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EVALUATING THE PROCESS OF DEVELOPMENT IN EGYPT, 1980–97

In the broadest sense, the process of development involves improving the quality of human life. Although most people support the idea of improving human lives, the concept of development is notoriously difficult to define. In the poorer countries of the world, development generally requires increasing incomes. But it also involves other things, such as raising standards of health and nutrition, improving access to education, reducing poverty, and increasing the equality of resources. How is it possible to incorporate these, and other notions, into a workable definition of development that can be used to evaluate the recent record of development in Egypt?

In the past decade one of the most commonly cited definitions of development is that contained in the Human Development Index (HDI). As originally set forth by the United Nations Development Program (UNDP), the HDI declares that:

> Human development is a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development, the three essential ones are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living.[1]

The HDI represents a useful definition of development, because it can be measured along three clearly defined dimensions: "leading a long and healthy life" (longevity), "acquiring knowledge" (educational achievement), and "access to resources" (income). Although each of these dimensions has its own type of limitations, the HDI in general provides a good yardstick for comparing the recent developmental record in a country such as Egypt with that of other developing countries. However, before pursuing such a comparison, it is necessary to consider how each of the three components of the HDI is defined.

To measure longevity, the HDI uses the variable of life expectancy at birth. Life expectancy at birth is a widely accepted way of measuring whether people can live "a long and healthy life." However, it is sometimes argued that life expectancy at birth is too gross a measure, because this variable is really an average of often widely dissimilar life expectancies for people from different regional (urban or rural), ethnic, or cultural groups. It has also been suggested that if the goal is to see how much public health is improving, then it would be better to use some measure

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of infant mortality, such as life expectancy at one year. However, many developing countries—particularly those in Africa—do not report infant-mortality data in this form. What may be the most serious criticism of the life-expectancy-at-birth variable is that this is an entirely quantitative measure that says nothing about the quality of life that is lived. Certainly, the quality of life is just as important as the number of years lived. However, no one to date has devised a satisfactory method for comparing the quality of life among countries.

To measure educational achievement, the HDI uses the adult-literacy rate. Although this measure is also widely accepted, it has at least three limitations. First, it has been argued that literacy is difficult to measure and that it takes widely different amounts of effort to achieve literacy in different languages. For example, in Egypt it takes a person longer to become literate in the written language (of modern standard Arabic) than a person who lives in a country where the spoken and written languages are the same. Second, in many developing countries functional literacy is much lower than recorded literacy, and it is often not clear which variable is actually being measured. Third, adult literacy is a stock variable that changes very slowly over time. For this reason, some critics have suggested that, to show the rate of educational advance in developing countries, it would be better to measure the mean years of schooling for those under age 25.[2] Unfortunately, many developing countries—especially those in Africa—do not report data in this manner.

To measure access to resources, the HDI uses income. This is clearly the most controversial variable. On a technical level, there are a host of measurement problems—for example, how to measure income between different-size households and how to account for price differences between urban and rural areas. Moreover, a single measure of income tells us nothing about how that income is distributed among people. Finally, a single income measure does not tell us much about what is happening to poverty within a country. In other words, if one of the goals of development is to reduce poverty, then the income variable needs to be coupled with some type of poverty measure.

In response to these criticisms, it has often been suggested that the income variable needs to be broadened. As noted, one common suggestion is to add a poverty measure. Another idea is to include some measure of the degree of inequality in "access to resources." Although data often are not available to compare income distributions between countries,[3] it is usually possible to compare changes in income distributions within countries (such as Egypt) over time. A final suggestion is to add some measure of the ability of people to increase their access to resources through changes in productivity. In many developing countries, qualitative changes in the basic economic units of production—labor and land—represent the best way to increase people's access to food and other resources.

Building on the preceding suggestions and ideas, it is possible to take the original three components of the Human Development Index and create a modified and expanded HDI. This expanded HDI can then be used to ask five questions about any country's recent record of development: (1) What has been happening to life expectancy at birth? (2) What has been happening to adult literacy? (3) What has been happening to income and poverty? (4) What has been happening to inequality? and (5) What has been happening to productivity (labor and land)?[4]

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If the country of our focus—in this case, Egypt—has been experiencing progress in all five of these areas, then we can certainly say that development has been taking place in that country. If two or three of these components have been growing worse over time, however, then it would be difficult to claim that development has been taking place.

It is, of course, possible to pose these five questions about Egypt's developmental record for any time period. However, because a number of earlier studies examined the process of development in Egypt during the 1960s and 1970s,[5] it seems useful to pose these questions for a more recent period of time—that is, 1980 to 1997. The year 1980 represents a good beginning time, because it roughly coincides with the start of President Husni Mubarak's presidency,[6] and 1997 represents a good ending point, because it is the last year for which data are available.

The balance of this paper proceeds as follows. Parts 1 and 2 compare Egypt's recent record with respect to life expectancy and adult literacy with the records of forty other developing countries. Parts 3 and 4 then use a series of Egyptian household-budget surveys to compare changes in income, poverty, and inequality in Egypt over time. Part 5 compares recent changes in Egypt's land and labor productivity with such changes in forty developing countries. The Conclusion evaluates the findings and discusses whether development has occurred in Egypt since 1980.

PART 1: LIFE EXPECTANCY

The first component of our modified HDI is life expectancy at birth. In the developing world as a whole, average life expectancy has risen by nearly a third since 1960, from 46 to 62 years.[7]

Because life expectancy has increased sharply throughout the developing world, it is important to compare Egypt's record on life expectancy with that of the rate of improvement in other developing countries. In other words, absolute improvements in life expectancy in Egypt over time are good, but they need to be compared with the rate of improvement in life expectancy in a broad selection of other developing countries.

Table 1 compares the rate of improvement in life expectancy at birth in Egypt with that of the average of forty other developing countries. These forty comparison countries have been selected using a two-stage process: first, all developing countries were divided into two groups on the basis of whether they ranked above Egypt in the 1998 HDI;[8] second, twenty developing countries were randomly selected from the countries that ranked above Egypt in the 1998 HDI index, and 20 developing countries were randomly selected from those ranked below Egypt.[9]

Table 1 shows that over the period 1981 to 1995, Egypt's rate of improvement in life expectancy exceeded that of the average of forty other developing countries. During this period of time, life expectancy in Egypt improved at an annual rate of 0.92 percent per year, while the average of the forty countries rose by only 0.62 percent per year.

One of the main reasons for Egypt's high rate of improvement in life expectancy lies in the dramatic progress recorded in child survival. The mortality rate in Egypt for children younger than five years has fallen from 175 in 1980 to 66 in 1996. This represents a 5.91 annual percent decline in the infant-mortality rate. By contrast, during the same period, the mortality rate for children younger than five in the forty comparison developing countries declined only by an average 3.37 percent per year.

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TABLE 1 *Changes in life expectancy at birth, 1981–95: Egypt versus forty developing countries*

	Life Expectancy at Birth		% Average Annual Change,[a]
	1981	1995	1981–95
40 Developing countries[b]	59.3 years	64.6 years	+0.62
Egypt	57.0 years	64.8 years	+0.92

[a]Average annual rates of change are weighted by population.

