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**Structural Adjustment, Demography, and the Egyptian Labor Market  
in the 1990s**

**by**

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## ***Introduction***

The Egyptian economy has undergone significant changes in the 1990s brought about in part by the implementation of an ambitious economic reform and structural adjustment program, initiated in 1991 as well as by long-term demographic and economic forces. Although much is known about the macroeconomic trajectory of the Egyptian economy over this period, much less is known about the microeconomic impact of the reforms, especially when it comes to their effects on labor markets and, through them, on households. The research reported on here attempts to fill this knowledge gap by drawing on two comparable, nationally-representative household surveys focusing on labor market conditions, carried out in 1988 and 1998.<sup>1</sup>

The paper argues that the dynamics of the Egyptian labor market in the 1990s were driven by powerful demographic forces on the supply side, and by a mixture of factors on the demand side that reflect both continuity and change. On the supply side, labor force growth in the 1990s was driven by the relatively large cohorts of new entrants brought about by the bulge in birth rates that followed the October 1973 Arab-Israeli war and by falling early childhood mortality rates in the 1970s and 1980s. Egypt is now at the stage its demographic transition where it is beginning to see a declining proportion of dependents, but where labor supply pressures are at their peak.<sup>2</sup>

On the demand side, the elements of continuity were the continued growth of the civil

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<sup>1</sup> The surveys are the special round of the Labor Force Sample Survey, carried in October 1988 (LFSS 1988) by the Central Agency for Public Mobilization and Statistics (CAPMAS), and the Egypt Labor Market Survey 1998 (ELMS 1998), carried by the Economic Research Forum for the Arab Countries, Iran and Turkey (ERF).

<sup>2</sup> See Williamson and Yousef (2000) and Tunali (1998) for further discussion of the economic and labor market implications of the "demographic window of opportunity" brought about by the declining fertility stage of the demographic transition.

service at close to twice the rate of overall employment growth and the sluggish growth of agriculture. The elements of change were the absolute decline in state-owned enterprise (SOE) employment and the fairly rapid growth of wage employment in the non-agricultural private sector. These overall trends in labor demand mask significant differences by gender and location, however. While the growth of civil service employment was strong for both males and females, employment creation in the private sector was essentially limited to male workers and to urban areas. Besides work in farming and animal husbandry on family farms, female employment growth in the private sector has not even made up for the loss of female employment in the state-owned sector. Similarly rural areas have fared considerably worse than urban areas, experiencing significantly higher unemployment rates due to more rapid labor force growth and slower growth in agricultural employment. In fact, much of the employment growth among rural males is made up of urban jobs, to which they commute on a daily basis.

### ***Demography and Labor Force Growth***

From 1988 to 1998, the Egyptian civilian labor force has grown at an average rate of 2.7 percent per year, the same rate of growth as that of the working age population (ages 15-64). Although the rate of growth of the working age population has slowed somewhat from the 2.8 percent per annum rate of the previous decade, the stability in overall participation rates continues a trend that extends at least to the mid 1970s (Assaad 1997a). The earlier onset of fertility decline in urban areas and the very low levels of rural to urban migration in Egypt over the past two decades resulted in a large differential in population growth, and hence labor force growth, between urban and rural areas, as shown in Table 1.<sup>3</sup>

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<sup>3</sup> The urban TFR declined from about 6.0 in 1960 to 4.6 in 1975 to 3.3 in 1988. The

Table 1: Population and Labor Force Growth Rates (%/year) (Ages 15-64)

	Male	Female	Total
Population:			
Urban	2.3	2.1	2.2
Rural	3.2	3.0	3.1
Total	2.8	2.6	2.7
Labor Force:			
Urban	1.8	3.6	2.4
Rural	2.5	3.5	2.9
Total	2.2	3.6	2.7

Source: LFSS 1988 and ELMS 1998.

The demographic forces underlying the growth of the labor force were accompanied by significant changes in participation behavior along gender lines, which are masked by the stability of overall participation rates. While male participation rates declined by about 4 percentage points from 1988 to 1998, female participation increased by almost the same percentage (Table 2).<sup>4</sup> Urban areas accounted for most of the increase in female participation, even though female participation rates in rural areas are higher according to the extended definition we are using. Hence, despite significant differences in the growth of the underlying female populations, the urban and rural female labor forces are increasing at about the same rate.

