1.1 later. It includes 184 foods, allowing more than 410 grams of food-grains per person per day, plus small amounts of fresh fish, meats, eggs and a range of local vegetables, fruits, etc.. Of the 2310 calories per person per day that this bundle yielded, 60% came from cereals and grains. The average cost of 1000 calories generated by the reference food bundle ranged from LE 0.865 in Metropolitan, to 0.790 in Lower rural Egypt.

Stage 3: While the cost of the minimum food bundle is derived from estimated physiological needs, there is no equivalent methodology for determining the minimum non-food bundle. Following Engel's law, food shares are regressed against the logarithm of total household expenditure, logarithm of household size, share of small and older children, share of adult males and females, and share of elderly. The non-food allowance for each household can be estimated by identifying the share of non-food expenditure for households whose total expenditure is equivalent to the food poverty line. This defines the total poverty line in terms of those households who had to displace food consumption to allow for non-food expenditures, deemed a minimum indispensable level of non-food requirements.

Absolute poverty lines have been widely used in developing countries since poverty research is dominated by the concern for the attainment of basic needs and the achievement of well being in absolute terms. By this approach, household regional specific poverty lines are estimated (households with the same gender and age decomposition in each region have the same poverty lines). Obviously, this approach takes into account location, age and gender decomposition as well as economies of scale as food shares and hence non-food estimates vary according to household size, age and gender decomposition. Hence, differences in food shares resulted from additional member of specific age and gender are considered. The sharing behaviors among household members are also reflected.

To illustrate this, let us look at different poverty lines in one region, Metropolitan for instance, poverty line for a household only single male is LE 1264, if this man got married the poverty line will be LE 2242. Obviously, the latter poverty line is less than twice the former line, reflecting that economies of scale had been taken into account as well as gender differences.

Stage 4: For consistent poverty comparisons, food and total poverty lines were deflated. When deflating food poverty lines, the set of prices revealed in the 1995/96 HIECS survey were used. Ravallion argued that the use of the CPI for updating the base year poverty line might generate errors in the poverty trends since the construction of the CPI includes many items that clearly fall outside the typical consumption bundle of the poor in Egypt. An alternative source of price information is the set of implicit unit-value for food in the HIECS. The implicit prices are derived by dividing reported expenditures by quantities for each food item. These give the actual expenditures on a unit of consumption paid in each sector and date, and so they reflect the underlying differences in prices. The implicit food prices in the HIECS were used to determine the cost of the normative minimum diet in each sector and year to obtain the food consumption of the poverty line. As there unit value for non-food items cannot be obtained, official CPIs were used to deflate non-food poverty line.

Per capita Poverty Lines

Using the raw data for 1999/2000, the cost-of-basic-needs method was used to construct absolute ***per capita*** region-specific poverty lines. The poverty line is thus the sum of the food and non-food poverty lines. In estimating ***the food poverty line***, the composition of the required diet necessary to attain a stipulated food energy intake is set to accord with observed consumption patterns of the poor. The food poverty line is set at the cost of achieving a minimum requirement of food energy intake calories per capita per day (calculated as in stage 1 above). The nutrition bundle making up the food poverty line is typical of the consumption patterns and composition of households in the second quintile of the expenditure distribution. The cost of obtaining the selected diet is evaluated using actual prices for 1999/2000 for each region. Thus, relative quantities observed in the diet of the poor, and the prices they face, are maintained in constructing the poverty line.

The share of non-food expenditure was obtained by fitting Engel's curves of the food share on total expenditure, and the food poverty line was augmented to yield the poverty line, at the non-food share of those individuals whose total expenditure is equivalent to the food poverty line.

It should be noted that average household specific poverty lines differ slightly compared to per capita poverty lines as both lines were calculated on the same basis. However, there are significant differences between both lines if we look at households with smaller sizes. Household specific poverty line for a household with one elderly person is about 67 percent of per capita poverty line, in Metropolitan region. This indicates that smaller households are more likely to be classified as poor if we apply per capita poverty line but in fact, some of them are not. For instance, households with one elderly, living in Metropolitan region, and their expenditures are between LE 748 and LE1109 are classified as poor according to per capita poverty line but in fact they are not as the estimated cost of their basic needs, food and non food is only LE 748.

As the table below shows, 14.6 percent of the whole sample was classified as poor individuals using both methods. However, 2.5 percent of the sample was classified as non-poor when using household specific poverty lines but as poor when we use per capita

poverty line.

Table: Classification of the sample using different approaches to estimate poverty line, 1999/2000.

		Using Per Capita Poverty Line		
Using Household Specific Poverty Line		**Non poor**	**poor**	**Total**
	Non poor	80.8	2.5	**83.3**
	Poor	2.1	14.6	**16.7**
	Total	**82.9**	**17.1**	**100.0**

Finally, household size of the poor varies over different methods for estimating the poverty line: the per capita consumption definitions choose smaller households as poor, while the household specific definition chooses relatively larger households. This is not surprising as per capita poverty line gives the same weight for every household member including children, while household specific methodology gives smaller weights to children. This fact is suggested by looking at the average household size of the poor in both methods (table below)

Table: Average household size using different approaches to estimate poverty line, 1999/2000.