[b]The forty developing countries are Algeria, Argentina, Bangladesh, Bolivia, Brazil, Chile, China, Colombia, Cote d'Ivoire, Democratic Republic of Congo, El Salvador, Ethiopia, Ghana, Guatemala, Guinea, Honduras, India, Indonesia, Kenya, Laos, Madagascar, Malaysia, Mexico, Morocco, Nepal, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Senegal, Sri Lanka, Syria, Thailand, Tunisia, Turkey, Venezuela, Yemen, and Zimbabwe.

Source: UNDP, *Human Development Report* (various years).

With far fewer infant deaths in Egypt per year, life expectancy in that country has grown faster than that in other developing countries.

Two factors seem to account for these impressive improvements in life expectancy and infant mortality in Egypt. First, the ever-increasing supply of doctors and public-health clinics in Egypt, especially in the countryside, has done much to improve the delivery of modern health and medical facilities to the poor. Of particular importance has been the ability of public and private health clinics to disseminate oral rehydration therapy (ORT) packets to Egyptian mothers. These ORT packets use a simple mixture of sugar, salt, and water to prevent young children from dying of dehydration during severe bouts of diarrhea. In 1980, dehydration from diarrhea killed more than 100,000 young Egyptian children a year; in 1995, fewer than half that number died from this illness.[10] Second, the Egyptian government has taken a number of steps to improve household access to safe water and sanitation facilities. According to the latest census, more than 92 percent of urban households and about 53 percent of rural households now have access to piped public water in their houses.[11] These developments have done much to reduce the incidence of water-borne diseases and parasites throughout the country. Although schistosomiasis (bilharzia), a debilitating disease that is transmitted by contact with polluted water, still remains endemic in rural Egypt, even this disease can be treated with a regularly applied regimen of praziquantel and other drugs.

PART 2: ADULT LITERACY

The second component of our modified HDI is the rate of adult literacy. In the developing world, rapid improvements in education have sharply increased the numbers of people who can read and write. For example, the literacy rate for men in the developing world as a whole rose from 48 percent in 1970 to 71 percent in 1995.[12]

Table 2 compares the rate of improvement in adult literacy in Egypt with that of the average of forty other developing countries. The results are disappointing. Between

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TABLE 2 *Changes in adult literacy, 1980–95: Egypt versus other developing countries*

	Literacy Rate		%Average Annual Change,[a] 1980–95
	1980	1995	
%Adults			
40 Developing countries[b]	55.8	69.0	+1.43
Egypt	44.0	51.4	+1.04
	1985	1995	
%Female			
36 Developing countries[c]	49.6	59.0	+1.74
Egypt	30.0	38.8	+2.60
%Male			
36 Developing countries[c]	70.6	76.8	+0.85
Egypt	59.0	63.6	+0.75

[a]Average annual rates of change are weighted by population.
[b]The forty developing countries are Algeria, Argentina, Bangladesh, Bolivia, Brazil, Chile, China, Colombia, Cote d'Ivoire, Democratic Republic of Congo, El Salvador, Ethiopia, Ghana, Guatemala, Guinea, Honduras, India, Indonesia, Kenya, Laos, Madagascar, Malaysia, Mexico, Morocco, Nepal, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Senegal, Sri Lanka, Syria, Thailand, Tunisia, Turkey, Venezuela, Yemen, and Zimbabwe.
[c]Lack of data forced the exclusion of the following countries from the list of forty developing countries: Ethiopia, Laos, Madagascar, and Yemen.
Source: UNDP, *Human Development Report* (various years).

1980 and 1995, the annual rate of improvement in adult literacy in Egypt (1.04%) was much lower than that of the average of the forty developing countries (1.43%).

Because Egypt (and other Middle Eastern countries) have traditionally had relatively low rates of female literacy,[13] it is tempting to suppose that these results are driven by low rates of improvement in female adult literacy. However, Table 2 shows that this is not the case. During the period 1985 to 1995, Egypt recorded much higher annual rates of increase in female adult literacy than that of the average of thirty-six developing countries. Although female literacy in Egypt started from a very low base (30% in 1980)—and from a statistical standpoint, it is easier to record high rates of improvement when beginning from a low base—Egypt's problems with adult literacy do not seem to have come from the female part of the equation.

Table 2 shows that the source of the problem comes from male literacy: between 1985 and 1995, the annual rate of improvement in male literacy in Egypt (0.75%) was lower than that of the average of the thirty-six developing countries (0.85%). What are the reasons for this? Why has the rate of male literacy grown so slowly in Egypt?

The answer to these questions lies in the character of the Egyptian educational system. Literacy rates remain low, and children remain out of school, because of a variety of urban and gender biases. Throughout Egypt, enrollment rates in rural areas

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are lower than those in urban areas, and dropout rates are higher. For example, in 1995, more than 92 percent of urban Egyptians age 6 to 10 were in school, whereas only 69 percent of rural Upper Egyptian children (and 54% of rural Upper Egyptian girls) in this age group were in school.[14] Many rural children, especially boys, leave school at various points during the year in order to work and end up either repeating grades or never learning basic reading and writing skills.

The reasons for all of this lie in both supply and demand. In rural areas, many children are far from any school. In rural (and urban) areas, if separate schools for boys and girls do not exist, more conservative parents tend to keep their young girls at home. At the same time, many families see no point in educating all of their children. It is common for families (especially in rural areas) to make sacrifices to educate at least one son in the hope that he will be able to obtain a secure government job.[15] Educating all of the boys, and especially all of the daughters, is simply too expensive and thus has low priority. Rural and urban children can and do contribute to family budgets by tending animals, harvesting crops, becoming apprentices, and working in shops.

However, it is not simply high costs, social attitudes, and household economics that have slowed the spread of adult literacy in Egypt. Government allocations to education in Egypt simply have not made the achievement of universal literacy much of a priority. A. Richards and J. Waterbury write:

> Egypt provides [a] striking case of class bias in education. Forty years after Nasser's revolution, less than half of adult Egyptians can read and write, while the country boasts 13 universities. Nearly 30 percent of educational spending goes to universities. Between 1952 and 1977 (primary school enrollment rose by 7 percent per annum, secondary enrollment by 14 percent, and university enrollment by 32 percent). . . . None of this makes educational or economic sense.[16]

In other words, until policymakers begin allocating less funds to university education and more to primary education, it is unlikely that Egypt will be able to improve much on its disappointing rate of growth in adult literacy. More public monies need to be allocated to primary education, where people learn to read and write.

PART 3: INCOME AND POVERTY

The third component of our modified HDI is income—that is, the amount of income "needed for a decent standard of living." Because a single measure of income does not tell us anything about what is happening to poverty within a country, the income variable needs to be supplemented with some type of poverty measure that shows us how many people are living in poverty.

