Labor Market Pressures in Egypt: Why is the Unemployment Rate Stubbornly High?

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Abstract

Unemployment is one of the key policy challenges in Egypt. The unemployment issue in Egypt is mainly about the educated youth seeking its first job. The mismatch of skills between job requirements and the qualification of job seekers, the high reservation wage of new school leavers, and limited labor mobility are at the root of the problem. The wage setting mechanism seems to be operating fairly efficiently in Egypt, and non-wage costs – although relatively high - do not appear to be a binding constraint. Moreover, recent legislation has on balance, increased labor market flexibility. Economic performance in Egypt has been uneven, but even in periods of fairly robust growth, unemployment has remained stubbornly high. This paper explores the job content of economic growth over the past decade and concludes that high growth may not necessarily lead to a substantial decline in unemployment unless it is sustained, is generated by more labor-intensive activities, and is accompanied by structural changes in the labor market.

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ضغوط سوق العمل في مصر: تفسير استمرار إرتفاع معدّل البطالة

محمد حسن

سايرس ساسانبور

ملخص

تشكل البطالة تحدياً كبيراً للاقتصاد المصري، وتتركز في الشباب المتعلمين الباحثين عن عمل لأول مرة. ويكمن جذر المشكلة في عدم التطابق بين المهارات المعروضة من طالبي العمل والمهارات المطلوبة في سوق العمل، بالإضافة إلى الأجر الاحتياطي المرتفع للعمال التاركين للمدرسة حديثاً، وأخيراً محدودية تحرك العمالة. ورغم ما حققته مصر مؤخراً من نمو إقتصادي قوي إلاّ أن البطالة بقيت عالية ومزمنة، فالنمو الاقتصادي لا يقود بالضرورة لانخفاض كبير في معدلات البطالة، إلاّ إذا كان مضطرداً ومرتكز على توسع في النشاطات كثيفة العمالة، ومترافقاً مع تغيرات هيكلية في سوق العمل.

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Introduction and Brief Historical Overview

Job creation is one of the most important challenges facing Egypt today. Demography is part of the problem. Egypt's population growth is not particularly high by peer group standards, but Egypt has a young population and a large number of young people enter the job market each year searching for first jobs. Demand for labor is the other side of the problem. Economic performance has been uneven in the past decade, but even in periods of high growth, the job content of growth has not been strong enough to absorb new entrants to the labor market. Disparities related to education, training and skills between the jobs offered and the qualification of job seekers have also hampered employment, particularly among the youth.

Until the mid-1970s, major public investment in heavy industries and import substituting activities generated sufficient growth and employment. Perhaps more importantly, the government's guaranteed employment policy absorbed the bulk of labor force entrants. Unemployment was low in the range of 2-3% and youth unemployment was virtually nonexistent, masking large costs and inefficiencies associated with a bloated public sector which surfaced later.

Following the adoption of more liberal economic policies in the mid-1970s, the investment rate doubled by the end of the decade. While growth also picked up from the mid-1970s in reaction to higher investment and productivity, the job content of growth was weak. High inflation, an overvalued exchange rate and a loose monetary policy lowered the cost of capital and encouraged capital-intensive activities (El Ehwany, 2004). The need to modernize the Egyptian industry hastened the process. The unemployment climbed to the 5-7% range, despite a fairly robust economic growth, and unemployment among the young and the relatively educated began to rise as the government began to curtail its guaranteed employment policy (and ended it in the late 1980s).

The pick-up in economic activity in the oil-producing countries in the region following the two rounds of oil price increases in 1973-74 and 1979-80 provided an important outlet for the Egyptian labor and helped partially defuse

the labor market pressures at home. The foreign demand for Egyptian labor was,

however, largely concentrated at the extreme ends of the skill spectrum and helped little in alleviating the problem of youth unemployment.

Since 1990, Egypt's unemployment rate has remained stubbornly high, in the range of 8-11%, through economic cycles, major structural changes in the Egyptian economy, a number of external shocks, and various government employment promotion schemes. Economic reforms in the early to mid-1990s lifted the growth profile, but the employment content of growth was weak, and the youth unemployment problem began to manifest itself forcefully. The unemployment worsened in the early 2000s as economic growth stagnated.

Investment and growth picked up strongly from 2005 in reaction to a broad-based economic reform program that the government began to implement from mid-2004. A favorable external economic environment provided added support. The growth surge since the end of 2004 has been reflected in higher overall employment, especially in the more recent period as growth became broad-based and more job-rich. According to Egypt's national statistical agency, the CAPMAS (The Central Authority for Public Mobilization and Statistics), close to 2.5 million new jobs were created between the end of 2004 and March 2007 and the unemployment rate declined from 10.5% to 9% during this period. However, the problem of youth unemployment remains undiminished.

Currently, an estimated 2 million Egyptians are out of work. The overall unemployment measures, high as they are, do not sufficiently reflect the extent of labor market pressures in Egypt, and in particular, the socio-economic problems of high youth unemployment and widespread underemployment.

The aim of this paper is to analyze the job content of economic growth and identify the key constraints to job creation in Egypt.

Labor Force and Unemployment

Characteristics of the Labor Force

Table 1 presents a snapshot of the Egyptian labor market as of 2006.

Table 1. Snapshot of the Labor Market, 2006

| Population	72.6 million
Population growth rate	1.9%
Labor force	21.9 million
Labor force/Population	30.2%
Unemployed	2.0 million
Unemployment rate	9.3%

Source: CAPMAS 2006 Population Census

The labor force in Egypt has been growing at about 2.8% per annum in recent years, with the peer group entering the work force for the first time growing at closer to 3% annually. The youth (15-29 age group) comprises 38% of the labor force in 2005 (Figure 1a).

The labor force is heavily dominated by men (more than three fourths of the total) because of low female participation rate (Figure 1c). According to the 1996 census,[1] the overall participation rate was only 41% because of the exceptionally low participation rate for women (13%). Other labor market surveys, however, report higher rates of female participation, but still significantly lower than those for males. The International Labor Office (ILO, 2006a)[2] reports a female participation rate of 22% in 2005, compared to a male participation rate of 77%. Assaad (2002) reports an even higher (and probably more realistic) female participation rate of 46% and a male participation rate of 72% in 1998, the latter being comparable to the 1996 census estimate of 69%.[3]

The lower female participation rate reflects cultural norms as well as the early exit of women from the labor force either to start a family, out of frustration after a long job search, or both. However, most surveys suggest that female participation has been inching upward as women are becoming better educated, delaying marriage, and seeking to support family income. At the same time, the participation rate for men has been declining as many young men unable to find jobs may be inclined to extend their education.

The education level of Egypt's labor force is fairly low (about half has less than intermediate schooling), but is improving (Figure 1d). The labor force's geographical composition reflects Egypt's roughly 40-60 urban-rural population divide which is growing in favor of the rural areas because of the higher rural population growth and slower (and possibly reversal of) migration to the urban areas (Figure 1b).
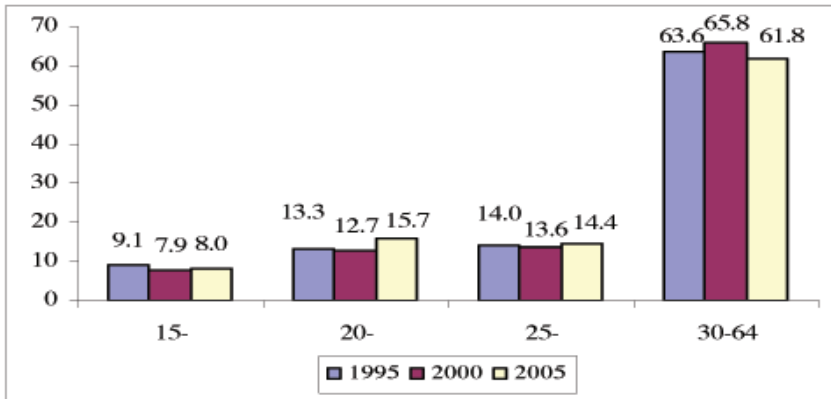
Source: Calculated based on the CAPMAS data from three annual labor surveys: 1995, 2000 and 2005.