	Per Capita Poverty Line	**Household Specific Poverty Line**
Non Poor	4.569	4.552
Poor	6.875	7.156
Total	4.847	4.847

ANNEX 3: ASSESSING POVERTY OVER TIME: TESTING FOR DOMINANCE

(Source: El-laithy and Lokshin 2002)

The assessment of poverty changes and evolution is essentially arbitrary. On the one hand, the assessment of poverty changes over time depends on, and varies with, the poverty line chosen. We are not certain whether we would obtain the same conclusions if we used a different poverty line. The previous comparisons of poverty changes over time are therefore partial rather than complete. To assess robustness of the poverty measurements to the poverty lines used, dominance analysis is carried out to examine whether or not the same conclusions are obtained if the poverty line is changed.

The comparisons of poverty levels depend on the poverty line chosen, which has a certain amount of arbitrariness. It is not certain to obtain the same conclusion if a different poverty line is used. Therefore, the previous comparisons of poverty measures are a partial, rather than general, comparison. Hence, it is useful to assess whether or not we would obtain the same conclusion (ordering), if the poverty line is changed. A better way of assessing changes in poverty over time is to examine changes in any chosen poverty measure over a certain range of poverty lines. Denoting a poverty line by Z, which may vary over a range (Z_0, Z_m), analysts should be able to represent the chosen poverty measure as a function of Z, and then examine the robustness of ranks to all Z in the range. Suppose we do not know the poverty line Z, but we can be sure that it is not less than Z_0 and it does not exceed Z_m. Consider the three poverty measures mentioned above: P0, P1 and P2. Imagine the curve that is traced out as one plots P0 on the vertical axis and the poverty line on the horizontal axis, allowing the latter to vary from Z_0 to Z_m. This is simply the cumulative expenditure distribution function, which can be thought of as *the poverty incidence curve*. Each point on the curve gives the proportion of the population consuming less than the amount given on the horizontal axis; hence, this curve gives P0 on the vertical axis for a wide range of poverty line represented on the horizontal axis. If the area under the curve P0 up to each point is calculated, by means of integration, the *poverty deficit curve* is traced out. Each point on this curve is simply the value of P1 times the poverty line Z. If the area under the poverty deficit curve at each point is further calculated, a new curve is obtained, which can be termed the *poverty severity curve* (Ravallion, 1992).

Consequently, in comparing poverty between two dates or places, the cumulative frequency distribution in different dates, 1 and 2, is plotted over the whole range of the poverty line. If we find that the curve for date 1 is everywhere above that for date 2, we may conclude that the incidence of poverty is higher in date 1 than in 2, no matter what the poverty line or measure is. If the two curves intersect, then we know that some poverty lines and some poverty measures will rank the two dates differently. Therefore, it is very important in poverty comparisons over time and space to represent P0, P1 and

P2 as a function of Z. This can be derived if the cumulative distribution function is expressed in its parametric form, then integrating it to give the poverty deficit curve and hence a parametric representation of P1 can be obtained. Integrating the function of the poverty deficit curve gives the function of the severity of poverty curve. The cumulative distribution function, and hence the functional forms of P0, P1 and P2, can be derived by estimating the parametric Lorenz curve based on the 1995/96 HIECS data and then obtaining its associate cumulative distribution function. Regional curves for the three poverty indices, the head count ratio, the poverty gap index and the severity of poverty index, were plotted over the range of 30 percent and 100 percent of the mean per capita expenditure.

Curves for the three poverty measures were plotted using a wide range of values for the poverty line (30 percent to 100 percent of average per capita expenditure). These curves were used to rank poverty levels for the years 1981/82, 1990/91 and 1995/96, for a range of poverty lines. The findings are classified at the national, geographic or sectoral (urban/rural) and regional levels.

At the national level. The curves for the headcount index for 1995/96 and 1990/91 do not intersect with each other. The P0 curve for 1999/2000 is everywhere below those of 1995/96. Thus, for all poverty measures and at any poverty line, poverty was lower in 1999/2000, indicating that regardless of the poverty line chosen, poverty has decreased during the period 1995/96 and 1999/2000.

The above pattern of change holds for curves of the poverty gap index.