As shown in Figure 1,<sup>5</sup> the drop in male labor force participation is due to primarily to the earlier withdrawal from the labor force of older males and, to a lesser extent, to reduced participation among school-age males, as school secondary enrollment rates increase. Further

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rural TFR declined from about 7 in 1960 to 6.3 in 1975-76 to 5.7 in 1988. The proportion of population living in urban areas has actually declined from 1976 to 1996, from 43.8 percent to 42.2 percent.

<sup>4</sup> For the purposes of this analysis I use the extended definition of participation in economic activity, which includes participation in subsistence agriculture and animal husbandry. For comparison, participation rates using the market labor force definition are provided for 1998 in Table 2. Comparable measures cannot be obtained from the LFSS 1988.

<sup>5</sup> The black and white squares in the figures indicate mean participation rates by age in 1988 and 1998, respectively. The gray and black solid lines are a 5<sup>th</sup> order polynomial fit through these points.

investigation shows that the earlier withdrawal of older males is almost exclusively among lesser educated self-employed males.

Table 2-- Labor Force Participation Rate (%) by Sex, Market and Extended Labor Force Definitions, Ages 15-64

sex	Urban		Rural		Total	
	1988	1998	1988	1998	1988	1998
Males						
Market Labor Force	N.A.	70.8	N.A.	73.5	N.A.	72.3
Extended Labor Force	74.4	70.8	78.8	73.6	76.7	72.3
Females						
Market Labor Force	N.A.	25.5	N.A.	17.7	N.A.	21.2
Extended Labor Force	28.5	33.0	53.5	56.6	41.8	46.0
All						
Market Labor Force	N.A.	48.1	N.A.	45.7	N.A.	46.8
Extended Labor Force	51.2	51.9	66.0	65.1	59.1	59.2

Source: LFSS 1988 and ELMS 1998.

Note: N.A. = not available

The increase in female labor force participation is also due to the combination of an education-induced behavioral change among young females and delayed withdrawal from the labor force among older females. While participation among females under 18 is declining just as it is among their male counterparts due to higher secondary school enrollments, participation among older females is increasing significantly, especially in urban areas (Figure 2). Increased participation among women in their twenties and thirties is due primarily to increased female educational attainment. According to the two surveys, the proportion of illiterate females in the working age population has fallen sharply from 1988 to 1998, from 42 to 28 percent in urban areas and from 80 to 56 percent in rural areas. This decline is accompanied by increases in the proportion of females at every level of formal education, but the most notable increases are at the preparatory and secondary levels. It is by now well-established that female participation in Egypt increases sharply at the secondary level, the level at which government employment becomes a possibility (Assaad 1997b).

The delayed withdrawal of older females from the labor force, on the other hand, is a relatively novel phenomenon. In urban areas, female participation rates were nearly 10 percentage points higher in 1998 than in 1988, at every age from 30 to 60 (Figure 2). In 1988, the highest female participation rate in urban areas, nearly 46 percent, occurred at age 25. By 1998, the maximum of nearly 52 percent occurred close to age 40. Further investigation reveals that the delayed withdrawal is almost exclusively among female civil servants. As civil service jobs become scarcer, it appears that many married women, who in the past would have quit their jobs upon marriage, are now holding on to them.

The lower panels of Figures 1 and 2 show the distribution of the male and female populations by age group. Although the proportion (and the absolute numbers) of the population under 10 years of age is declining significantly, reflecting recent fertility declines, the proportion of those 10 to 19 is still increasing, especially in rural areas. By 1998, they constituted by far the largest age cohort in the population. At the moment, the pressure this cohort is exerting on labor supply is dampened by rising school enrollment rates, and therefore falling participation. However, once they complete their education, their participation rates will rise sharply, putting significant pressure on the labor market. The growing proportion of young new entrants means that demographically-induced labor supply pressures will continue for at least another decade.

### ***Structural Adjustment and the Structure of Labor Demand***

The starting point of the study period, 1988, is situated three years before the initiation of the Economic Reform Structural Adjustment Program and marks a period of severe balance of payments crisis in Egypt, brought about by the sharp decline in oil-related foreign exchange revenues. Although GDP growth had slowed significantly from 1985 to 1988, as shown in Table

3, it slowed even further upon adoption of the stabilization program in 1991. By 1995 growth had recovered and remained relatively steady until 1998. Despite this recovery, employment growth over the ten-year period fell short of the 2.7 percent per annum growth of the labor force (Table 2).