Figure 1a. Labor force by age (%)
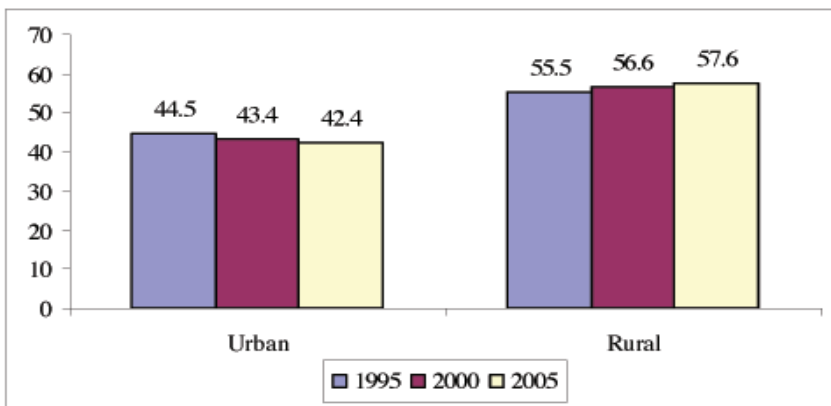
Source: Calculated based on the CAPMAS data from three annual labor surveys: 1995, 2000 and 2005.

Figure 1b. Labor force by area (%)

Source: Calculated based on the CAPMAS data from three annual labor surveys: 1995, 2000 and 2005.
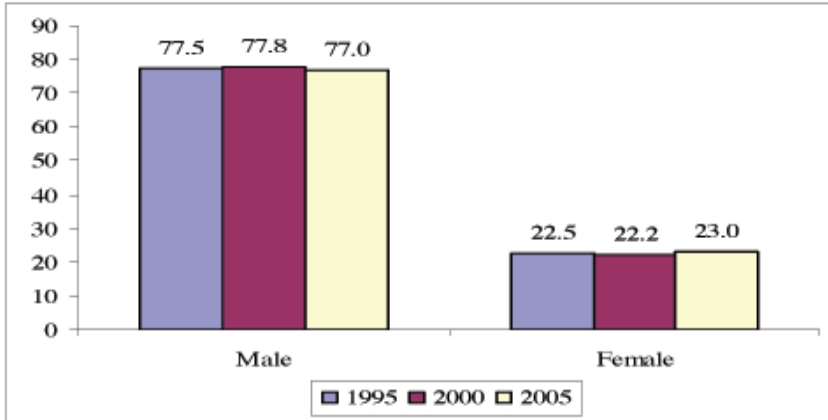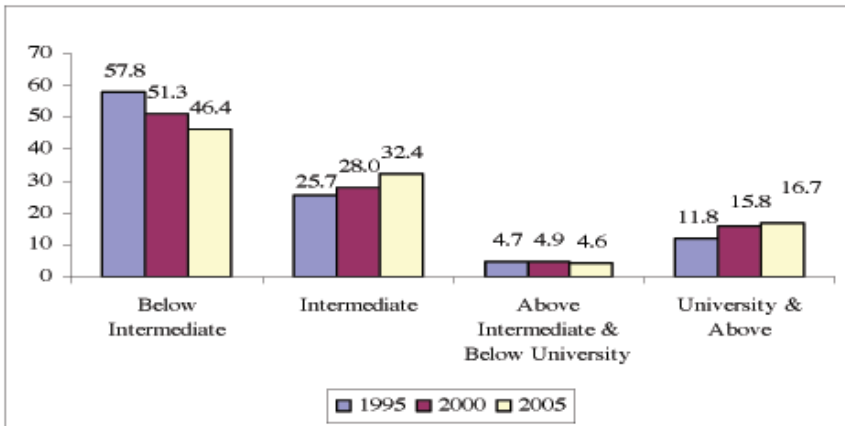
Figure 1c. Labor force by gender (%)

Source: Calculated based on the CAPMAS data from three annual labor surveys: 1995, 2000 and 2005.

Figure 1d. Labor force by education (%)

The Nature of Unemployment

The unemployment problem in Egypt is more related to labor market insertion (finding the first job) than getting back on the job ladder.[4] It is more

about the educated youth than the illiterate, unskilled middle age workers. The problem is particularly acute among women and is worse in the urban areas.

According to the 2005 Labor Force Sample Survey compiled by CAPMAS,[5] 92% of all those unemployed are below the age of 30. About half of all the unemployed are in the 20-25 age group, the age when the youth enters the job market for the first time after completing secondary or higher education. The unemployment rate for the 20-25 year age group has been in the range of 30-40% in the past decade with a declining trend as the "youth bulge" of the mid-1990s is growing older and is moving forward in the age brackets (Figure 2a). There is hardly any recorded unemployment in the over-30 age group, although this peer group accounts for 62% of the labor force. Many frustrated job seekers, and particularly women, exit the labor force by the time they are in their early 30s.

The unemployment rate among women is more than three times higher than men (Figure 2c). A great majority of young educated women seeking employment prefer government jobs and are willing to accept long job searches. Women account for about 30% of government sector employees compared to about 20% in total employment.[6] Women prefer government jobs because of its security, flexibility, better working conditions, social security and other benefits, most importantly maternity leave which is less common in the private sector. However, with government jobs becoming scarcer, the search/wait time for the new young entrants to the labor market has increased, contributing particularly to the high rates of female unemployment and the early exit of women from the labor force. Moreover, many better educated women are unwilling to work in the low-pay, low skill informal sector.

The unemployment rate is higher among the better educated, particularly among those with intermediate education (Figure 2d). There is hardly any recorded unemployment among the illiterate and those with lower than intermediate education.

The unemployment rates are slightly higher in urban areas as more people in the rural areas can make subsistence living on the margins by working on family plots or by engaging in small scale retail activities (Figure 2b). Partly as a

result of long and costly job search in urban areas, the rural-urban migration flow seems to have moderated, and has even reversed by some accounts.
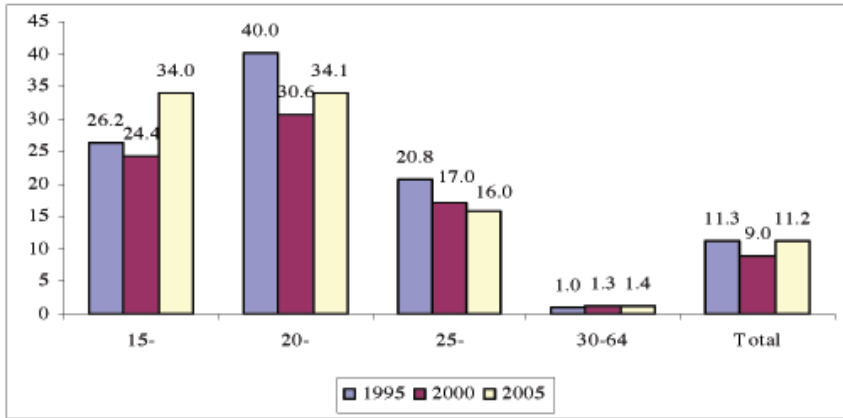
Source: Calculated based on the CAPMAS data in three annual labor surveys: 1995, 2000 and 2005.

Figure 2a. Unemployment rate by age (%)
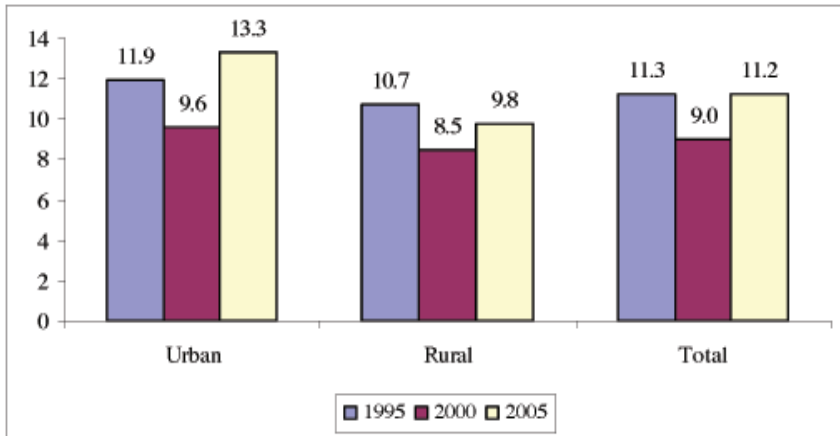
Source: Calculated based on the CAPMAS data in three annual labor surveys: 1995, 2000 and 2005.