In Egypt, no single source of data can be used to estimate changes in the number of poor people over time. The most reliable set of data comes from a series of household budget surveys done by the Egyptian government's Central Agency for Public Mobilization and Statistics (CAPMAS) in 1981–82, 1990–91, and 1995–96. Because they are large and nationally representative,[17] these three CAPMAS studies provide the basis for a broad overview of changes in poverty over time.

However, it should be noted that the three CAPMAS studies are based on expenditure rather than income data. This is a common approach in household budget surveys

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TABLE 3 *Incidence of poverty in urban and rural Egypt, 1981–82 to 1995–96*

	Urban			Rural		
	1981–82	1990–91	1995–96	1981–82	1990–91	1995–96
Food based poverty line[a] (per capita/year in Egyptian pounds)[b]	N.A.[c]	N.A.	702	N.A.	N.A.	512
Food and non-food poverty line[d] (per capita/year in Egyptian pounds)	139	556	968	110	423	696
Food and non-food poverty line in 1990–91 prices (per capita/year in Egyptian pounds)	555	556	549	422	423	431
Head-count index (% population below food and non-food poverty line)	18.2	20.3	22.5	16.1	28.6	23.3

[a]The food-based poverty line equals cost of diet per adult equivalent unit to yield energy intake of 2,200 calories per day.
[b]One Egyptian pound equals $0.29.
[c]N.A. = not available.
[d]To estimate the non-food poverty line, Engel curves were fitted by which the food share was regressed on the log of total per capita expenditure and household size.

Source: CAPMAS surveys as reported in Institute of National Planning (Egypt), *Egypt Human Development Report.* (Cairo: Nasr City, 1996), Tables 2.1, 2.7.

conducted in the developing world for at least three reasons. First, many researchers believe that people are more willing to report their patterns of expenditure than their sources of income. Second, because people use savings to smooth fluctuations in income, expenditures provide a more accurate measure of an individual's welfare over time. Third, in developing countries such as Egypt, expenditure is often easier to measure than income because of the difficulties of defining and measuring income for the self-employed in agriculture, who form a large proportion of the labor force.

One way to use the CAPMAS expenditure studies to measure changes in poverty over time is to establish a poverty line, defined as the break-even level of expenditures needed to meet minimum food and non-food requirements. Table 3 shows calculations done by the Egyptian Institute of National Planning for the amount of expenditure per capita needed to meet minimum food requirements in each of the three CAPMAS survey years.[18] To these minimum food costs, minimum non-food expenditures are added for each survey year.[19] The result is a poverty line (food and non-food)—defined in both current and real 1990–91 prices—for each CAPMAS survey year.

Before proceeding, it should be noted that the manner in which the Egyptian Institute of National Planning has defined the poverty line for each CAPMAS survey year

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is arbitrary and has at least three limitations. First, nutritional data on Egypt are relatively sparse. Because CAPMAS does not release the results of its surveys in individual-household form, it is unclear how the Institute of National Planning calculated nutritional requirements for individuals of different ages, sexes, and occupations within specific urban and rural households. Second, in most developing countries, food and non-food prices vary by region. For example, the cost of adequate housing in urban areas is often two to three times that of rural areas. Unfortunately, it is not clear how the Institute of National Planning took such regional price variation into account in calculating its food and non-food poverty lines. Third, for the reasons mentioned earlier, it should be emphasized that all of the poverty lines in Table 3 are based on consumer expenditure rather than income data. Thus, no account is taken of the saving or dis-saving behavior of the various income groups. This omission probably gives a slight downward bias to the poverty lines calculated by the Institute of National Planning, as the bulk of dis-saving activity typically occurs at the lower end of the income distribution.

Despite these limitations, the poverty-line estimates in Table 3 seem to provide a reasonably accurate approximation of reality in urban and rural Egypt. For instance, the estimate of the incidence of rural poverty in 1981–82 (16.1%) corresponds quite closely to my estimate for rural Egypt in 1982 (17.8%).[20]

Table 3 shows that the incidence of poverty in Egypt has increased slightly over time. Between 1981–82 and 1995–96, the share of the population living in poverty in urban Egypt increased from 18.2 to 22.5 percent, and the share of the population living in poverty in rural Egypt rose from 16.1 to 23.3 percent.

Before attempting to explain the reasons for this rise in poverty, it is useful to supplement the results of the three CAPMAS surveys in Table 3 with those of a new 1997 household budget survey conducted in Egypt by the International Food Policy Research Institute (IFPRI).[21] The 1997 IFPRI survey is useful because—unlike the various CAPMAS surveys—its results are available at the individual-household level.

The 1997 IFPRI survey was designed to be comparable to the various CAPMAS studies—for example, the IFPRI study used the same sampling frames and procedures as the 1995–96 CAPMAS survey. The IFPRI study was also large enough (2,500 households) and broad enough (conducted in twenty governorates) to be nationally representative of Egypt. However, average per capita expenditure in the 1997 IFPRI survey turned out to be 37 percent higher than that in the 1995–96 CAPMAS survey.[22] Unfortunately, the reasons for this large difference are not clear.[23]

Such a large difference in the estimated level of expenditures between the 1997 IFPRI and the 1995–96 CAPMAS surveys may seem to call into question any analysis of poverty based on one or the other survey. In fact, when adjustments are made for the very dissimilar levels of expenditure, there is considerable agreement in how the two surveys identify the poor.[24]

Like the various CAPMAS studies, the 1997 IFPRI study establishes a poverty line based on certain minimum food and non-food requirements.[25] Because the average level of expenditures in the IFPRI study is much higher than that of the 1995–96 CAPMAS study, the average poverty line (food and non-food) used by IFPRI is also higher: 1,232 Egyptian pounds ($357) per capita per year in urban areas, and 868 Egyptian pounds ($251) in rural areas.[26]

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TABLE 4 *Poverty indexes in urban and rural Egypt, 1981–82 to 1997*

	Urban				Rural			
	1981–82	1990–91	1995–96	1997	1981–82	1990–91	1995–96	1997
Poverty-gap index[a]	3.5	4.3	4.9	5.6	3.1	4.5	4.3	6.4
Squared poverty-gap index[b]	0.9	1.1	1.6	2.0	0.8	1.4	1.2	2.5

[a] The poverty-gap index is defined by the mean distance below the poverty line expressed as a proportion of that line, where the mean is formed over the entire population, counting the poor as having zero poverty gap. This index reflects the depth of poverty, as well as its incidence.
[b] The squared poverty-gap index is defined as the mean of the squared proportionate poverty gaps. This index reflects the severity of poverty and is sensitive to distribution among the poor.

Source: CAPMAS 1981–82 to 1995–96 figures from Institute of National Planning (Egypt), *Egypt Human Development Report*, table 2.7; 1997 figures calculated from 1997 IFPRI survey.

Using this poverty line, the 1997 IFPRI study estimates that 22.5 percent of the urban population and 24.3 percent of the rural population was poor in 1997. Because these figures are very similar to those produced by the 1995–96 CAPMAS study (Table 3), they corroborate the trends in urban and rural poverty noted earlier. In other words, if the 1997 IFPRI results are accepted, the share of the poor in the population of urban Egypt during the period under review increased from 18.2 percent to 22.5 percent, and in rural Egypt, the share rose from 16.1 percent to 24.3 percent.

