

THE EMPLOYMENT PROBLEM IN EGYPT:
THE EXTENT OF NON-PRODUCTIVE LABOR FORCE

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Introduction: There are a number of issues which fall under the heading "employment problem"; these include open unemployment, discouraged workers, low productivity/low income, underutilized skills, low human capital, etc. In this paper, our focus cuts across these distinctions; we are concerned with the size of that portion of the labor force which is not productively engaged. This covers a variety of labor force sub groups:

- redundant government workers
- redundant public enterprise workers
- the openly unemployed
- low or zero marginal product workers in informal sector
- low or zero marginal product agricultural workers on small holdings.

In addition, there are groups of discouraged workers who do not enter the labor force because of the difficulty of finding jobs (e.g. urban women).

In thinking about the magnitude of this underutilization of potentially productive labor, it is useful to distinguish the degree of present underutilization of labor resources from what may prevail in the future. In this paper we do not estimate the present degree of underutilization. We know underutilization exists, and on most accounts it is of major proportions; however, our focus is on the future. We seek to provide a quantitative estimate of the extent to which the pool of non-productive members of the labor force is likely to expand. Our view is pessimistic. Our conclusion

NB: Laurie Marshall contributed to the working out of the calculations contained in this paper..

is that however one assesses the degree of present underutilization, it is quite likely that the situation will get significantly worse.

The Coming Problem of Non-productive Labor Force

1. Time frame: Investment and technology strategy choices that are made today do not emerge as capital inputs that require labor complements until several years later. Assume that a five year time lag is average. Once new plant and equipment are in place they have a substantial life span, 15-20 years or more. For the most part, the employment consequences of various investment strategies currently under discussion begin no sooner than 1986 and run at least until the end of the century.
2. Labor force and population: Everyone who will be in the labor force age 20-65 by the year 2000 has already been born. Everyone who will be in the labor force 15-65 by the year 1995 has also already been born. Thus, by looking at the underlying population figures it is possible to get a relatively good fix on the size of the labor force for the period under question. The main areas of uncertainty have to do with participation rates, in particular, participation rates for women. A review of population changes over the past two decades shows that during the 1960's the rate of population increase generally moved downward from 2.6% in 1960 to 2.0% in 1970. Starting in 1970, however, there has been a gradual climb to roughly 3.0% by 1980. What this tells us is that labor force growth is going to continue to be high, and that even if there are no changes in participation rates, we will probably see significant growth in the labor force age 15-65 beginning in 1985. If, in addition, there are increases in the participation rate

(and for women the starting point is so low that vast increases are possible) we should expect truly substantial expansions. A reasonable band for the period 1985 to 1995 would seem to be between 2.5% and 2.8%. Let us assume the 2.5% rate for the purposes of our calculations, recognizing that this may prove to be conservative.* This is the rate of growth for the total labor force (i.e., domestic labor force plus emigrant workers).**

3. Where has new employment occurred? For the most part new employment has occurred in industry, in government employment, in commerce, in the unclassified informal sector and in the other countries to which Egyptians have emigrated. For the purposes of our analysis we assume that the level of emigrants abroad has reached a plateau. We assume no net return, but also no net outflow.

4. Ideally where would we have new employment occur? We rule out any expansion of government employment (not including the public enterprises). We do this because of a belief that widespread overstaffing already exists. Secondly, we rule out further expansion of the unclassified "other services" sector which we take to consist essentially of government services and the informal sector. We do this out of the belief that additions to the informal sector are not productive uses of labor. Finally, we rule out any increase in agricultural employment on the grounds that it is already extremely labor intensive, that land is relatively fixed, that mechanization is progressing and that if agricultural incomes are to keep pace with income growth elsewhere, agricultural employment will probably have to decline, since total output growth of the sector will probably not exceed 3% in real terms.

*In the calculations which follow, for purposes of simplicity, we have made ten-year projections working off the 1978 labor force numbers, rather than extrapolating them to 1985 and then making ten-year projections. Thus, our end-of-period increment is for the year 1988.

**This 2.5% growth rate for total labor force translates into 2.8% growth rate for the domestic labor force. Our labor force projections (see: "Strategy Reflections on Egypt") calculated a 1976-1991 growth rate of 2.9%-3.0% for the DLF.