Figure 2b. Unemployment rate by area (%)
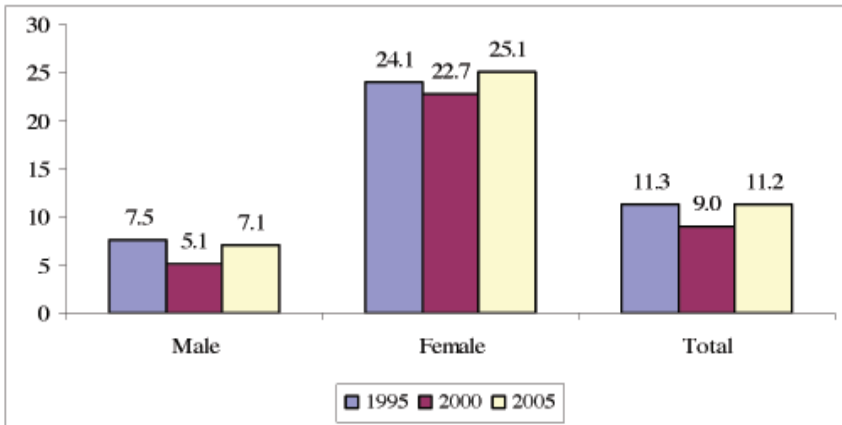
Source: Calculated based on the CAPMAS data in three annual labor surveys: 1995, 2000 and 2005.

Figure 2c. Unemployment rate by gender (%)
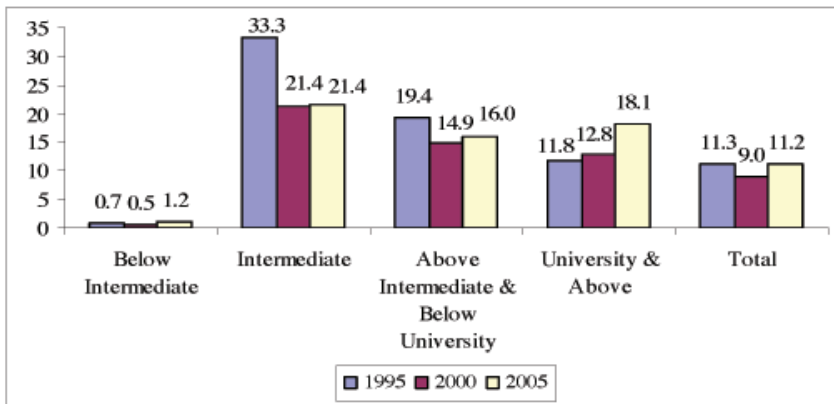
Source: Calculated based on the CAPMAS data in three annual labor surveys: 1995, 2000 and 2005.

Figure 2d. Unemployment rate by gender (%)

The above characterization of unemployment in Egypt is heavily influenced by young first-time job seekers. Focusing on the unemployed peer group that had previously worked shifts the gender and geographical unemployment divide dramatically against men in the urban areas. In 2005, more than 80% of them

were men, over 70% resided in urban areas, and greatest number had worked in service industries. However, since this peer group accounts for less than 1% of the unemployed, no strong conclusions should be drawn, although these findings are widely supported by anecdotal evidence. Moreover, many workers laid off in the formal sector seek refuge in the informal sector and exit the unemployment pool.

One of the interesting characteristics of unemployment in Egypt is that it is not necessarily associated with poverty. The bulk of the young and better educated unemployed can afford a long job search with family support, but the poor simply cannot afford to be out of work for long and many take refuge in the low-pay informal market. The problem of the working poor in Egypt is underemployment and low wages.[7]

According to El-Laithy et al (2003), "the Egyptian poor tend to live in large families, have low levels of education, work in the informal sector and be concentrated in low-paying unskilled activities". The study concludes that the level of education is the major determinant of poverty in Egypt: 28% of the households headed by an illiterate are poor compared with only 8% of households headed by a person with secondary education. In terms of employment status, El-Laithy et al (op cit.) report that 20% of households headed by an unemployed person are poor, only slightly higher than the 17% of households headed by a salaried person that are poor. In fact, the largest share of the poor is among the self-employed, mostly in the informal sector: 25% of self-employed households in non-agricultural activities are poor.

Informal Labor Market

The informal sector acts as an important shock absorber to the formal sector and has both counter-cyclical and pro-cyclical features. It serves as an important source of low-pay employment where many poor and uneducated job seekers take refuge. Because of its low-pay, low-skill nature, it is not an important employment outlet for the better educated youth seeking their first jobs. It also has pro-cyclical features as economic gains in the formal sector readily spill over into production and employment gains in the informal sector.

The informal sector in Egypt is estimated to account for roughly one-third of total GDP, or about 40% of private sector GDP, assuming a 70-30 private-public distribution of GDP. The informal sector's share in private sector employment is believed to be well above one half.

There are only scant estimates of employment in the informal sector. A 1996 CAPMAS survey estimated employment in the informal sector at 4.8 million out of the estimated total employment of 15.5 million at that time. At the current total employment level of roughly 20 million, that would translate to 6.2 million. In all likelihood, however, the share of the informal sector in total employment has increased markedly in the past decade as the formal job market had not been able to absorb all job seekers. Galal (2004) reports an employment level of 8.2 million in the informal sector, much higher than the 6.8 million that he estimates for the formal private sector.

Informal sector employment is dominated by wholesale and retail trade, low- technology manufacturing, construction, and transport. Majority of these activities are heavily dominated by men. A 1998 survey by the CAPMAS on employment in the informal industrial sector reports that men account for 87% of employment in this sector, with their share being as high as 99% in certain activities within the sector. A more recent CAPMAS survey conducted in 2004 on the informal wholesale trade reports the share of male employment at 94%. On the other hand, women dominate low-skill domestic help and personal services in the urban areas, and micro-business activities and small-scale retail trade in the rural areas. The informal sector is particularly appealing to women because its flexibility allows them to balance their income needs with their household commitments.

Recognizing the importance of the informal sector in income generation and employment, and its flexibilities, a number of studies (see, for example Rizk, 2004) have advocated policies to promote the informal sector, rather than to force its formalization. Others (for example, Galal, 2004) have argued in favor of formalization of the informal sector on the grounds that it promotes efficiency and cost reduction by improving access to infrastructure, bank credit, and markets. The informal sector covers a broad spectrum of activities and entity sizes. It would probably make sense for certain activities and larger entities to be

brought into the formal sector to increase their access to financing and markets, while others (mostly microbusinesses) would need to retain their flexibility in the informal market.

Egypt in a Regional Context

Egypt's rapid growth of labor force is not unique among its peer group in the Middle East and North Africa (MENA) region (Figures 3 and 4). At 2.8% per annum, the labor force growth rate in Egypt over the past decade has been somewhere in the middle of the range for the MENA region. Algeria, Iran, Jordan and Syria have recorded higher rates of labor force growth, mostly attributed to the growing number of women in the labor force. The participation rate of women in Egypt, however, is the lowest among the peer group.
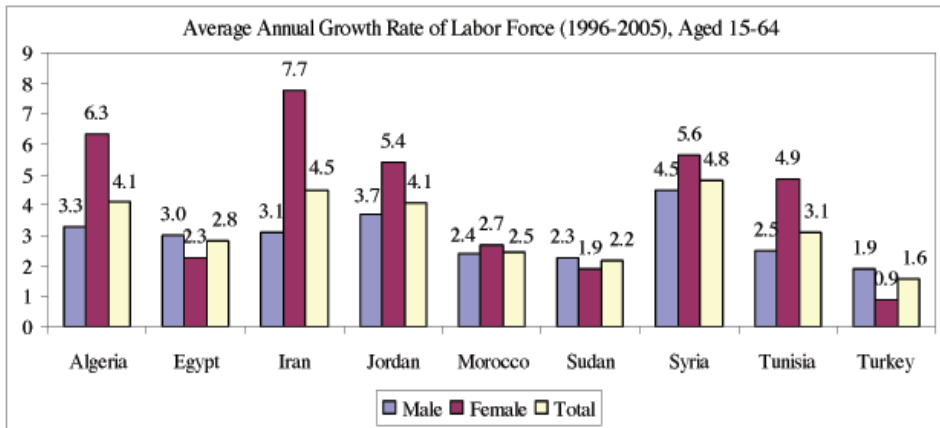
Source: Calculated based on ILO estimates.