Thus far, this analysis has focused on using the head-count index to measure the percent of the population living beneath the poverty line in different years. However, this approach ignores the amounts by which the expenditures of the poor fall short of the poverty line. It is therefore important to supplement the head-count index with more sophisticated poverty measures.

One such measure is the poverty-gap index. This index measures in percentage terms how far the average expenditures of the poor fall short of the poverty line. For instance, a poverty gap of 10 percent means that the average poor person's expenditures are 90 percent of the poverty line.

Although the poverty-gap index measures the depth of poverty, another measure—the squared poverty-gap index—indicates the severity of poverty. The squared poverty-gap index possesses useful analytical properties, because it is sensitive to changes in distribution among the poor. In other words, although a transfer of expenditures from a poor person to a poorer person will not change the head-count index or the poverty-gap index, it will decrease the squared poverty-gap index.

Table 4 presents the changes in the poverty-gap index and the squared poverty-gap index for the three CAPMAS survey years, as well as for the 1997 IFPRI survey. The results are similar to those presented earlier. According to both indexes, there was a slight increase in both the depth and severity of poverty during the period 1981–82 to 1995–96 (or 1997). For urban areas, the poverty-gap index rose from 3.5 to 4.9

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TABLE 5 *Average annual growth rates (%change) of real gross domestic product (GDP) in Egypt, 1980–96*[a]

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Real GDP growth	10.0	3.9	10.3	7.5	5.8	6.7	2.6	2.5	5.4	5.0	5.7	1.1	4.4	2.9	3.9	4.6	5.1
Real GDP growth/ capita	N.A.	−2.1	4.0	0.6	3.6	3.9	0.1	1.1	2.2	1.9	2.6	−1.4	2.6	0.6	1.7	2.3	2.8

[a]Fiscal year ends June 30.

Source: International Monetary Fund, *International Financial Statistics* [various years]. Washington, D.C.: IMF.

(5.6 in 1997) and the squared poverty-gap index increased from 0.9 to 1.6 (2.0 in 1997). Similar rates of increase in the depth and severity of poverty occurred in rural areas.

The key question now becomes: Why did poverty rise in urban and rural Egypt after 1982? The best answer to this question seems to lie in the faltering rate of economic growth in Egypt in recent years. During the oil-price revolution of the 1970s, the real gross domestic product (GDP) in Egypt grew at an impressive average rate of 7.4 percent per year. However, after the collapse of oil prices in the mid-1980s, and the concomitant slowdown in the migration of Egyptian workers abroad,[27] the rate of real GDP growth in Egypt fell. According to Table 5, real GDP growth declined from an average 7.4 percent per year in 1980–85 to 4.6 percent per year in 1985–90. Finally, the combined impact of the 1990 Persian Gulf War, the slow pace of privatization and structural reform in Egypt, and low rates of domestic savings all served to lower the average rate of real GDP growth even further: to a mere 3.8 percent per year in 1990–95.[28]

Commenting on the reasons for the recent slowdown in economic growth in Egypt, G. Amin writes:

> Between 1975 and 1985 the annual rate of growth of GDP in Egypt was 8.5 percent in real terms, a rate which was rarely experienced in Egypt's modern history. . . . [However,] the collapse of oil prices in 1986 revealed how fragile the economic structure [in Egypt has become. Development] since the mid-1970s has been merely the result of regularly injecting the economy with external sources of income or capital, whether in the form of foreign aid, labor remittances or higher oil prices, all of which have little relation with an increase in productive activity [in Egypt].[29]

As the rate of economic growth declined, so did the level of real wages in Egypt. Between 1980–81 and 1994–95, real wages fell across all sectors of the Egyptian economy (Table 6). For example, the real-wage index declined from 100 in 1985–86 to 68.6 for agriculture and 68.4 for industry in 1994–95. Both the size and extent of these real-wage declines are surprising, because they seem to have affected both the "free-market" and "public" sectors of the economy with equal severity. For instance, agriculture has always had a virtually free-market wage system, with the laws of supply and demand setting daily wage levels. By contrast, the government has had a very rigid

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TABLE 6 *Index of real wages[a] in Egypt, 1980–81 to 1994–95 (1985 = 100)*

Sector	1980–81	1981–82	1982–83	1983–84	1984–85	1985–86	1986–87	1987–88	1988–89	1989–90	1990–91	1991–92	1992–93	1993–94	1994–95
Agriculture	60.2	57.7	130.8	119.3	107.0	100.0	88.2	85.5	81.6	75.0	72.0	66.3	65.8	67.0	68.6
Industry	99.8	113.5	131.4	118.9	107.0	100.0	85.0	80.5	76.1	57.6	52.2	69.8	65.0	65.0	68.4
Petroleum	78.8	80.5	114.8	110.5	104.8	100.0	87.0	82.7	77.8	70.7	69.1	63.5	55.7	79.2	57.8
Electricity and gas	69.2	69.3	97.6	98.9	100.1	100.0	84.2	79.4	75.9	69.8	68.8	67.9	66.0	66.2	67.6
Housing and construction	64.4	62.1	135.3	121.4	107.9	100.0	85.0	80.1	75.4	82.1	77.1	70.2	65.8	63.2	63.3
Transportation and communications	60.2	84.4	122.7	113.9	104.5	100.0	86.5	81.5	77.8	89.2	85.8	77.7	58.4	55.9	55.2
Finance and trade	98.7	96.7	124.8	114.7	104.2	100.0	87.0	89.6	84.2	81.3	79.4	73.6	68.9	69.2	70.9
Other services	82.3	130.7	110.8	108.8	104.8	100.0	85.0	82.4	76.6	68.6	66.3	55.8	57.3	58.2	62.0
Total	80.4	87.4	120.0	113.0	104.9	100.0	86.4	84.3	79.7	73.6	70.9	66.4	64.4	65.3	67.8

[a]The real wage index equals the average annual wage per employee divided by the consumer price index.

Source: CAPMAS data, as reported in International Labour Office, *Job Creation and Poverty Alleviation in Egypt: Strategy and Programmes*, draft (August) (Geneva: ILO, 1997), Table 2.4.

wage system, with annual wage increases pegged closely to increases in seniority. Yet the recent fall in wages in Egypt seems to have affected both sectors of the economy—agriculture and government (in Table 6, "other services")—with equal vengeance.

The decline in real wages has probably been a major factor leading to the recent rise in urban and rural poverty in Egypt. According to the 1997 IFPRI survey, the poor in Egypt are most likely to be employed in casual jobs in construction and agriculture.[30] In the late 1970s and early 1980s, as remittance monies flowed back into Egypt, the construction industry boomed, so the poor were literally able to work their way out of poverty by helping to build new apartments and office buildings.[31] However, as the pace of economic growth slowed and the number of construction jobs declined, so did the level of real wages paid in this sector. Similarly, in the rural areas, the large-scale migration of unskilled workers abroad in the late 1970s and early 1980s caused the real wages paid to casual agricultural workers to rise.[32] When international migration opportunities for poor, unskilled workers narrowed after 1985, however, real wages paid to agricultural workers also fell by more than 40 percent (1985 to 1990).[33] Such a dramatic decline in real agricultural wages must have had a very negative impact on the rural poor.