This then vastly restricts the areas for new growth. Essentially we are left with the industrial sector (public and private), construction, and certain aspects of the services sector (transport, finance, commerce). We will call these the "productive/expansionary sectors."

5. Can these sectors provide jobs for the increased labor force? The problem is essentially twofold. On the one hand we have a rapid build-up of the labor force. On the other hand the number of sectors to which we would look for employment growth is limited. This results in a double burden on the sectors that we want to see expand (e.g. industry). A look at the numbers reveals the magnitude of this burden. Assume a 1978 employment base of 10,800,000 (this is composed of 9,400,000 domestic and 1,400,000 emigrants). Assuming unemployment stays at present rates, then the employment level must rise with the rate of labor force growth (2.5%). Assume 10 years of growth, and we have employment rising 28% or about 3,000,000. What growth rate is required in our "productive/expansionary sectors" in order to accommodate this growth? In 1978 we had roughly 4 million in agriculture and 2 million in government plus informal sector. This left 3.4 million in our "productive/expansionary sectors." So, what we are calling for is a 90% expansion of these sectors in ten years, or a compound growth rate of employment of about 6.6%. Is this doable? If we look at the ten-year period 1968-78, we find that these sectors have grown at a compound rate of 3.7%; moreover, if we look at the more recent period of high economic growth, 1973 to 1978, we find an employment growth rate of 4.2%.* Thus, since Egypt would be doing unusually well if it continued to grow at the recent high rates

*We will assume that all of this employment growth was in productive employment. If, as many believe, public enterprises have also expanded redundant employment, then we are over-estimating the ability of these sectors to generate productive jobs in the future.

for another decade, we can be reasonably confident that a leap to a 6.6% employment growth rate for these key sectors, will not occur.

6. What will happen? It would be reasonable to expect a) that the high rate of output growth in these sectors will moderate somewhat, and b) that there will be continued productivity gains in these sectors, with possible declines in marginal employment/output ratios. Thus, one can reasonably expect that the recent brisk rate of employment growth in these sectors will abate somewhat. Let us assume that it returns to 3.7% (which is not all bad). In ten years this is a 44% expansion or about 1,500,000 new jobs, only half of those that will be needed. Thus, 1,500,000 jobs will have to be found outside the productive sectors. If we rule out emigration this leaves:

1. increased open unemployment
2. expansion of government employment (outside the public enterprises)
3. expansion in informal sector activity
4. retention of additional labor in the agricultural sector
5. expansion in redundant public enterprise workers.

All of these expansions can be viewed as non-productive or not-particularly-productive uses of labor. We can expect that the residue of the labor force will be spread across all five categories, the exact proportions of which will depend, in part, on government policy. If, however, we view these expansions as having the common feature of not contributing to output, then whether we term this unemployment or not, we have roughly an additional 1.5 million persons not productively engaged.* This increment is roughly 11.8%

*It is not precisely correct to speak of this as "an additional" 1.5 million non-productives, as holding government and informal sector levels constant will result in some productivity gains for those already employed.

of the future domestic labor force. Added to the present level of open unemployment we have about 15.4% of the domestic labor force. To this figure one would want to add any present surpluses of government or informal sector workers that we believe would persist ten years hence if present levels for these sectors remained fixed, as well as any residual redundancy in public enterprises.

7. Sensitivity of the analysis: Several assumptions were made in the above analysis, and it is useful to see the extent to which the analysis is sensitive to alteration of these assumptions.

The key assumptions were:

(1) A 2.5% labor force growth rate was assumed. I regard this as at the low end of the spectrum. It does not assume major increases in female labor force participation rates, and it is more appropriate for the earlier phases of the planning period, rather than the later phases in which the "baby boomlet" of the 1970's enters the labor force in bulk. A high end of the spectrum would be a 2.8% growth rate. With that growth rate, in ten years, labor force rises roughly 32%, adding an additional 430,000 to our figure of 1.5 million outside productive employment. This gives us roughly 2 million additional persons outside productive employment; added to the present unemployment rate we would have 18.2% of the labor force nonproductively engaged, plus the residue of present redundant employment.

(2) The absolute number of emigrants was assumed constant. If that number were to increase by 500,000 then the nonproductive increment falls to one million. Of course, a net return of emigrants is also possible.