Table 3: Egypt: Macroeconomic Indicators

	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP Growth Rate (%)	6.6	2.6	2.5	5.3	5.0	5.7	1.1	4.4	2.9	3.9	4.7	5.0	5.5
Current Account Balance (as % of GDP)	-9.3	-9.4	-10.1	-8.0	-6.7	0.6	-9.4	5.4	3.3	0.4	2.1	2.1	3.8
Overall Budget Deficit (as % of GDP)	-10.4	-12.1	-5.1	-7.6	-5.4	-5.7	-1.0	-3.5	1.7	0.3	0.9	--	--

Source: World Bank, World Development Indicators, 1999.

The stabilization component of economic reform programs typically results in significant cuts in public expenditures, which would be expected to slow the growth of civil service employment. Through privatization and cuts in public investments in SOEs, the structural adjustment phase is expected to reduce employment in SOEs and increase it in the private sector. Private sector employment would be expected to grow in particular in sectors producing tradables, such as manufacturing and agriculture and, in sectors that experience significant liberalization, such as financial services and, again, agriculture.

The actual changes that occurred in the Egyptian labor market in the 1990s are at odds with these expectations in many respects and conform to them in other respects. As shown in Table 4, government (civil service) employment continued to grow much more rapidly than overall employment in the 1990s. This continues a long-term trend of an increasing share of civil service employment that began in the 1960s (Handoussa, 1992). Although, as expected, employment in SOEs contracted significantly in the 1990s, the public sector as a whole increased its share of total employment because to the continued rapid growth of the civil service.

Table 4: Employment Growth in the Egyptian Economy by Sex, 1988-98

	Male		Female		Total	
	Share of Growth	Av. Ann. Growth Rate	Share of Growth	Av. Ann. Growth Rate	Share of Growth	Av. Ann. Growth Rate
Public Sector:						
Government	55.6	4.5	28.1	5.4	41.8	4.8
SOEs	-11.2	-2.3	-2.9	-4.1	-7.0	-2.6
Subtotal Public Sector	44.4	2.6	25.2	4.3	34.7	3.0
Private Agriculture						
Wage Work	2.7	0.6	-3.5	-6.3	-0.4	-0.2
Non-Wage Work	-28.6	-3.1	82.4	4.4	27.4	1.9
Subtotal Priv. Agriculture	-25.9	-1.9	78.9	4.1	26.9	1.6
Private Non-Agriculture						
Wage Work	60.9	4.6	2.6	1.6	31.5	4.3
Non-Wage Work	20.5	2.6	-6.8	-2.7	6.7	1.3
Subtotal Priv. Non-Agric.	81.4	3.8	-4.2	-1.0	38.3	3.0
Total	100.0	1.9	100.0	3.4	100.0	2.5

Source: LFSS 1988 and ELMS 1998.

Despite significant price liberalization and the dramatic decline in real agricultural wages since 1985, employment growth in agriculture was fairly slow, continuing a long-term declining trend in the share of agriculture in total employment (Richards 1994). It is hard to make the case that price liberalization has had any significant effect on employment in commercial agriculture. Most of the employment growth in that sector was in non-wage work among females, which consists for the most part of production for own consumption.<sup>6</sup> Male agricultural employment declined by 1.9 percent per annum over the period, and agricultural wage employment among both males and females was virtually stagnant. There appears to be some substitution of female for male labor on family farms, but that finding still needs to be confirmed through more detailed analysis.

The failure of agricultural employment to grow would not be a problem if productivity

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<sup>6</sup> According to ELMS 1998, 93% of female non-wage workers in agriculture were



and income growth in agriculture resulted in multiplier effects that stimulated non-farm employment in rural areas (Mellor 1997). Available evidence indicates however that this was not the case. Non-agricultural employment among rural residents --which is mostly made up of males -- grew rapidly at about 4.6 percent per annum. Much of this growth, however, actually took place in urban areas. When asked about the location of their work in 1998, 27 percent of rural males engaged in non-agricultural employment said they worked in urban areas and an additional 21 percent said their work takes them to both urban and rural areas. Further evidence that rural labor markets were not as dynamic as their urban counterparts can be found in the relative trends in unemployment. While urban unemployment rates increased slightly from 9 to 9.7 percent from 1988 to 1998, rural unemployment rates more than doubled from 2.9 to 6.8 percent (Assaad 1999).<sup>7</sup> The increase in unemployment in rural areas is clearly the result of a combination factors, including rapid growth in the youth population and low-levels of outright migration to urban areas, but sluggish rural labor demand clearly had a role to play as well.