PART 4: INEQUALITY

The fourth component of our modified HDI is inequality. This component measures equality in "access to resources" needed to attain a decent standard of living.

One familiar way to measure the degree of inequality in access to resources—in this case, income or expenditures—is the Gini coefficient. The Gini coefficient, which is scaled from 0 (perfect equality) to 1 (perfect inequality), shows cumulative proportions of income or expenditures received by cumulative proportions of recipients.

As calculated from the data in the three CAPMAS surveys, Table 7 shows that the Gini coefficient of expenditure for urban areas increased from 0.322 in 1981–82 to 0.331 in 1995–96; if the 1997 IFPRI survey is included, the Gini coefficient rose even further, to 0.385. For rural areas, the results are more contradictory. Data from the three CAPMAS surveys indicate that the Gini coefficient fell from 0.275 to 0.235; however, if the IFPRI survey is included, the Gini rose to 0.321 in 1997.

On the one hand, these figures suggest an expenditure distribution that is generally egalitarian by developing-country standards. For example, Gini coefficients of expenditure for urban and rural areas in Algeria, Jordan, and Tunisia range between 0.39 and 0.43. On the other hand, the figures in Table 7 suggest that the distribution of expenditures in Egypt does not show any significant improvement over time. More will be said about this later.

Another way to measure changes in expenditure distribution is by quintile groups. Table 7 also presents data on the loss or gain in expenditure for the top and bottom income quintile groups for the various surveys. Using the data from the three CAPMAS surveys, there was absolutely no change in urban areas in the percentage of total expenditures going to the lowest quintile group. However, using the IFPRI survey there was a large decrease in the percentage of total expenditures in urban areas going to the bottom quintile group in 1997. In rural areas, data from the three CAPMAS

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TABLE 7 *Distribution of expenditure by expenditure group in urban and rural Egypt, 1981–82 to 1997*

Total/Capita Expenditure	Urban				Rural			
Accruing to	1981–82	1990–91	1995–96	1997	1981–82	1990–91	1995–96	1997
Lowest 20%	8.4	8.2	8.4	5.4	10.2	7.0	11.3	6.6
Bottom 40%	21.0	20.3	20.4	14.8	24.6	19.7	25.7	17.7
Middle 40%	38.0	36.7	37.4	36.5	40.0	37.2	39.5	36.3
Top 20%	41.0	43.0	42.2	48.7	35.4	43.1	34.8	46.0
Top 10%	26.1	28.1	27.7	32.7	21.5	28.2	21.1	30.4
Gini coefficient[a]	0.322	0.340	0.331	0.385	0.275	0.360	0.235	0.321

[a]The Gini coefficient is an index commonly used to measure the inequality of a distribution of expenditure. It can be represented as: $G = (2/n\mu)\mathrm{cov}(y,r)$, where n is the number of observations, μ is mean expenditure, y is the series of total expenditures, and r is the series of corresponding ranks of expenditure.

Source: CAPMAS 1981–82 to 1995–96 figures from Institute of National Planning (Egypt), *Egypt Human Development Report*, Table 4.5; the 1997 figures are calculated from the 1997 IFPRI survey.

surveys suggest that the percentage of expenditures going to the lowest quintile group increased slightly, from 10.2 to 11.3 percent. However, the IFPRI survey suggests that the percentage of total expenditures in rural areas going to the bottom quintile group fell to 6.6 percent in 1997.

In summary, the data in Table 7 suggest quite different conclusions regarding trends in inequality in Egypt. In urban areas, the data suggest, the distribution of income worsened during the period under review. Between 1981–82 and 1995–96 the Gini coefficient of expenditures in urban Egypt increased by 2.8 percent; if 1997 is added as an end point, then the Gini coefficient increased by a full 19.8 percent.

The data for rural Egypt, however, suggest no clear findings. Of particular concern in rural Egypt are the remarkable fluctuations in the Gini coefficient of inequality, from 0.275 to 0.360 between 1981–82 and 1990–91, and from 0.235 to 0.321 between 1995–96 and 1997. Under normal circumstances, Gini coefficients simply do not show such large changes over such short periods of time. In theory, the expenditures of households should be relatively stable over time—that is, they should not "bounce around" from year to year in the manner indicated by the figures for rural Egypt in Table 7. In all likelihood, the large and unusual changes in these Gini coefficients are caused by measurement error. In other words, because many transactions in rural Egypt are non-monetized, measuring the expenditures of households in rural areas is more difficult than measuring such expenditures in urban Egypt. For example, problems such as measuring the value of home-produced food items and measuring the value of goods received as payment in kind render it more difficult to measure accurately household expenditures in rural Egypt.

In any event, it is important to place these findings regarding changes in inequality in urban and rural Egypt within the context of the pattern observed in other developing countries. S. Kuznets's hypothesis, in fact, suggests that inequality actually increases during the early stages of economic development, and only begins to decline in the

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TABLE 8 *Average annual growth rates[a] of labor productivity in industry, 1980–84 to 1992–96: Egypt versus twenty-two developing countries*

	Industry, Value Added[b]	Paid Non-Agricultural Employment	Labor Productivity in Industry
22 Developing countries[c]	+7.39%	+1.46%	+5.93%
Egypt	+4.72%	+3.79%	+0.93%

[a]Average annual growth rates are weighted by population.
[b]Average annual growth in industry, value added, is measured in constant local-currency units.
[c]Lack of data forced the exclusion of eighteen of the forty comparison countries. The twenty-two developing countries are Brazil, Chile, China, Colombia, El Salvador, Guatemala, Honduras, India, Indonesia, Kenya, Malaysia, Mexico, Pakistan, Panama, Paraguay, Peru, Philippines, Sri Lanka, Thailand, Turkey, Venezuela, and Zimbabwe.

Source: The industrial GDP growth rates are from World Bank, *World Tables* (Washington, D.C.: World Bank, various years); the data for growth in paid non-agricultural employment are from International Labour Office, *Yearbook of Labour Statistics* (Geneva: ILO, various years).

later stages.[34] M. S. Ahluwalia's econometric results also support the position that inequality and development are related in an inverted U-shaped manner.[35] Although more recent studies, such as those by K. Deininger and L. Squire and S. Anand and S. Kanbur, have questioned the validity of this inverted U-shaped relationship between inequality and development,[36] it seems important that in Egypt only urban income inequality—and not rural income inequality—rose during the period under analysis.

PART 5: PRODUCTIVITY

The fifth, and final, component of our modified HDI is productivity. In many developing countries, qualitative changes in the basic economic units of production—labor and land—represent the best way to increase people's access to food and other resources.