Figure 3. Labor force growth rates of MENA countries
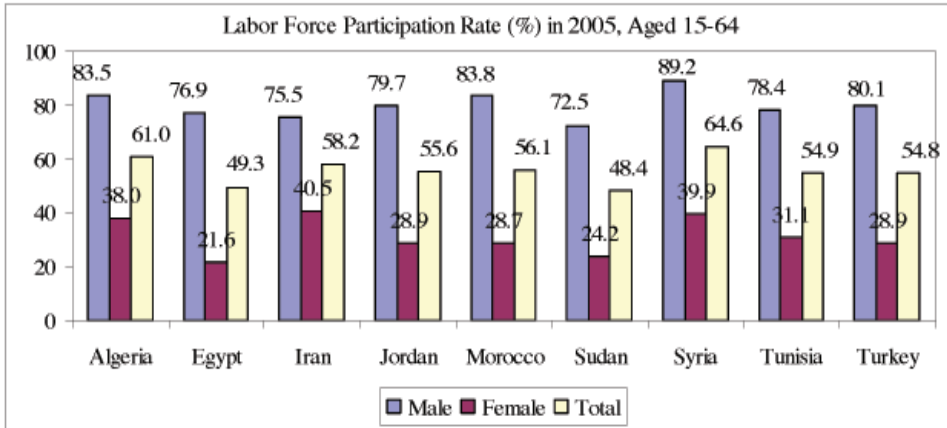
Source: Calculated based on ILO estimates.

Figure 4. Labor force participation rate of MENA countries

High unemployment is a regional phenomenon; many MENA countries facing rapid population growth with a young age profile are facing a similar problem (Figure 5). High as it is, and notwithstanding measurement problems and differences, the unemployment rate in Egypt is at the lower end of the range of the MENA countries. However, the acute problem of female unemployment stands out in Egypt (only surpassed by Syria) despite the low female participation rate.
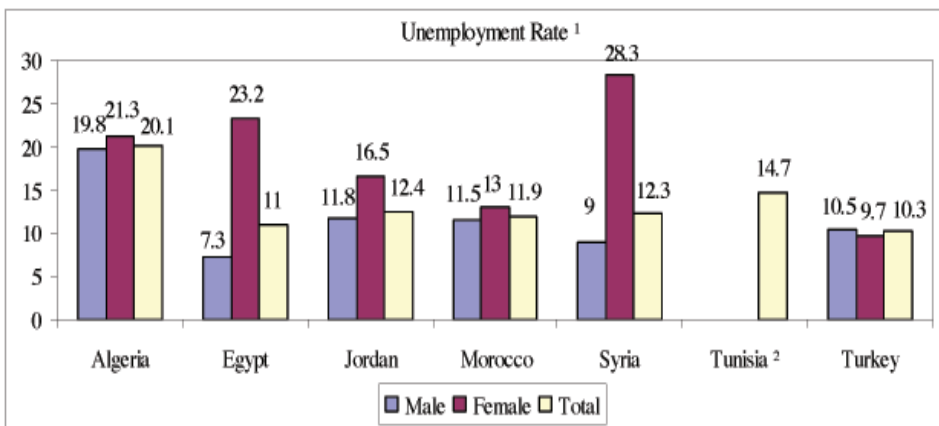
[1] Unemployment rates in 2003, except for Algeria, Jordan and Turkey which are for 2004. The age coverage is 15+, except for Egypt which is 15-64 years.
[2] Not available by gender.
   Source: ILO database (2006a).

Figure 5. Unemployment rate of the MENA region countries.

Measuring Unemployment in Egypt

While there is no dispute that unemployment is a major socioeconomic challenge in Egypt, estimates of the unemployment rate vary. There are even divergent views among analysts regarding the trend and direction of unemployment.

There is a narrow and a broad definition of unemployment. The narrow definition considers as unemployed all individuals aged between 15 and 64 who are physically able to work, want to work, and have been actively searching

for jobs during the reference period before the survey (a week, a month, or longer), but could not find work. The official employment survey data compiled and published by the CAPMAS are based on this narrow definition, where the reference job search period is the week preceding the survey. The broad definition drops the search criterion, and includes as unemployed both the searching and non-searching jobless individuals.

While the International Labor Organization (ILO) has recommended the narrow measure, it recognizes that the broader concept may be more appropriate in countries or situations "where the conventional means of seeking work are of limited relevance, where the labor market is largely unorganized or of limited scope, where labor absorption is, at the time, inadequate, or where the labor force is largely self-employed" (ILO, 1982). The Egyptian labor market conditions fit these criteria fairly closely. The narrow definition with a short reference period (say, a week, as used by the CAPMAS) may be viewed as the lower bound for unemployment, and the broad definition as the upper bound. As the reference period prior to the survey increases, the unemployment rate will exceed the lower bound, but will remain below the upper bound.

Why would an unemployed person stop job search and would this have any bearing on the definition of unemployment? Kingdon and Knight (2006) offer two possible explanations. One explanation ("taste for unemployment") is that families (and less ambiguously, the higher-income families) can support their unemployed members and consequently there is an incentive for the

unemployed to consume more leisure. In this case, as in the narrow definition, it makes sense not to count non-searching individuals as unemployed because they have chosen voluntarily to consume more leisure indefinitely. According to the second explanation ("discouraged worker"), the frustrated job seekers stop job search when the duration of unemployment becomes long and the economic conditions are not favorable. In this situation, the broad definition is perhaps more relevant because the condition of "actively searching for a job" is misleading as the unemployed individual may have chosen to exit the labor force permanently. There is evidence of both of these features in the Egyptian labor market.

There could also be other explanations for stopping job search. In the transition toward a market-oriented economy, the private sector plays an increasingly larger role as the government sector retreats. In the process, a new class of economic elites gradually emerges, dominating many aspects of economic activity. It is often the case that the ability to secure a job in the formal market might hinge on the access to these elites. In this case, even if the economic and labor market conditions might not be particularly unfavorable, the lack of access to "job holders" makes the job search less productive. The Egyptian labor market also exhibits this feature which could explain the lack of job search by the unemployed and their early exit from the labor force even under favorable economic conditions.[8]

What is the best measure of unemployment in Egypt?

According to the official CAPMAS data, the unemployment rate has been fairly steady in the range of 9-11% in the last decade during peaks and troughs of economic cycles. The CAPMAS data, based on the narrow definition, may be taken as the lower bound of the unemployment rate, as discussed earlier. Comparable data are not available for the broad definition of unemployment. The only estimates of unemployment based on the narrow and broad definition are offered by Assaad (2006) using longitudinal microeconomic data collected from the Egypt Labor Market Panel Survey conducted in 2006 as a follow-up to the panel survey of 1998. According to Assaad, the unemployment rate declined from 11.7% in 1998 to 8.3% in 2006 based on the narrow definition, and from 13.8% to 8.7% during the same time frame based on the broad definition.

Irrespective of the definition, Assaad's surveys suggest a fairly significant decline in the unemployment rate since the late 1990s, which is not borne out to the same extent by the official CAPMAS data. Of course, the CAPMAS cross-section data for a specific period and the longitudinal data used by Assaad are not comparable, and Assaad's measurements are only available for the two reference periods of 1998 and 2006.

The CAPMAS employment data also mask the significant degree of underemployment among those classified as employed. For example, in the reference week before the 2005 Labor Force Sample Survey (Table 2), only

60% of those reported employed actually worked a full week of 45 hours or more. The ratio was significantly lower in rural areas and among women.

Table 2. Average Hours Worked per Week by Gender and Area, 2005 (%)

		< 5	5-	10-	15-	25-	35-	45-
	M	0.3	0.3	0.2	1.6	3.8	20.3	73.4
Urban	F	0.3	0.8	2.2	1.7	4.0	37.8	53.1
	T	0.3	0.4	0.6	1.6	3.8	23.4	69.8
	M	0.2	0.2	0.3	3.1	6.8	27.8	61.2
Rural	F	0.3	2.2	16.8	15.0	15.0	25.5	24.8
	T	0.2	0.6	3.7	5.6	8.5	27.3	53.7
	M	0.3	0.3	0.3	2.5	5.5	24.6	66.3
Total	F	0.3	1.7	11.3	10.0	10.9	30.1	35.5
	T	0.3	0.5	2.4	3.9	6.6	25.7	60.4

Source: Calculated based on the CAPMAS unpublished data.

Institutional Framework of the Labor Market: Is it Flexible Enough?

Job creation in many countries facing high unemployment, is hampered by labor market rigidities and inefficiencies. Many of these typical rigidities - inflexible wage structure, high minimum wages, high non-wage costs, strong unionized activity - are either not an issue or are not a binding constraint in the case of Egypt. Employment outside the public sector is dominated by the

agricultural sector and the large and growing informal sector, both of which traditionally follow flexible market rules. The wage setting mechanism seems to be functioning fairly efficiently in the private sector, with adequate wage differentiation across sectors and skill levels. The unionized sector is small and unionized activities (collective bargaining and industrial actions), although increasing noticeably in the past 2-3 years, are still fairly limited.