Private non-agricultural employment increased more rapidly than overall employment, with most of the increase occurring among wage workers (Table 4). Outside agriculture, the private sector was therefore fairly dynamic, growing at a 3 percent annual rate and contributing about 38 percent of employment growth from 1988 to 1998. The striking finding here is that the increase was virtually limited to male workers. Female private sector employment outside agriculture actually declined in absolute terms. Even female wage employment in that sector

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producing exclusively for household consumption.

<sup>7</sup> The unemployment rates reported here are lower than comparable rates typically reported for Egypt because I use the extended definition of the labor force, which tends to disproportionately increase the denominator of the unemployment rate compared to the market definition. According to the market definition of the labor force, the unemployment rate in 1998 was 11.0 percent in urban areas and 12.2 percent in rural areas, leading to an overall rate of

grew at less than half the rate of overall female employment and at about a third of the rate of male non-agricultural wage employment. Most of female employment growth was in fact accounted for either by civil service employment or by subsistence agriculture.

The distribution of employment creation by industry among wage workers in the private non-agricultural sector is also quite revealing (Table 5). By far the fastest growth occurred in Finance, Insurance and Real Estate, a sector that was opened up to private investment in the 1970s. This sector contributed 5.5 percent of non-agricultural wage employment growth. The second fastest growing part of the private sector is transport, storage and communications, which contributed about 12 percent of employment growth. This was closely followed by manufacturing, mining and utilities, which was the largest contributor to growth in the private non-agricultural sector, contributing 37 percent of private sector job creation outside agriculture.

Table 5: Growth in Private Sector Wage Employment by Industry and Sex, 1988-1998.

	Male		Female		Total	
	Share of Growth	Av. Ann. Growth Rate	Share of Growth	Av. Ann. Growth Rate	Share of Growth	Av. Ann. Growth Rate
Manufact., Mining & Utilities	35.3	4.9	67.2	4.7	36.9	4.9
Construction	19.2	3.7	11.8	7.3	18.8	3.7
Trade, Restaurants & Hotels	18.1	4.6	33.1	2.0	18.7	4.2
Transp., Stor. & Communic.	12.4	5.4	-6.2	-4.1	11.6	5.1
Fin., Insur. and Real Estate	4.5	9.0	27.2	9.7	5.5	9.13
Public and Personal Services	10.7	4.6	-13.9	-0.6	9.7	3.0
Undefined	-0.2		-19.2		-1.0	
Total	100.0	4.64	100.0	1.6	100.0	4.3

Source: LFSS 1988 and ELMS 1998

The distribution of private sector job creation by industry also differs significantly along gender lines. Job creation for females was concentrated in three sectors: manufacturing, which contributed two thirds of female employment growth, trade which contributed a third, and

11.7%.

finance, which contributed 27 percent. In contrast, male employment growth was much more evenly distributed across sectors. The contribution of finance to female employment growth, is particularly impressive given its meager 3 percent share in 1988 employment. Services was the only sector where females were highly represented in the first place and where they lost employment. Most of these women were probably working as domestic servants, an occupation that is increasingly frowned upon among Egyptians.

An examination of employment creation by firm size in the private non-agricultural sector reveals that although units with fewer than 5 workers still contribute the bulk of private non-agricultural employment, they were the slowest category to grow in the 1988-98 period (Table 6). The most rapidly growing size categories were the 5-9 worker units, which nearly doubled their share from 6.5 to 12.3 percent, and the smaller 30-49 worker category, whose share increased from 1.2 to 2.3 percent. The largest firms with 50 or more workers also experienced significant growth in employment and increased their share from 7 to 10 percent.<sup>8</sup> If the analysis is limited to wage workers only, the picture does not change much, except for the fact that the share of the smallest category of units declines significantly and rates of growth are somewhat higher.

The disaggregation of the data by gender shows that, relative to male workers, a larger proportion of female workers, including the self-employed, work in the smallest size category of economic units, but the size of this category is declining both relatively and absolutely. When

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<sup>8</sup> Because these data are collected by means of household surveys, where workers are asked about the size of the economic unit in which they work, there is a significant proportion of "don't know" and missing answers. Workers were asked to provide the figures in broad categories rather than as exact numbers, so that the "don't knows" are not necessarily among large firms only. To the extent that these cases are distributed evenly across size categories, the patterns of growth should remain the same. In any case, these figures should be interpreted with

only wage workers are considered, the share of female employment in the smallest size category is smaller than that of males, and is also declining. Thus very small firms appear to be less hospitable to female workers than to male workers and are getting more so over time. Although employment among both males and females is shifting toward somewhat larger economic units, it is doing so more rapidly for females.