In urban Egypt, qualitative increases in labor productivity seem vital for spurring growth and reducing poverty. However, because rural Egypt is land-scarce but labor rich, the real need in rural Egypt is for qualitative increases in land productivity. In a country such as Egypt, which has about 0.05 hectares of cultivable land per person, coaxing higher yields out of a limited land base represents the basic conundrum facing national policymakers.

Turning first to the question of labor productivity, Table 8 compares the growth of labor productivity in industry in Egypt with that of the average of twenty-two other developing countries. Although certain deficiencies in the data make it difficult to compare growth in labor productivity between countries accurately[37] the figures in Table 8 are suggestive. Between 1980–84 and 1992–96, the average annual rate of growth of labor productivity in industry for the twenty-two developing countries was much higher than that for Egypt—5.93 versus 0.93 percent.

Two reasons can be cited for Egypt's low rate of growth in labor productivity. First, since 1991, the Egyptian government has pursued an ambitious structural-adjustment

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TABLE 9 *Distribution of working Egyptians by economic sector, 1986–95*

Sector	Number of Persons ('000)[a]		%Average Annual Growth Rate
	1986	1995	
Government[b]	2,545	3,955	5.02
Public sector[c]	1,287	1,358	0.60
Private sector[d]	8,062	9,565	1.92
Joint venture	—	106	—
Cooperative	—	74[e]	—
Foreign	11	—	—
Not described	14	—	—
Total	11,919	15,058	2.63

[a] For 1986, working Egyptians include persons age six and older. For 1995, working Egyptians include persons age fifteen and older.

[b] Government includes the central government, which is organized into different ministries, and local government, which is organized on a regional basis into twenty-six governorates.

[c] The public sector includes state-owned companies and enterprises, about half of which are engaged in manufacturing.

[d] The private sector includes those working in agriculture; in 1995, about half of those in the private sector were working in agriculture.

[e] In 1995, the cooperative and foreign sectors are combined.

Sources: The 1986 figures are from CAPMAS, *Population Census* (Cairo, various years). The 1995 figures are from CAPMAS, *Labor Force Survey* (Arabic) (Cairo, 1996).

program, which emphasizes government fiscal retrenchment, including efforts to reduce both the size and the role of the government and public-sector work force. The goal is to stimulate economic growth by making the private sector become the engine of employment and economic growth. For this reason, the figures in Table 9 are surprising. They suggest that in terms of annual growth rates of employment, the government is still the leading sector. For example, between 1986 and 1995 (the last year for which data are available), the rate of employment growth in government was 5.02 percent per year, about two-and-one-half times the growth rate of the private sector (1.92%). In other words, during the period under review, the government has remained the leading source of employment growth in Egypt, and this in all likelihood has had a negative impact on efforts to raise labor productivity in Egypt.

The second reason is closely allied with the first. As efforts to dislodge the government as the leading sector of the economy faltered, so did efforts to privatize the economy. Law 203 of 1991 established the legal basis for privatization in Egypt by removing 314 public-sector enterprises from the control of government ministries. However, subsequent efforts to privatize these 314 public-sector enterprises proceeded slowly and in piecemeal fashion. By 1998, seven years after the passage of the initial law, only about one-third of the public-sector firms (113 of 314 enterprises) had been even partially privatized. The factors explaining this slow progress are many and varied, including the obstructive attitude of public officials and problems over how to value unprofitable and overstaffed public-sector firms. In any event, although the government may have slowed the rate of employment growth in the public sector,[38]

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TABLE 10 *%Average annual growth rates[a] of production, area harvested, and output per hectare for cereals,[b] 1980–84 to 1992–96: Egypt versus forty developing countries*

	Total Cereal Production	Area Harvested	Output per Hectare
40 Developing countries[c]	+2.02	−0.48	+2.25
Egypt	+5.26	+2.29	+2.90

[a]Average annual growth rates are weighted by population.
[b]Cereals include wheat, rice (paddy), coarse grains, barley, maize, rye, oats, millet, and sorghum.
[c]The forty developing countries are Algeria, Argentina, Bangladesh, Bolivia, Brazil, Chile, China, Colombia, Cote d'Ivoire, Democratic Republic of Congo, El Salvador, Ethiopia, Ghana, Guatemala, Guinea, Honduras, India, Indonesia, Kenya, Laos, Madagascar, Malaysia, Mexico, Morocco, Nepal, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Senegal, Sri Lanka, Syria, Thailand, Tunisia, Turkey, Venezuela, Yemen, and Zimbabwe.

Source: United Nations Food and Agriculture Organization, *Production Yearbook* (various years).

efforts to privatize state-owned enterprises and convert them into an engine of economic growth have not yet materialized. This, in turn, has hampered efforts to stimulate the growth of labor productivity in Egypt.

With respect to the issue of land productivity, the results are more encouraging. On the one hand, it is important to recognize that Egyptian crop yields are already very high by world standards. For example, in recent years, no developing country has posted higher wheat or rice yields than Egypt.[39] However, it must be remembered that Egyptian crops—unlike those in most other countries—are almost 100 percent under irrigation. If only irrigated yields were compared among countries, Egyptian yields would still show room for improvement, considering the excellent soil, sunshine, and water inputs existing in rural Egypt.

Table 10 compares the growth in Egyptian yields of cereals with those of the average of forty other developing countries. The data show that between 1980–84 and 1992–96, the Egyptian rate of growth in output per hectare far exceeded that of the average of thirty-six other developing countries: 2.90 versus 2.25 percent. The reason for this is simple. After 1990, the Egyptian government removed many production and marketing controls on the most important cereal crop in Egypt: wheat. As the profitability of wheat increased, Egyptian farmers responded with ever-increasing wheat yields. Between 1980–84 and 1992–96, wheat yields per hectare in Egypt increased at an impressive average rate of 3.7 percent per year.[40]

The pattern of productivity growth in urban and rural Egypt therefore seems to be quite different, and the reasons for this difference are illuminating. In urban Egypt labor productivity has grown at a disappointing rate because of the slow progress of privatization and the continued dominance of the government sector. Since the government has been slow to sell off public firms to the private sector, efforts to raise worker productivity in many overstaffed and technologically inefficient public sector enterprises have not met with much success. By contrast, in rural Egypt the main unit of production—land—has always been in private hands. Thus, when the govern-

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TABLE 11 *A summary of Egypt's developmental record, 1980–97*

Variable/Component	Egypt's Developmental Record, 1980–97	Basis of Evaluation
1. Life expectancy at birth	Improving faster than average of 40 developing countries	40 developing countries[a]
2. Adult literacy	Not improving as fast as average of 40 developing countries	40 developing countries[a]
3. Income and poverty		
Urban	Poverty increasing[b]	Egypt household budget surveys[c]
Rural	Poverty increasing[b]	Egypt household budget surveys[c]
4. Inequality		
Urban	Inequality increasing[d]	Egypt household budget surveys[c]
Rural	Unclear[e]	Egypt household budget surveys[c]
5. Productivity		
Labor	Not improving as fast as average of 22 developing countries	22 developing countries[f]
Land	Improving faster than average of 40 developing countries	40 developing countries[a]