There are no minimum wages in the private sector. Labor Law 12/2003 established a National Council of Wages to set the minimum wage every year and even stipulated an annual increase of no less than 7%. However, the Council has not issued any decisions since its inception.

Wages in the private sector are set largely by the interplay of supply and demand for labor. Wage flexibility is best evidenced by the erosion of real wages in the private sector during the second half of 1990s when economic activity stagnated (Figure 6). Private sector real wages increased in 1999-2000 before stagnating again. It is only since 2003-3004 that real wages in the private sector have begun to firm as demand for labor has picked up. Real wages in the public sector (government and public enterprises) broadly tracked those in the private sector during the 1990s, but have grown much faster since 2000. By 2005, average nominal wages in the public sector exceeded those in the private sector by one-half. Within the overall sluggish private sector wage growth, there are pockets of strong labor demand and wage pressure for certain high skill activities, especially during the boom years of 2006-2007.

Source: Derived from the CAPMAS unpublished data, adjusted for a '2000 outlier' using data published on the CAPMAS official website.

Figure 6. Real wages in the public and private sectors, 1995-2005

Social security benefits are provided under various laws in Egypt. Law 79/1975 establishes retirement and disability pensions and survivor benefits for government and public sector employees and those employed in the formal private sector. Contributions are set at 25% (10% paid by the employee and 15% by the employer) of the base wage. Additionally, there is a remuneration scheme paid as a lump sum upon retirement, financed by a 5% contribution (3% paid by employee and 2% by employer).

Law 108/1976 establishes pension, retirement and disability benefits for employers and self-employed persons. The contribution rate is 15% of income. Law 112/1980 provides old age, disability and survivor benefits to causal and temporary workers - many of whom would be employed in the informal sector - as a budget-funded social safety net. The contribution rate is a flat LE 1 (currently, $US 0.20) per month (in effect since 1992) and benefits are payable at the flat rate of LE 80 per month. Unemployment benefits are financed through an employer's contribution of 2% of basic wage.

Law 12/2003 also establishes an emergency fund to provide financial support to dismissed workers for a limited time, financed through a 1% fee imposed on basic wage paid by the employer.

Non-wage labor costs (employer's contributions toward social security, sickness, unemployment, disability, and survivor benefits) are high in Egypt.[9] However, they do not appear to be a major constraint to employment. Non-wage costs in the large and growing informal sector are minimal. Even in the formal sector, many employers refuse binding contracts to avoid the high cost of the social security system (El-Megharbel, 2007). Moreover, even in case of formal contracts, the high social security costs have encouraged both employers and employees to under-report wages.

Recent legislation has strengthened the institutional and legal framework of the labor market. In particular, Law 12/2003 provides more freedom to employers in direct hiring and firing, the use of temporary or fixed term contracts, and the power to modify contracts.[10] At the same time, it allows the employees the right to strike (under restrictive conditions) and to engage in collective bargaining (for firms with more than 50 workers). The law also stipulates compensation benefits and severance pay, and offers female workers maternity leave, child care provisions and restrictions on working hours. In essence, Law 12/2003 aims at striking a balance between labor market flexibility, which it recognizes as an essential ingredient for employment generation, and the protection of labor rights. The consensus is that the Law has introduced greater flexibility in that part of the private labor market which is governed by formal employment contracts and established practices.

Assaad (2002) estimates, however, that about 80% of new jobs created in the nonagricultural sector are not covered by contracts. The share of non-contract employment might have even increased as firms try to maintain their flexibility. Most of the informal sector remains outside the purview of the labor law.

The major factor impeding employment in Egypt, particularly of its educated youth, is the skill mismatch between the job requirements and the qualifications of job seekers.[11] According to business surveys (see, for example, ECES (2007)), insufficient skill workforce is one of the major constraints affecting businesses. Most of the jobs created domestically or abroad either require no skills or demand high technical skills which the first time job seekers do not possess. The technical skill shortcoming among the secondary school graduates

is mainly the outcome of an outdated, rigid and inefficient education system. Moreover, with the comforts of a family support network, the educated youth has a relatively high reservation wage and is not particularly mobile. The high cost of living in cities, and the difficulties and costs of commuting to urban centers have tended to discourage rural-urban migration in search of jobs, particularly among women.

The problem of skill mismatch is not unique to Egypt. In fact, many labor surplus developing countries have similar experiences. Rama (1998) estimates "matching functions" for Tunisia and concludes that the matching process is particularly inefficient for the unskilled and first time job seekers. The "mismatch problem" is not even unique to the developing countries. The problem of over-education and the mismatch between job demand, and education and skill specific labor supply have also been studied extensively in the industrial countries.[12] The skill mismatch problem and remedies are specialized issues which go beyond the scope of the present paper.

Job Content of Economic Growth, 1995-2005

Egypt's strong economic recovery since 2004 and its stubbornly high unemployment rate have brought into focus the relationship between economic growth and unemployment. This relationship has two components: (a) the relationship between economic growth and employment growth; and (b) the

link between employment growth and the unemployment rate. Economic factors mainly drive the first, while demographics and other factors that influence labor supply drive the second.[13] Since the labor force growth in Egypt has been fairly stable in the past decade, the relationship between economic growth and employment growth has become the core issue in the debate on unemployment.

While this relationship has been examined for a number of individual countries and country groups,[14] the present study is the first attempt to investigate the employment intensity of economic growth at the aggregate as well as at the sector level for Egypt.

Why is it that employment growth in Egypt has been relatively subdued during periods of high economic growth? There are at least three plausible explanations:

- Firstly, the economic growth has been unbalanced across sectors and many of the growing sectors of the economy have low job content because of the type of technology employed. It is only in the more recent period that job-rich sectors (agriculture and construction) have been contributing more to the overall economic activity.
- Secondly, many firms react to growing activity by increasing labor utilization rather than increasing employment. In this case, a much higher economic growth and of a longer duration would be needed to convince the firms to hire more labor.
- Thirdly, employment could be more of a lagging economic indicator than a coincident one. If the economy exhibits inconsistent economic growth, as has been the case in Egypt, employment might not increase significantly during boom periods because a slow-down is expected to follow. In this case, longer periods of high and sustained economic growth would be required for the employment to increase significantly.

Mapping Economic and Employment Growth

Table 3 tabulates the simple average and the standard deviation of economic growth and employment growth during the period 1997-2005 for all sectors. It also shows the weight of each sector in GDP and employment.

Table 3. Summary Statistics on Growth and Employment, 1997-2005

	GDP			Employment		
	Average Weight	Growth Rates (%)		Average Weight	Growth Rates (%)	
		Mean	Std. Dev.		Mean	Std. Dev.
Agriculture	15.18	3.41	0.84	29.78	2.49	5.41
Industry & Mining /Manufacturing	19.47	5.26	2.87	12.04	0.71	5.92
Petroleum & Products/Mining	6.75	-0.08	3.98	0.26	-0.52	32.24
Electricity, Gas & Water	2.38	7.18	0.91	1.24	3.29	7.32
Construction	5.24	3.24	4.54	7.72	4.76	6.74
Total Commodities	49.03	3.73	1.10	51.05	2.30	3.22
Transportation & Communications	7.37	5.59	1.25	6.32	4.70	4.97
Trade, Hotels & Restaurants	19.32	5.24	3.79	13.59	3.31	6.79
Finance	4.14	4.81	2.47	1.09	-0.47	8.22
Other Services	20.22	4.27	0.74	27.90	2.58	3.37
Total Services	51.06	4.86	1.62	48.89	2.93	2.95
Grand Total	100	4.23	1.09	100	2.54	0.79

Source: Calculated based on data from the CAPMAS annual labor surveys and the Ministry of Economic Development (various years)

Employment growth for the economy as a whole, averaged 2.5%, with the service sectors contributing more than the commodity sectors. The construction sector and the transport and communication sector experienced the highest employment growth, while employment in the petroleum and mining sector, and in the financial sector actually declined. All sectors had higher standard deviations of employment growth than the economy as a whole. Excluding the two sectors with declining employment, the standard deviation of employment growth was in the range of 3-7%. This might suggest that the idiosyncratic shocks that have affected the petroleum and mining, and finance sectors are considerably more important than the common shocks that have hit all sectors.[15]

On the growth side, real GDP growth averaged 4.2%, with a larger contribution coming from the utilities, manufacturing, and service sectors. The construction sector followed by trade, hotels and restaurants sector - all high employment activities - exhibited the highest volatility. Again, it seems that the idiosyncratic shocks that influenced these sectors were more important than the

systematic shocks affecting all sectors. In addition, these sectors usually exhibit notable differences in cyclical sensitivity.