Table 6: Distribution and Growth of Private Non-Agricultural Employment by Size of Economic Unit and Sex, 1988-98

	Males			Females			Total		
	Share in 88	Share in 98	Ann.Gr . Rate	Share in 88	Share in 98	Ann.Gr . Rate	Share in 88	Share in 98	Ann.Gr . Rate
All Workers									
1-4	64.6	63.6	3.7	79.5	73.2	-1.8	67.6	64.9	2.6
5-9	7.3	13.4	9.9	3.6	5.5	3.2	6.5	12.3	9.4
10-29	6.6	6.9	4.2	4.1	6.3	3.2	6.1	6.8	4.1
30-49	1.2	2.3	10.4	1.5	3.1	6.0	1.3	2.4	9.5
50+	7.2	10.1	7.2	5.8	9.8	4.3	6.9	10.0	6.8
D.K./missing	13.1	3.7		5.4	2.2		11.5	3.5	
Total	100.0	100.0	3.8	100.0	100.0	-0.9	100.0	100.0	3.0
No. of workers, '000s	3,753	5,508		941	857		4,694	6,364	
Wage Workers									
1-4	46.3	48.4	5.1	44.1	41.6	1.3	46.1	47.7	4.7
5-9	8.6	17.3	11.6	7.0	11.4	6.7	8.4	16.7	11.2
10-29	9.4	9.7	4.9	11.5	13.4	3.4	9.6	10.0	4.7
30-49	1.8	3.5	11.4	4.5	6.9	6.0	2.1	3.8	10.2
50+	12.0	15.5	7.2	17.0	21.8	4.3	12.6	16.1	6.7
D.K./miss	21.9	5.7		15.9	4.9		21.1	5.6	
Total	100.0	100.0	4.6	100.0	100.0	1.8	100.0	100.0	4.3
No. of workers, '000s	2,221	3,529		320	385		2,541	3,914	

Source: LFSS 1988 and ELMS 1998.

Note: The term "economic units" refers to establishments for workers working in fixed establishment and to the activity itself for workers working outside establishments.

some caution.

## **Conclusions**

I argued in this paper that the combined effect of demographic forces on the supply side labor supply and elements of continuity and change on the demand side explain the evolution of labor market conditions in Egypt in the 1990s. The need to absorb some of the largest cohorts of youths to date have resulted in rapid labor force growth. The effects of demography can best be seen in the contrast between urban and rural areas. Higher lagged fertility in rural areas, combined with low levels of rural to urban migration, has translated into rapid labor force growth there and, in turn, into significantly higher unemployment rates for youth. Demographic pressures on labor supply will continue to be intense for another decade or so as the historically large cohort of ten to nineteen year olds makes its way into the labor market, but will subside thereafter when the smaller cohort of those below 10 reach their working ages. Behavioral changes have also played the role in influencing labor supply. Higher school enrollments and educational attainments have reduced participation rates among children and youths under the age of 18, but have increased participation among young women. Among older workers, female government officials are holding on to their jobs much longer than before, as these jobs become scarcer, but male self-employed workers are withdrawing from the labor force earlier. The combined effect of these behavioral changes is to reduce male participation rates and increase female participation by about the same amounts.

On the demand side, the continued rapid growth of civil service employment is an important element of continuity from the previous period, despite significant fiscal adjustment during the period. The structural adjustment program did manage to significantly curtail employment in State-owned enterprises and maintain a relatively high rate of employment growth in the private sector, especially among wage workers. However, this growth was