[a]The forty developing countries are Algeria, Argentina, Bangladesh, Bolivia, Brazil, Chile, China, Colombia, Cote d'Ivoire, Democratic Republic of Congo, El Salvador, Ethiopia, Ghana, Guatemala, Guinea, Honduras, India, Indonesia, Kenya, Laos, Madagascar, Malaysia, Mexico, Morocco, Nepal, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Senegal, Sri Lanka, Syria, Thailand, Tunisia, Turkey, Venezuela, Yemen, and Zimbabwe.
[b]Poverty is measured by the head-count, poverty-gap, and squared poverty-gap indexes.
[c]Egypt household budget surveys include 1981–82, 1990–91, 1995–96 CAPMAS Household Budget Surveys and 1997 IFPRI Household Budget Survey. All of these surveys are nationally representative.
[d]Inequality is measured by the Gini coefficient of expenditures.
[e]Trends in inequality in rural Egypt are unclear because of problems with the data. See the text.
[f]The twenty-two developing countries are Brazil, Chile, China, Colombia, El Salvador, Guatemala, Honduras, India, Indonesia, Kenya, Malaysia, Mexico, Pakistan, Panama, Paraguay, Peru, Philippines, Sri Lanka, Thailand, Turkey, Venezuela, and Zimbabwe. Lack of data prevented inclusion of all forty comparison countries.

ment loosened its control over the production and marketing of wheat and other crops, the Egyptian farmer was able to respond quickly and efficiently to new market signals.

CONCLUSION

This paper has used a modified HDI to evaluate the recent process of development in Egypt. According to this modified HDI, development requires changes in five key components: (1) life expectancy at birth; (2) adult literacy; (3) income and poverty;

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(4) inequality; and (5) productivity (labor and land). Table 11 summarizes the findings when this HDI is applied to Egypt.

In Table 11, when separate variables are included for urban and rural Egypt for several of the components, only two of the eight measured variables—life expectancy at birth and productivity (land)—show rates of improvement that exceed those of their relevant benchmarks. Life expectancy at birth in Egypt has improved at a rate faster than that of other developing countries because of dramatic progress in child-survival rates. Land productivity in Egypt has also improved at a rate faster than that of other developing countries because of substantial progress in increasing cereal (especially wheat) crop yields.

However, five of the measured variables in Table 11—adult literacy, income and poverty (urban and rural), inequality (urban), and productivity (labor)—show rates of improvement that are below their relevant benchmarks.[41] This is disturbing—especially in the case of the rates of change relating to poverty and inequality. With respect to poverty, all of the poverty measures used in this study—the head-count index, poverty-gap index, and squared poverty-gap index—suggest that the incidence, depth, and severity of poverty increased in both urban and rural Egypt between 1981–82 and 1997. With respect to inequality in urban Egypt, income inequality as measured by the Gini coefficient of expenditures increased by about 3 percent between 1981–82 and 1995–96.[42]

In summary, it seems reasonable to conclude on the basis of the evidence presented that development—as measured by the components of our modified HDI—did not take place in Egypt during the years 1980 to 1997. What are the reasons for this unfortunate situation?

The best explanation lies in the recent low rate of economic growth in Egypt. In Egypt, the GDP needs to grow by an average 7 percent per year to create the type of labor-intensive economic growth that can raise incomes and reduce poverty.[43] To be sure, faster economic growth is not the only condition required for development in Egypt. However, economic growth that provides more employment for people can—and typically does—spur growth in other areas, such as poverty reduction (by enabling poor people to work their way out of poverty) and educational achievement (by providing parents with the economic means to keep their children in school). Yet the stark fact of the matter is that between 1990 and 1996, real GDP growth in Egypt averaged only 3.95 percent per annum. With a population expanding at an average rate of 2.2 percent per year, the GDP has to grow much faster than this to provide jobs and prosperity for Egypt's citizens.

To boost economic growth, the Egyptian government needs to focus on productivity, especially total-factor productivity. Total-factor productivity includes all methods used to produce goods and services with factors of production (such as labor and land). Although total-factor–productivity growth in Egypt averaged 5 percent a year between 1970 and 1985, it subsequently fell to 1.8 percent a year between 1981 and 1996.[44] Increasing total-factor productivity will require higher levels of investment in human capital, particularly in the areas of primary and secondary education. Investment in human capital, in the sense of raising the literacy and technological skills of Egyptians, is needed to prepare Egyptian society to meet the development challenges of the 21st century.

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NOTES

Author's note: The findings, interpretations, and conclusions of this paper are entirely those of the author. They do not necessarily represent the view of the World Bank, its executive directors, or any other international institution.

[1]United Nations Development Program (UNDP), *Human Development Report* (New York: Oxford University Press, 1990), 10.

[2]P. Smith, "Measuring Human Development" (mimeograph, University of Southampton, Southampton, U.K., 1992).

[3]Even the Gini coefficient, probably the most widely used measure of income inequality, is currently available for only 41 of 112 developing countries listed in the 1998–99 *World Development Report* (Washington, D.C.: World Bank, 1998–99).

[4]These five questions represent a modified and expanded version of the original 1990 Human Development Index (see UNDP, *Human Development Report*), which focused on just three variables: life expectancy, adult literacy, and income. However, subsequent revisions to the 1990 HDI added variables relating to poverty and inequality (see UNDP, *Human Development Report* [New York: Oxford University Press, 1998], 15). Yet none of these revisions to the HDI has added the variable of productivity.

[5]See, for example, B. Hansen, *The Political Economy of Poverty, Equity and Growth: Egypt and Turkey* (New York: Oxford University Press, 1992); R. Adams, Jr., "Development and Structural Change in Rural Egypt, 1952 to 1982," *World Development* 13, 6 (1985): 705–19; and M. Abdel-Fadil, *The Political Economy of Nasserism* (Cambridge: Cambridge University Press, 1980).

[6]Mubarak assumed the presidency of Egypt in October 1981, after the assassination of President Anwar Sadat.

[7]UNDP, *Human Development Report* (1990), 19.

[8]Ibid. (1998).

[9]In the 1998 HDI, Egypt was ranked 112. Among the forty developing countries selected as comparison countries, Chile was ranked the highest (31) and Ethiopia the lowest (169) (ibid., Table 1). For a full list of the forty developing countries, see Table 1 in this article.

[10]A. Richards and J. Waterbury, *Political Economy of the Middle East* (Boulder, Colo.: Westview Press, 1996).

[11]F. El-Zanaty, E. Hussein, G. Shawky, A. Way, and S. Kishor, *Egypt Demographic and Health Survey, 1995* (Cairo: National Population Council, 1996), Table 2.6.

[12]UNDP, *Human Development Report* (1998), 151.

[13]For example, in 1995, the female literacy rate was 38.8 percent in Egypt and 55.8 percent in Syria; in the same year, female literacy stood at 76 percent in Bolivia and 96.2 percent in Argentina.

[14]El-Zanaty et al., *Egypt Demographic and Health Survey*, Table 2.5.

[15]R. Adams, Jr., *Development and Social Change in Rural Egypt* (Syracuse, N.Y.: Syracuse University Press, 1986).