Sectoral Contributions to Employment and Economic Growth

The contribution of each sector to employment growth and economic growth over the period 1995-2005 are shown in Figures 7 and 8 below.[16] The employment intensity of economic growth at the sector level may be summarized as follows:

- Trade, hotels and restaurants; and transportation and communication contributed highly to both employment growth and economic growth;
- Industry and mining contributed more to economic growth compared to their contribution to employment growth;
- Construction and agriculture contributed less to economic growth and more to employment growth; and
- The remaining sectors had a low contribution to both economic growth and employment growth.
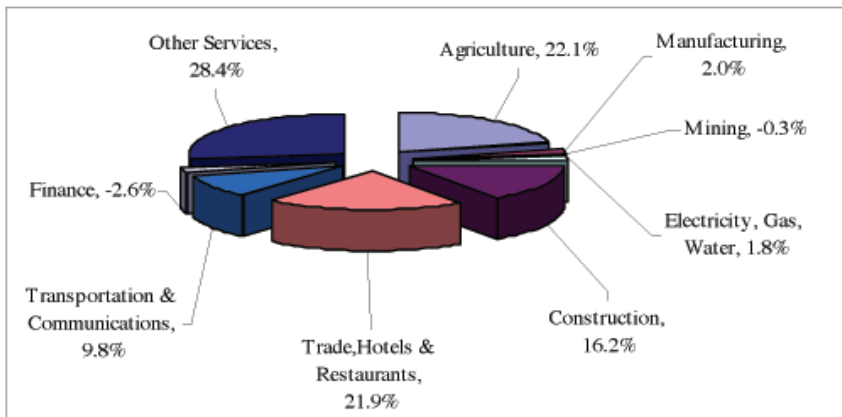
Source: Calculated based on data in the CAPMAS annual labor surveys.

Figure 7. Sector contributions to employment growth, 1995-2005
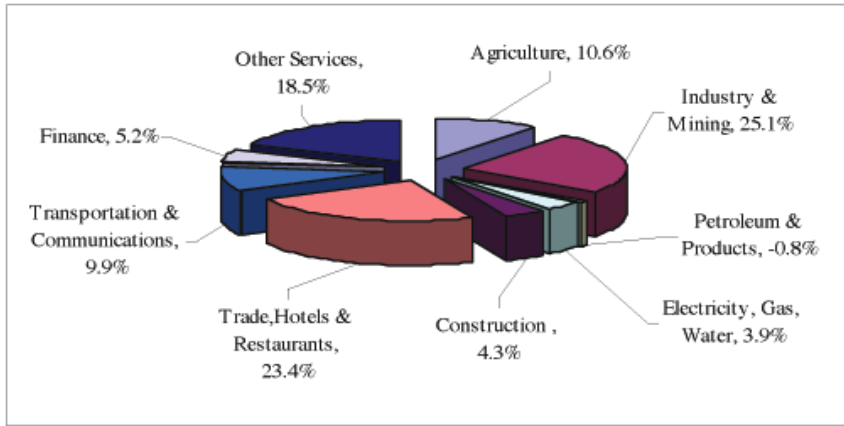
Source: Calculated based on data from the Ministry of Economic Development (Various years).

Figure 8. Sector contributions to real GDP growth, 1995-2005

In the decade 1995-2005, the economy created about 4.3 million jobs, with the service sectors accounting for 2.5 million and the commodity sectors for the rest (Table 4 and Figure 9). Within the commodity sector, the construction and agriculture sectors accounted for virtually all of the increase in employment. Interestingly, the manufacturing sector contributed negatively to cumulative employment through 2004. There could be a number of reasons. Overall investment in the manufacturing sector had been sluggish until recently. Investment in state owned industrial firms has declined significantly in recent years, and private investment has lagged behind. In addition, investment has been biased toward those sectors that employ capital-intensive technology (Fawzy, 2002).[17]

Table 4. Cumulative Increases in Employment as of 1995 (thousands)

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Agriculture	-75.1	-203.6	-219.3	70.9	-15.7	-112.5	385	931.9	945.9
Mining	1.3	28.3	6.7	6.7	18.8	3.8	-8.7	-8.7	-11.7
Manufacturing	-12	-103.3	62.1	-97.3	-30.5	-74.8	-168.6	-60.4	84.2
Electricity, Gas & Water	25.9	36.6	40.2	42.4	43.4	75	61.9	51.7	78.5
Construction	195.7	329.9	362.9	401.4	391.2	357.9	383.8	442.3	692.6
Total Commodities	135.8	87.9	252.6	424.1	407.2	249.4	653.4	1356.8	1789.5
Trade, Hotels & Restaurants	392.8	656.8	749.7	705.8	880.2	1069.9	882.3	1016.3	937.5
Transportation & Communications	20.5	51.4	157.5	223.3	239.5	230.2	242.6	268.7	420
Finance	-102.7	-108.4	-97.5	-97.1	-83.3	-63.2	-82.8	-86.9	-113.5
Other Services	276.8	437.5	629.9	888.2	1052.8	1311.6	1366.1	1105.6	1216.9
Total Services	587.4	1037.3	1439.6	1720.2	2089.2	2548.5	2408.2	2303.7	2460.9
Grand Total	771.9	1124.8	1692	2145	2498.5	2798.1	3060.5	3659.3	4283.6
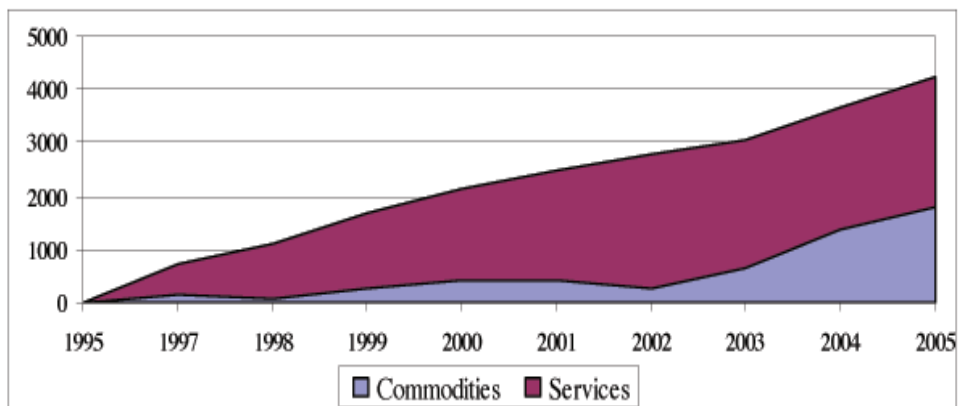
Source: Calculated based on data in the CAPMAS annual labor surveys.

Figure 9. Contributions to cumulative employment increases
as of 1995 (thousands)

Quantifying the Relationship Between Employment
Growth and Economic Growth

Regression Analysis. Several studies have estimated employment elasticities with respect to economic growth at an aggregate level. Boltho and Glyn (1995) found elasticities of employment in the 0.5-0.6 range for a subset of OECD countries. Walterskirchen (1999) estimated an employment elasticity of 0.65 for the EU using a cross-country analysis for the period 1988-1998.

Similar to Boltho and Glyn (1995), the authors estimate the elasticity of employment using the following simple equation:

$$\Delta \log \text{Employment} = \beta \Delta \log \text{RGDP} + \gamma \text{Dum } 1996 + \varepsilon$$

where RGDP is real GDP,[18] and Dum 1996 stands for a dummy variable that takes on the value of one in 1996, the census year, and zero in other years.[19] The data cover the period 1992-2005.

$$\Delta \log \text{Employment} = 0.585 \, \Delta \log \text{RGDP} - 3.149 \, \text{Dum } 1996$$
$$(9.57) \qquad\qquad (-3.07)$$

The employment elasticity is estimated at 0.59 and is statistically significant at 1% level (t statistics in the parentheses).[20] The adjusted R^2 is 0.36. Breusch-Godfrey test indicates that there is no autocorrelation. While this analysis is partial and not structural, it still has useful policy implications.

Arc Elasticities. In the absence of sufficiently long sectoral data, the arc elasticity is used to measure the employment intensity of economic growth (Table 5).