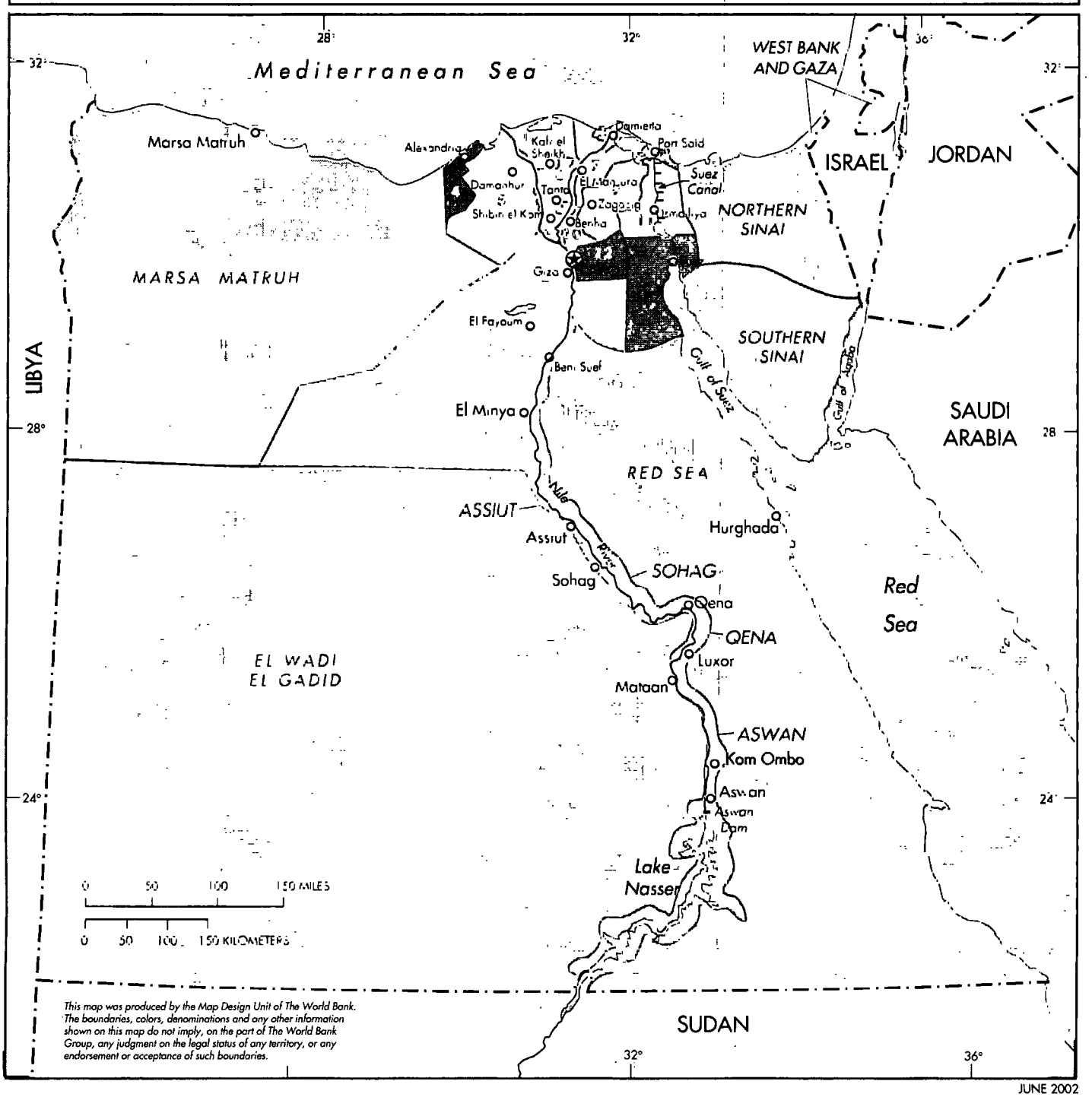
At the Regional Level. To test dominance ***within regions***, figures 2.10 to 2.15 give the corresponding headcount curves for the two years under investigation. It can be seen that the conclusion that poverty declined is robust to the choice of poverty line and poverty measure for Metropolitan and Lower Egypt regions. While poverty in Upper Egypt regions showed an increase during this period, while it increased in regions. On the other hand, the depth and severity of poverty curves exhibited robustness to the choice of poverty lines - the curves being higher in 1995/96 than in 1999/2000 in Metropolitan and Lower Egypt regions. Thus, expenditure inequality among the poor has improved during the second half of the nineties, coupled with declines in their percentage. The population in the Upper Egypt regions experienced the opposite patterns of change.

To conclude, testing dominance within regions showed that the conclusion that poverty changes is robust to the choice of poverty line and poverty measure for Upper Egypt regions, in the period 1995/96-1999/2000. However, poverty in the Metropolitan and Lower Egypt regions showed a decline during this period. It seems that reductions in poverty in the Metropolitan and Lower Egypt regions dominated the increases in poverty in Upper Egypt regions, resulting in a decline in overall poverty during 1999/2000-1995/96 period.

ARAB REPUBLIC OF EGYPT

POVERTY REDUCTION

DIAGNOSIS AND STRATEGY



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JUNE 2002