(3) Agricultural employment was taken to remain fixed. This assumption was made in part as a reasonable projection, and in part as a desiderata. If the productivity of agricultural labor is to keep pace with the rest of the society, and we assume that other sectors of the economy show productivity gains in the 3-4% per year range, and agricultural output rises at a 3% rate, then agricultural labor must remain constant or drop off slightly. Moreover, agricultural employment in absolute numbers in 1978 was lower than any of the preceding ten years. Again, if one wants to assume a 500,000 reduction in agricultural employment, the implication for our calculations is a rise of about 3.9% in the percentage of the labor force nonproductively engaged. Given the income disparities between rural and nonrural areas, if one were talking about goals, it would seem appropriate to talk about creating enough nonagricultural jobs so as to pull additional people out of agriculture.

(4) It was assumed that there was no increase in the "other services" sector. This of course does not include the distribution sector (transport, communication, trade, finance, etc.). Our assumption was that "other services" was made up largely of government service and of informal sector service activities. Our assumption of no increase was not a prediction but rather a normative constraint based on our belief that there is already considerable redundancy in these sectors and thus, holding constant for ten years would be a good step. This, of course, is a very loose area. Some estimates of redundancy in government service and in informal sector activity would suggest that an absolute reduction will be needed even after ten years of economic growth. If one were to hold government employment constant, and assume that it is 3/4 of the "other services" group, allowing the remaining quarter to grow at a 1% rate for ten

	Percentage Points Added to +11.8% Base Case	Number Added to +1.5 Million Base Case
(d) number of productive "other services" employed rises 200,000 .	-1.6	-200,000
(e) productive/expansionary sector employment grows at 3.2% rate .	+1.9	+238,000
grows at 4.2% rate .	-1.9	-238,000

9. The tables below show the combined impact of alternative assumptions on the increment to the nonproductive labor force group. The range of this expansion of nonproductives is from 593,000 in the optimistic scenario to 2,681,000 additional non-productives in the pessimistic scenario. We do not in this paper address the issue of policies needed to make the optimistic scenario more likely. Indeed, key elements of the optimistic scenario are outside the reach of policy instruments!

Pessimistic Scenario:

ASSUMPTIONS	Combined Effect of Assumptions on Increment to Nonproductive Domestic Labor Force			
	INCREMENT		CUMULATIVE	
	Percentage Points	Number	Percentage Points	Number
Base Case	11.8	1,513,000	11.8	1,513,000
2.8% Labor Force Growth	+2.8	430,000	14.6	1,943,000
500,000 Fewer Productive Workers in Agriculture	+3.8	500,000	18.4	2,443,000
3.2% Growth Rate for Employment in Productive/Expansionary Sectors	+1.8	238,000	20.2	2,681,000

Optimistic Scenario:

ASSUMPTIONS	Combined Effect of Assumptions on Increment to Nonproductive Domestic Labor Force			
	INCREMENT		CUMULATIVE	
	Percentage Points	Number	Percentage Points	Number
Base Case	11.8	1,513,000	11.8	1,513,000
500,000 More Emigrants	-3.5	482,000	8.3	1,031,000
Employment in Productive "Other Services" Rises by 200,000	-1.6	200,000	6.7	831,000
4.2% Growth Rate for Employment in Productive/Expansionary Sectors	-1.9	238,000	4.8	593,000

10. Total unproductive group as percentage of domestic labor force (increment + present open unemployment + residual of present nonproductives).

(a) Base Case: 11.8% + 3.6% open unemployment + residual of present nonproductive group = 15.4% + ? = 2 million people + ?

(b) Pessimistic Scenario: 20.2% + 3.6% + ? = 23.8% + ? = 3.2 million people + ?

(c) Optimistic Case: 4.8% + 3.6% + ? = 8.4% + ? = 1.1 million people + ?

As was indicated earlier, we are offering no estimate of the present degree of nonproductive labor, and thus we have no estimate for the residual from the present nonproductives (which we have designated with a question mark above). However, if one plugged in, say, a 5% figure, this would bring the total nonproductive segment of the labor force to between 13.4% (1.7 million) and 28.8% (3.8 million) depending on one's assumptions. It would bring our base case to 20.4% of the domestic labor force (2.6 million people). Our conclusion, then, is that regardless of the assumptions one makes, Egypt will have a significant problem of underutilization. One's choice of assumptions affects whether that problem is to be characterized as "serious" or "just plain horrible."

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