Table 5. Arc Elasticities of Employment, 1995-2005

	Growth Rate (%)	Employment Growth Rate (%)	Elasticity
Commodity sectors	37.2	19.4	0.52
Service sectors	48.4	31.0	0.64
GDP	42.4	24.9	0.59

Source: Calculated based on data from the CAPMAS and the Ministry of Economic Development (various years).

While the elasticities for most individual sectors cannot be relied upon because of the volatility that these sectors have exhibited in employment growth, in economic growth, or both, the elasticities for the commodity sector, the services sector, and the economy as whole may be used with some confidence. The elasticity for the economy as a whole is found to be 0.59, identical to the estimate obtained in the regression analysis. The elasticity for services sector (0.64) exceeds that for the commodity sector (0.52). The relationship between

the elasticity of employment with respect to GDP and the elasticity of productivity with respect to GDP is worth highlighting. As expected, the productivity elasticity[21] for the commodity sectors (0.48) is higher than that for the service sectors (0.36). This implies that in a growing economy, while the employment gains in the service sectors exceed that of the commodity sectors, the productivity increases in the commodity sectors exceed that of the service sectors.

Illustrative Scenarios of Unemployment, 2006-2011

A key policy question in Egypt is how high an economic growth trajectory would ensure a sustained fall in the unemployment rate. The link between economic growth and the unemployment rate may be further disaggregated into the following subset of questions:

- What minimum growth rate would prevent the unemployment rate from rising from its present level and what additional growth would be necessary to reduce the unemployment rate?
- What would be the impact of structural changes in the production-labor relationship on the unemployment rate, and how much higher the economic growth would have to be to compensate for the lack of structural changes?

These questions are addressed by developing five illustrative scenarios for the next five years, using 2006 as the base.[22] The "low uneven growth" and the "high sustained growth" scenarios are the two extremes. The former is based on the pattern of uneven economic growth that has characterized the Egyptian economy in the past quarter of the century. Real GDP growth averaged 4.4% over the period 1992/93-2005/06, with three years of relatively low growth

(less than or equal to 3.2% per annum) and two years of relatively high growth (higher than or equal to 5.7%).[23] The high growth scenario is based on an annual growth rate of 7%, close to the rate recorded in the past two years. The "neutral" scenario highlights the conditions under which the unemployment rate would remain basically unchanged over the period. Finally, there are two benchmark scenarios where the employment implications of the same economic growth are investigated with and without structural changes in the relationship between employment growth and economic growth.

All scenarios assume an annual labor force growth rate of 2.9%, equal to the average growth over the period 1998-2005. All scenarios are based on an employment elasticity of 0.59 with the exception of the second benchmark scenario which assumes a higher employment elasticity as a proxy for structural changes that improve labor absorption.

For quantifying these scenarios, the authors first calculated the end of period (2011) labor force and real GDP[24] and then used the employment elasticity to translate the accumulated economic growth into employment growth. Subsequently, the end of period unemployment rate is calculated (Table 6 and Figure 10).

Table 6. Illustrative Scenarios for Unemployment, 2006-2011

| | 2006 | | | | 2011 | | | | Assumptions | | |
| | | | | | | | | | 2006-2011 | | |
	Emp.	Labor Force	Unemp.	Unemp. Rate (%)	Emp.	Labor Force	Unemp.	Unemp. Rate (%)	Annual GDP Growth Rate (%)	Elasticity	Annual Labor Force Growth Rate (%)
Low growth	19,877,329	21,917,429	2,040,100	9.3	22,715,575	25,285,205	2,569,630	10.2	4.43	0.59	2.9
Neutral					22,940,114		2,345,091	9.3	4.75	0.59	
Benchmark 1					23,477,241		1,807,965	7.2	5.50	0.59	
Benchmark 2					24,453,488		831,717	3.3	5.50	0.75	
High growth					24,598,304		686,901	2.7	7.00	0.59	

Source: Authors' estimates of 2011, based on 2006 data from the CAPMAS and the Ministry of Economic Development (various years).
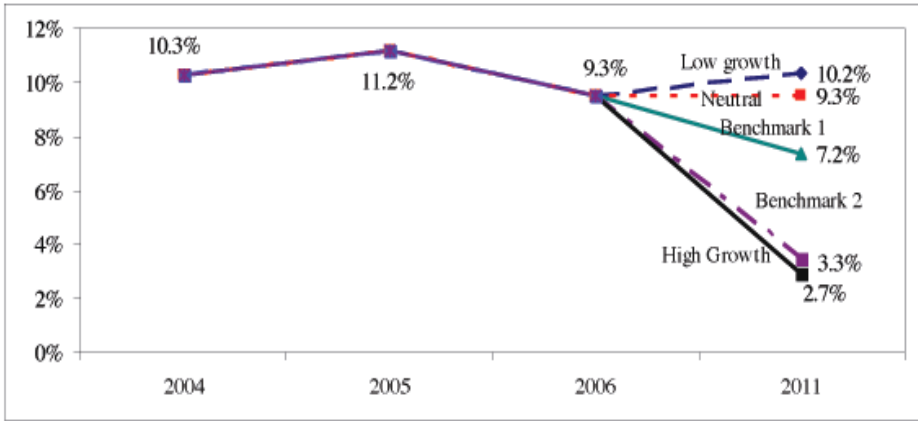
Figure 10. Illustrative scenarios for unemployment rate, 2011

"Low uneven growth" scenario. This scenario assumes that the real GDP grows by 4.4% per annum (the average growth rate over the period 1992/93-2005/06) over the coming five years. In view of growth rates of around 7% in 2006 and 2007, it implies annual growth rates of around 3.5 % per annum during 2008-2011. While the likelihood of this scenario is fairly slim, it sheds light on the risks attached to large cyclical swings that Egypt has experienced in the past. This is the only scenario under which the unemployment rate increases from 9.3% in 2006 to 10.2% in 2011.

Neutral" scenario. An economic growth rate averaging 4.8% per annum would keep the unemployment rate unchanged at the 2006 level.

Benchmark scenario without structural change. This scenario assumes that real GDP will grow at its roughly estimated potential rate of 5.5% per annum.[25] According to this scenario, the unemployment rate would decrease moderately to 7.2% by the end of the period, which is still relatively high.

Benchmark scenario with structural change. While this scenario maintains the assumption of an economic growth of 5.5% per annum, it further assumes that structural changes would raise the employment elasticity to 0.75.

This could happen, for instance, by using policies to channel the economic growth into those sectors with higher employment elasticities. The likelihood of this scenario hinges on the early introduction of a package of medium and long-term policies. It is unlikely, however, that such a policy could produce a dramatic change in employment elasticity in the medium term. Nevertheless, the point is to stress that the impact could be indeed substantial as the unemployment rate under this scenario plunges to 3.3% by the end year.

"High sustained growth" scenario. What additional growth would compensate for the absence of structural changes? This scenario suggests that an average growth rate of 7% per annum would reduce the unemployment rate to around the same level by 2011 as in the previous scenario. Naturally, the impact would be even more significant if combined with structural changes that raise the employment elasticity.

Robustness of Results to Changes in Labor Force Growth Rate

The analysis so far has focused on labor demand. All illustrative scenarios are based on the assumption that the labor force growth rate remains fixed at 2.9%. How sensitive are the scenarios to an increase in the labor force growth arising, for example, from a gradual increase in the participation rate? This could happen if, for example, the higher economic growth (and employment) were to result in higher wages that exceed the reservation wages of those who have temporarily exited the labor market, especially women.

Again for illustrative purposes, the unemployment scenarios above are simulated for the effect of a gradual increase in the participation rate to 52% by the end of the projection period, compared to 49% in 2005. Such an increase in the participation rate would be consistent with a gradually rising labor force growth of 3-3.5% during the period, averaging 3.3% over the period, compared to 2.9% under the previous set of scenarios. This is under the assumption that the population growth rate of the 15-64 age bracket would remain constant over the period. Most of the increase in the participation rate would be expected to come from an increase in the women participation which, as already discussed, is quite low. Specifically, female participation is assumed to increase from 21.6% in 2005 to about 26%, while the male participation rate remains constant.