[16]Richards and Waterbury, *Political Economy*, 119.

[17]For example, the 1995–96 CAPMAS survey included 14,805 households, 6,622 of them urban and 8,183 of them rural.

[18]Minimum food requirements for the 1981–82 to 1995–96 CAPMAS studies equal the cost of diet per adult equivalent unit to yield energy intake of 2,200 calories per day (see Institute of National Planning (Egypt), *Egypt Human Development Report* (Cairo: Nasr City, 1996), 117.

[19]To estimate minimum non-food expenditures for the 1981–82 to 1995–96 CAPMAS studies, Engel curves were fitted by which the food share was regressed on the log of total per capita expenditure and household size. For more detail, see ibid., 118.

[20]See Adams, "Development and Structural Change," Table 1.

[21]The IFPRI study was done in collaboration with the Egyptian Ministry of Agriculture and Land Reclamation, the Egyptian Ministry of Trade and Supply, and the U.S. Agency for International Development.

[22]Average annual per capita expenditures (in 1997 terms) in the 1997 IFPRI study are 1,944 Egyptian pounds ($365) versus 1,417 Egyptian pounds ($411) for the 1995–96 CAPMAS survey. In both studies, expenditures are measured as the sum of total food expenses, total non-food expenses, and an estimated use or actual purchase value of durable goods. Expenditures do not include the actual or imputed rental value

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of housing, because the 1997 IFPRI study found that 90 percent of rural households and 52 percent of urban households own their own houses.

[23]A thorough examination of the reasons for the large difference between the two surveys would require access to the individual-household–level data of the 1995–96 CAPMAS study. However, although both the 1997 IFPRI and the 1995–96 CAPMAS surveys include data on the value of durable goods, such goods account in the IFPRI survey for 16 percent of total per capita expenditures, whereas in the CAPMAS survey, they account for only 3 percent of such expenditures.

[24]Both the 1997 IFPRI and the 1995–96 CAPMAS survey find that the poor are more likely to have low levels of education and to be unemployed or work in casual jobs in agriculture or construction.

[25]In the 1997 IFPRI survey, minimum food requirements equal the cost of diet per individual to meet minimum caloric requirements (as set by the World Health Organization) for men and women in thirteen different age categories (see G. Datt, D. Joliffe, and M. Sharma, "A Profile of Poverty in Egypt: 1997," final draft report [31 March 1998], International Food Policy Research Institute, Washington, D.C., Table 1). In the IFPRI survey, minimum non-food requirements are established by reference to the expenditure patterns of those households whose food expenditures are close to the food poverty line.

[26]By comparison, adjusting the average poverty lines from the 1995–96 CAPMAS survey (in Table 3) into 1997 terms yields an urban poverty line of 1,021 Egyptian pounds ($296) per capita per year and a rural poverty line of 734 Egyptian pounds ($213). In other words, the urban and rural poverty lines used in the IFPRI survey are about 21 percent and 18 percent higher, respectively, than those used in the 1995–96 CAPMAS survey.

[27]In the absence of reliable records, there has always been much uncertainty about the actual number of Egyptians working abroad. However, over the years, the remittances sent back to Egypt by workers living abroad have shown a generally upward trend. For example, net annual workers' remittances averaged $2,516 million a year in 1981–83; $3,495 million in 1987–89; and $4,484 million in 1993–95. Yet because these figures include only remittances that enter Egypt through official channels, they tend to underestimate the large proportion of remittances (perhaps $1,500 million a year) that enter the country by unofficial means.

[28]For more on the slow pace of structural reform in Egypt, see I. Harik, *Economic Policy Reform in Egypt* (Gainesville: University Press of Florida, 1997).

[29]G. Amin, *Egypt's Economic Predicament: A Study in the Interaction of External Pressure, Political Folly and Social Tension in Egypt, 1960–1990* (New York: E. J. Brill, 1995), 115–16.

[30]Datt et al., "Profile of Poverty."

[31]Adams, *Development and Social Change*.

[32]In a study of the determinants of international migration in three villages in rural Egypt, I found that landless agricultural workers had the highest propensity to work abroad (see R. Adams, Jr., "The Economic and Demographic Determinants of International Migration in Rural Egypt," *Journal of Development Studies* 30, 1 [1993]: 146–67). Most of these agricultural workers went to work in a neighboring Arab country, such as Iraq, Kuwait, or Saudi Arabia.

[33]A. Richards, "The Egyptian Farm Labor Market Revisited," *Journal of Development Economics* 43, 2 (1994): 243.

[34]S. Kuznets, "Quantitative Aspects of the Economic Growth of Nations: VIII, Distribution of Income by Size," pt. 2, *Economic Development and Cultural Change* 11, 2 (1963): 1–80; and idem, *Modern Economic Growth: Rate, Structure and Spread* (New Haven, Conn.: Yale University Press, 1966).

[35]M. S. Ahluwalia, "Income Inequality: Some Dimensions of the Problem," in *Redistribution with Growth*, ed. H. B. Chenery et al. (London: Oxford University Press, 1974); and idem, "Inequality, Poverty and Development," *Journal of Development Economics* 3, 4 (1976): 307–42.

[36]K. Deininger and L. Squire, "A New Data Set Measuring Income Inequality," *World Bank Economic Review* 10, 3 (1996): 565–91; S. Anand and S. Kanbur, "Inequality and Development: A Critique," *Journal of Development Economics* 41, 1 (1993): 19–43.

[37]In Table 8, it would have been preferable to compare growth in labor productivity across countries by using data on changes in paid employment in manufacturing (or industry). Unfortunately, however, reliable inter-country data for this variable are not available. Thus, Table 8 is based on the changes in paid non-agricultural employment across countries. Obviously, the category of "paid non-agricultural employment" is much larger than that for "paid employment in manufacturing (or industry)."

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[38]According to Table 9, the average annual rate of employment growth in the public sector was only 0.60 percent, which is much slower than that for the government sector at large (5.02%).

[39]In 1992–96, Egyptian wheat and rice yields averaged 5,323 and 7,977 kilograms per hectare, respectively.

[40]During the same period of time, 1980–84 and 1992–96, rice yields per hectare in Egypt also grew at an average rate of 2.9 percent per year.

[41]As noted in Table 11, it is unclear what is happening with respect to rural inequality.

[42]If the results from the 1997 IFPRI household survey are used as an end point, then income inequality in urban Egypt as measured by the Gini coefficient increased by about 20 percent.

[43]According to the Economist Intelligence Unit, "Both the [Egyptian] government and the IMF admit that GDP needs to grow by an average 7 percent annually to create prosperity, while the IMF calculates that a rate of at least 4 percent is necessary to keep the country's unemployment situation stable" (Economist Intelligence Unit, *Egypt Country Report* [first quarter 1995] [London: Economist Intelligence Unit, 1995], 9).

[44]H. Handy et al., "Egypt: Beyond Stabilization, Toward a Dynamic Market Economy," Occasional Paper 163 (Washington, D.C.: International Monetary Fund, 1998), 8.

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