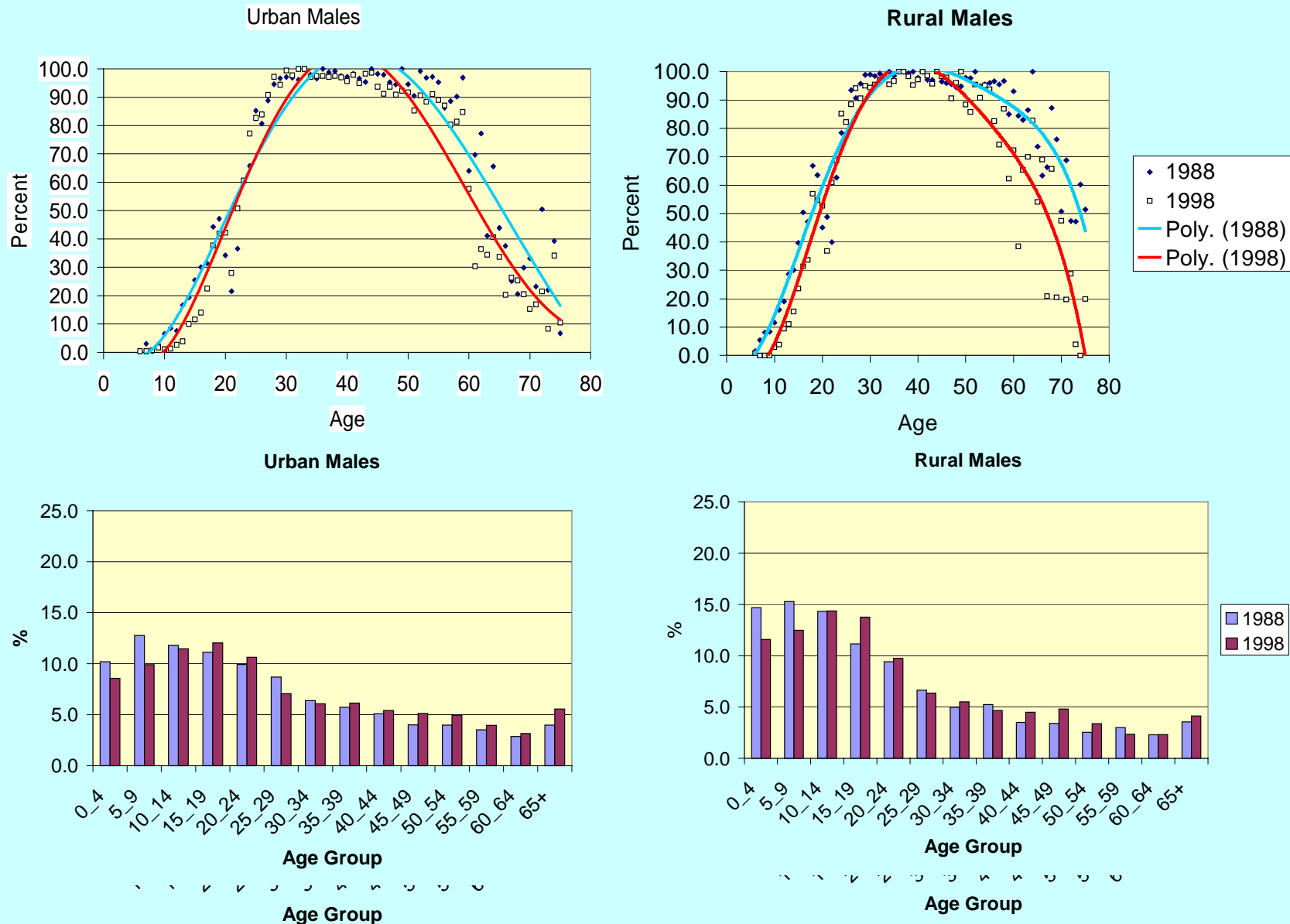
generally limited to the non-agricultural sectors and to male workers. While there was significant growth in non-agricultural employment for males residing in rural areas, a significant proportion actually had to commute to urban areas to get it. The combined effect of demography and sluggish rural economies resulted in the doubling of rural unemployment rates in the 1990s.

Female workers in Egypt appear to be facing significant barriers to entry into the private non-agricultural sector. The available evidence suggests that the constraints on female employment are more severe for very small firms, but the rate of female employment growth is significantly lower than that of males even for the largest firm size category. There are undoubtedly numerous barriers to female employment in the private sector in Egypt, but two sets of factors, in particular, require further investigation. First, women appear to be significantly more constrained in their mobility than males so that they are less able to either move to locations with significant female job growth or to commute to such locations on a daily basis. Second, labor-intensive, export-oriented industries, which have in other countries been the primary employers of female wage workers in the private sector, have not grown significantly in Egypt during this period. If such opportunities did materialize in Egypt and if they were appropriately located in the vicinity of populated centers, women are likely to benefit from them since they are already disproportionately represented among private sector manufacturing workers.

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**Figure 1**  
**Male Labor Force Participation Rates by Age, and Urban/Rural Location, and**  
**Age Distribution of The Male Population By Urban/Rural Location, 1988-1998**





**Figure 2 – Female Labor Force Participation Rates by Age, and Urban/Rural Location, and Age Distribution of the Female Population by Urban/Rural Location, 1988-1998**