Table 7. Illustrative Scenarios of Unemployment under Higher Labor Force Growth

| | | | | | Assumptions | | |
| | | 2011 | | | 2006-2011 | | |
	Emp.	Labor Force	Unemp.	Unemp. Rate (%)	Annual GDP Growth Rate (%)	Elasticity	Annual Labor Force Growth Rate (%) 3.3
Low growth	22,715,575	25,780,493	3,064,918	11.9	4.43	0.59	
Neutral	23,372,198		2,408,295	9.3	5.36	0.59	
Benchmark 1	23,477,241		2,303,252	8.9	5.50	0.59	
Benchmark 2	24,453,488		1,327,005	5.1	5.50	0.75	
High growth	24,598,304		1,182,188	4.6	7.00	0.59	

Source: Authors' estimates of 2011, based on 2006 data from the CAPMAS and the Ministry of Economic Development (various years).
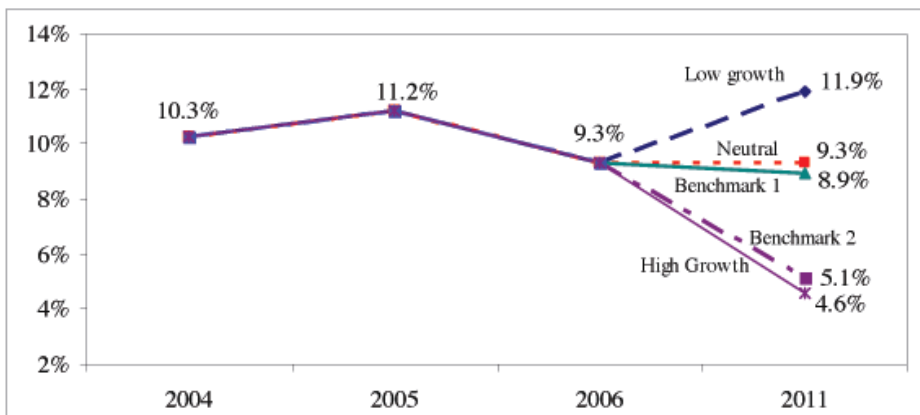
Source: Authors' estimates; and CAPMAS data.

Figure 11. Illustrative scenarios of unemployment under higher
labor force growth, 2011

Table 7 and Figure 11 highlight the sensitivity of the abovementioned results to a possible increase in the labor force growth rate. With a higher labor force growth rate, other things equal, the unemployment rate under the low growth scenario increases to about 12% (10.2% previously). In the neutral scenario, the economic growth required to keep the unemployment rate unchanged at its

2006 level rises to 5.4% instead of 4.8% previously. The benchmark scenario without structural change would lead to only a slight decrease in the unemployment rate from its 2006 level, but would decline more significantly with structural changes that increase labor absorption for the same rate of economic growth. Finally, with the rising labor force growth, the decline in the unemployment rate under the high growth scenario (to 4.6%) would significantly exceed the rate under the constant labor force growth scenario.

Conclusion

The unemployment rate in Egypt has been persistently high in the last decade, with the problem being most acute among the better educated youth. There are various (and often incomparable) measures of the unemployment rate, and the official measure of around 9-10% possibly forms the lower bound. Apart from the measurement problem, there is also wide evidence of under-employment in the formal sector.

The Egyptian private labor market is fairly efficient. There is no binding minimum wage; wages are flexible; non-wage costs (although significant) are in most cases non-binding; and employers follow fairly liberal hire/fire practices. The lack of employment opportunities for the young, first time job-seekers arises from a host of other factors, including: the skill mismatch, a high reservation wage, and limited labor mobility.

The unemployment issue has both supply and demand dimensions. On the supply side, the issues are the rapid growth of the labor force and the young age profile of the population. On the demand side, the uneven overall economic performance and the low job content of growth are the key issues.

The paper explores the interaction of supply and demand for labor. Given the stable growth of the labor force, it focuses on the employment intensity of economic activity at the sector level. Within an uneven overall economic performance of the last decade, the paper argues that the growing sectors of the economy are not necessarily those that contribute significantly to employment generation.

The paper presents a set of illustrative medium-term scenarios to highlight the employment impact of economic growth and structural changes in the labor market. The trade-off is fairly significant: in the absence of structural changes to improve the employment response. Much higher rates of economic growth would be required to increase employment. The illustrative scenarios also suggest that the decline in unemployment associated with rapid economic growth would be substantially less if the labor force begins to expand even slightly faster than what has been the case in the recent past. A clear implication is that high economic growth may not necessarily lead to a substantial decline in unemployment unless: (a) it is sustained; (b) it is generated by sectors with high employment content; and (c) it is accompanied by structural changes in the labor market.

Maintaining high rates of growth requires higher rates of investment and improvements in the efficiency of investment. Increasing the employment response to growth requires policies to promote activities and sectors which have large labor content (services, construction, agriculture). Structural changes in

the labor market would include measures to improve skill levels (vocational training, on-the-job training, upgrading the education system) in line with the changing requirements of the labor market. These are not short-term issues. Addressing the unemployment problem in Egypt, especially among its youth, is a generational issue with a high socioeconomic trade-off.

Footnotes

[1] National census is conducted every ten years. The full results of the 2006 census are not yet available.

[2] ILO database.

[3] Assaad's survey extended the coverage to subsistence activities (agriculture and animal husbandry) which more than doubled the female participation rate.

[4] See also Galal (2002), Radwan (2002), Van Eekelen et al (2001), and ILO (2006b).

[5] The CAPMAS conducts annual (and since 2004, quarterly) labor market surveys, except in census years when the census results are used. The CAPMAS has also conducted three special labor market surveys, in 1988, 1998 and 2006, but the results are not fully comparable.

[6] For a review of civil service employment and wage policy, see Handoussa and El Oraby (2004).

[7] See also Awad (2003), El Ehwany (2004) and El-Laithy et a. (2003).

[8] According to a survey by the government's Information and Decision Support Center (IDSC), and reported in the Egyptian Gazette (May 18, 2007), 70% of jobs are secured through favoritism.

[9] Non-wage costs in Egypt are higher than most comparators. See World Bank (2007).

[10] The law excludes the public sector. It also excludes agriculture and many activities that are typically in the informal sector (e.g., domestic help).

[11] See Van Eekelen et al (2001) for various initiatives and programs to promote youth employment in Egypt.

[12] See, for example, Clogg and Shockey (1984), Alba-Ramirez (1993), and Halaby (1994).

[13] See Okun (1962). For more details on Okun's law, see also Knotek (2007).

[14] See Boltho and Glyn (1995) and Walterskirchen (1999), among others.

[15] Oil production fluctuated notably and gas production came on stream at the end of the period. The financial intermediaries saw, after the boom of mid-to-late 1990s, a severe credit crunch which was partly associated with the problem of nonperforming loans.

[16] The relative contribution of each sector to economic growth is calculated as: $RCG_i = w_i\, g_i\, / GDP_g$ where RCGi refers to the relative contribution to economic growth by sector i, w_i to sectoral weight in GDP, g_i to sectoral growth, and GDP_g to real GDP growth. The relative contribution of each sector to employment growth is calculated as:, $RCL_i = \Delta L_i / L$, where RCL_i stands for relative contribution to employment growth, ΔL_i for the increase of employment in sector i, and ΔL for the increase of employment in the whole economy.

[17] Fawzy (2002) found a general trend toward employing more capital-intensive technology in the manufacturing sector, with investment biased against small and micro enterprises that typically use labor-intensive technology.

[18] The GDP data are from the World Bank, World Development Indicators, CD-ROM, 2006. The employment data are from ILO, Key Indicators of the Labor Market, 4th Edition, CD-ROM, 2006a .

[19] The coverage and measurement of unemployment in census years (1996 in this sample) are different from non-census years where the data are based on labor force surveys.

[20] When regressing employment growth on the lagged real GDP growth, instead of the contemporaneous real GDP growth, and controlling for autocorrelation among residuals, the estimated employment elasticity is still statistically significant at 1% level, but declines to 0.52, while the adjusted R^2 increases to 0.41.

[21] Elasticity of productivity = 1- elasticity of employment.

[22] The authors used the 2006 census results announced by the CAPMAS to set the initial conditions, where age coverage is 15+. It may be recalled that the CAPMAS data refer to the narrow definition of unemployment.

[23] These growth rates are one standard deviation from the average growth rate during the period.

[24] The following formula: $y_{t+5} = y_t(1+r)^5$ is used, where y refers to the initial value and r stands for the growth rate.

[25] Authors' estimates based on various trend analysis (linear, quadratic, Hodrick-Prescott filter) over the past quarter of century suggest a potential real growth rate in the region of 4.8% per annum, the same as the average real growth rate over this period. With the ongoing major structural changes in the economy, a trend shift of about 1 percentage point seems feasible, suggesting a potential growth rate in the region of 5.5-6%

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